AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

FEDERAL REGISTER

Vol. 79 Wednesday,
No. 175 September 10, 2014

Pages 53601–54184

OFFICE OF THE FEDERAL REGISTER

The **FEDERAL REGISTER** (ISSN 0097–6326) is published daily, Monday through Friday, except official holidays, by the Office of the Federal Register, National Archives and Records Administration, Washington, DC 20408, under the Federal Register Act (44 U.S.C. Ch. 15) and the regulations of the Administrative Committee of the Federal Register (1 CFR Ch. I). The Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 is the exclusive distributor of the official edition. Periodicals postage is paid at Washington, DC.

The **FEDERAL REGISTER** provides a uniform system for making available to the public regulations and legal notices issued by Federal agencies. These include Presidential proclamations and Executive Orders, Federal agency documents having general applicability and legal effect, documents required to be published by act of Congress, and other Federal agency documents of public interest.

Documents are on file for public inspection in the Office of the Federal Register the day before they are published, unless the issuing agency requests earlier filing. For a list of documents currently on file for public inspection, see *www.ofr.gov.*

The seal of the National Archives and Records Administration authenticates the Federal Register as the official serial publication established under the Federal Register Act. Under 44 U.S.C. 1507, the contents of the **Federal Register** shall be judicially noticed.

The **Federal Register** is published in paper and on 24x microfiche. It is also available online at no charge at *www.fdsys.gov*, a service of the U.S. Government Printing Office.

The online edition of the **Federal Register** is issued under the authority of the Administrative Committee of the Federal Register as the official legal equivalent of the paper and microfiche editions (44 U.S.C. 4101 and 1 CFR 5.10). It is updated by 6:00 a.m. each day the **Federal Register** is published and includes both text and graphics from Volume 59, 1 (January 2, 1994) forward. For more information, contact the GPO Customer Contact Center, U.S. Government Printing Office. Phone 202-512-1800 or 866-512-1800 (toll free). E-mail, *gpocusthelp.com.*

The annual subscription price for the **Federal Register** paper edition is $749 plus postage, or $808, plus postage, for a combined **Federal Register, Federal Register** Index and List of CFR Sections Affected (LSA) subscription; the microfiche edition of the **Federal Register** including the **Federal Register** Index and LSA is $165, plus postage. Six month subscriptions are available for one-half the annual rate. The prevailing postal rates will be applied to orders according to the delivery method requested. The price of a single copy of the daily **Federal Register,** including postage, is based on the number of pages: $11 for an issue containing less than 200 pages; $22 for an issue containing 200 to 400 pages; and $33 for an issue containing more than 400 pages. Single issues of the microfiche edition may be purchased for $3 per copy, including postage. Remit check or money order, made payable to the Superintendent of Documents, or charge to your GPO Deposit Account, VISA, MasterCard, American Express, or Discover. Mail to: U.S. Government Printing Office—New Orders, P.O. Box 979050, St. Louis, MO 63197-9000; or call toll free 1-866-512-1800, DC area 202-512-1800; or go to the U.S. Government Online Bookstore site, see *bookstore.gpo.gov.*

There are no restrictions on the republication of material appearing in the **Federal Register.**

How To Cite This Publication: Use the volume number and the page number. Example: 77 FR 12345.

Postmaster: Send address changes to the Superintendent of Documents, Federal Register, U.S. Government Printing Office, Washington, DC 20402, along with the entire mailing label from the last issue received.

SUBSCRIPTIONS AND COPIES

PUBLIC

Subscriptions:

Paper or fiche	**202–512–1800**
Assistance with public subscriptions	**202–512–1806**
General online information	**202–512–1530; 1–888–293–6498**

Single copies/back copies:

Paper or fiche	**202–512–1800**
Assistance with public single copies	**1–866–512–1800 (Toll-Free)**

FEDERAL AGENCIES

Subscriptions:

Assistance with Federal agency subscriptions:

Email	*FRSubscriptions@nara.gov*
Phone	**202–741–6000**

Printed on recycled paper.

Contents

Federal Register

Vol. 79, No. 175

Wednesday, September 10, 2014

Agricultural Marketing Service
RULES
Soybean Promotion, Research, and Consumer Information Program:
Procedures and Notification of Request for Referendum, 53605–53606
PROPOSED RULES
Process for Establishing Rates Charged for Services, 53633–53646
NOTICES
Referendum Requests:
Soybean Promotion and Research Order, 53684–53685

Agriculture Department
See Agricultural Marketing Service
See Animal and Plant Health Inspection Service
See Food Safety and Inspection Service
See Forest Service
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals, 53684

Animal and Plant Health Inspection Service
RULES
Bovine Tuberculosis Status of Michigan:
Advance Counties from Modified Accredited Advanced to Accredited-Free, 53606–53608

Bureau of Safety and Environmental Enforcement
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Oil and Gas Drilling Operations, 53721–53728

Centers for Disease Control and Prevention
NOTICES
Meetings:
Disease, Disability, and Injury Prevention and Control Special Emphasis Panel, 53709
Safety and Occupational Health Study Section, National Institute for Occupational Safety and Health, 53709–53710
Requests for Nominations:
Board of Scientific Counselors, National Institute for Occupational Safety and Health, 53710

Coast Guard
RULES
Guidance:
Lifesaving Devices; Uninspected Commercial Barges and Sailing Vessels, 53621–53631
PROPOSED RULES
Special Local Regulations:
Clearwater Super Boat National Championship, Gulf of Mexico, Clearwater Beach, FL, 53671–53673

Commerce Department
See Foreign-Trade Zones Board
See International Trade Administration
See National Oceanic and Atmospheric Administration

Commodity Futures Trading Commission
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals, 53697–53698

Comptroller of the Currency
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Company-Run Annual Stress Test Reporting Template and Documentation for Covered Institutions with Total Consolidated Assets of 50 Billion Dollars or More under the Dodd–Frank Wall Street Reform and Consumer Protection Act, 53835–53838
Interagency Questions and Answers Regarding Community Reinvestment, 53838–53850

Defense Department
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions, 53708–53709

Education Department
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Annual Performance Report for the State Grant for Assistive Technology Program, 53698
Early Childhood Longitudinal Study Kindergarten Class of 2010–11, Spring Third Grade National Collection, Fourth Grade Recruitment, and Fifth Grade Tracking, 53698–53699
Studies of Rural Education Achievement Program Grantees, 53699–53700

Employment and Training Administration
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Planning Guidance and Instructions for Submission of the Strategic State Plan; Plan Modifications for Title I of the Workforce Investment Act and Wagner–Peyser Act, 53786–53787
Meetings:
Native American Employment and Training Council, 53787

Energy Department
See Federal Energy Regulatory Commission

Environmental Protection Agency
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Final National Pollutant Discharge Elimination System Small Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels Less than 79 Feet, 53701–53702

Final National Pollutant Discharge Elimination System:
Small Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels Less than 79 Feet, 53702–53707
Stipulated Injunction in Northwest Center for Alternatives to Pesticides v. EPA Litigation, 53707–53708

Executive Office of the President
See Presidential Documents

Federal Aviation Administration
PROPOSED RULES
Establishment of Class D Airspace and Amendment of Class E Airspace:
Dallas, GA, 53669–53670
Selma, AL, 53667–53669
NOTICES
Petitions for Exemptions; Summaries, 53824–53825

Federal Deposit Insurance Corporation
NOTICES
Interagency Questions and Answers Regarding Community Reinvestment, 53838–53850

Federal Emergency Management Agency
RULES
Suspensions of Community Eligibility, 53618–53621
NOTICES
Proposed Flood Hazard Determinations, 53717–53720

Federal Energy Regulatory Commission
NOTICES
Combined Filings, 53700–53701
Initial Market-Based Rate Filings Including Requests for Blanket Section 204 Authorization:
R.R. Donnelley and Sons Co., 53701

Federal Highway Administration
PROPOSED RULES
Additional Authorities for Planning and Environmental Linkages, 53673–53683
NOTICES
Final Core Toll Concessions Public–Private Partnership Model Contract Guide, 53825–53834

Federal Reserve System
NOTICES
Interagency Questions and Answers Regarding Community Reinvestment, 53838–53850

Federal Retirement Thrift Investment Board
RULES
Legal Process for the Enforcement of a Tax Levy or Criminal Restitution Order Against a Participant Account, 53603–53605

Federal Transit Administration
PROPOSED RULES
Additional Authorities for Planning and Environmental Linkages, 53673–53683
NOTICES
Buy American Waivers:
Pad and Rubber Boot of a Concrete Block for a Low Vibration Track System, New York City Transit, 53834–53835

Fish and Wildlife Service
NOTICES
Endangered and Threatened Wildlife and Plants:
Technical/Agency Draft Recovery Plan for the Dusky Gopher Frog, 53728–53729

Food and Drug Administration
RULES
Medical Devices; Immunology and Microbiology Devices:
Classification of Dengue Virus Nucleic Acid Amplification Test Reagents, 53608–53609
PROPOSED RULES
General Safety Test Regulations:
Biologics License Applications; Revocation of Duplicative Requirements; Correction, 53670
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Health and Diet Survey, 53711–53712
Testing Communications on Biological Products, 53710–53711
Guidance:
Unique Device Identification System; Small Entity Compliance Guide, 53712–53713

Food Safety and Inspection Service
NOTICES
Discontinuing Export Certificates for Food Products that Contain Egg Products as an Ingredient, 53685–53686
Meetings:
Codex Alimentarius Commission; Committee on Nutrition and Foods for Special Dietary Uses, 53686–53687

Foreign-Trade Zones Board
NOTICES
Reorganizations under Alternative Site Framework:
Foreign-Trade Zone 134, Chattanooga, TN, 53688
Subzone Expansions:
BMW Manufacturing Company, LLC, Subzone 38A, Greer, SC, 53688

Forest Service
NOTICES
Meetings:
White Pine–Nye Resource Advisory Committee, 53687–53688

General Services Administration
PROPOSED RULES
General Services Administration Acquisition Regulations:
Federal Supply Schedule Contracting; Administrative Changes, 54126–54144
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions, 53708–53709

Health and Human Services Department
See Centers for Disease Control and Prevention
See Food and Drug Administration
See Health Resources and Services Administration
See National Institutes of Health

Health Resources and Services Administration
NOTICES
Meetings:
National Advisory Committee on Rural Health and Human Services; Correction, 53713

Homeland Security Department
See Coast Guard
See Federal Emergency Management Agency
See U.S. Citizenship and Immigration Services

Housing and Urban Development Department
RULES
Model Manufactured Home Installation Standards:
Ground Anchor Installations, 53609–53618

Interior Department
See Bureau of Safety and Environmental Enforcement
See Fish and Wildlife Service
See National Park Service
See Surface Mining Reclamation and Enforcement Office

International Trade Administration
NOTICES
Antidumping or Countervailing Duty Investigations, Orders, or Reviews:
Certain Oil Country Tubular Goods from India and the Republic of Turkey, 53688–53691
Certain Oil Country Tubular Goods from India, the Republic of Korea, Taiwan, the Republic of Turkey, and the Socialist Republic of Vietnam, 53691–53694
Export Trade Certificates of Review:
Northwest Fruit Exporters, 53694–53695
Requests for Nominations:
Manufacturing Council, 53695–53696

International Trade Commission
NOTICES
Investigations; Determinations, Modifications, and Rulings, etc.:
Certain Windshield Wipers and Components Thereof, 53784–53785
Rice—Global Competitiveness of the U.S. Industry; Hearing Cancellation, 53785
Tellabs, Inc.; Certain Non-Volatile Memory Devices and Products Containing Same, 53784

Justice Department
NOTICES
Consent Decrees under the Clean Air Act, 53785

Labor Department
See Employment and Training Administration
See Labor Statistics Bureau
NOTICES
Meetings:
Advisory Committee on Veterans' Employment, Training and Employer Outreach, 53785–53786

Labor Statistics Bureau
NOTICES
Local Area Unemployment Statistics Program, 53787–53791

National Aeronautics and Space Administration
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions, 53708–53709

National Archives and Records Administration
NOTICES
Meetings:
Advisory Committee on the Presidential Library-Foundation Partnerships, 53791

National Institutes of Health
NOTICES
Environmental Impact Statements; Availability, etc.:
Assure/Expand Chilled Water Capacity Project; Corrections, 53713
Meetings:
Center for Scientific Review, 53713–53717
National Cancer Institute, 53716
National Institute of Dental and Craniofacial Research, 53714

National Oceanic and Atmospheric Administration
RULES
Endangered and Threatened Wildlife and Plants:
Final Listing Determinations on Proposal to List 66 Reef-building Coral Species and to Reclassify Elkhorn and Staghorn Corals, 53852–54123
International Fisheries; Pacific Tuna Fisheries:
2014 Commercial Fishing for Pacific Bluefin Tuna Closed in the Eastern Pacific Ocean, 53631–53632
NOTICES
Meetings:
U.S. Integrated Ocean Observing System Advisory Committee, 53696–53697

National Park Service
NOTICES
Inventory Completions:
Arizona State Museum, University of Arizona, Tucson AZ, 53761–53767
Arizona State Museum, University of Arizona, Tucson, AZ, 53737–53738, 53751–53752, 53754–53759, 53771–53773
California State University, Long Beach, and California State University, Sacramento, CA, 53760–53761
History Colorado, Formerly Colorado Historical Society, Denver, CO, 53767–53768
Native American Human Remains and Associated Funerary Objects; National Park Service, Rocky Mountain National Park, Estes Park, CO; Corrections, 53750–53751
State Historical Society of Wisconsin, Madison, WI, 53729–53744, 53748–53749, 53753–53754, 53759–53760, 53768–53769
Stephen F. Austin State University, Nacogdoches, TX, 53733–53734
University of Massachusetts, Department of Anthropology, Amherst, MA; Correction, 53770–53771
University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, PA, 53746–53747
University of Wisconsin–Madison, Department of Anthropology, Madison, WI, and the State Historical Society of Wisconsin, Madison, WI, 53744–53746

U.S. Department of Defense, Army, Fort Sill National Historic Landmark and Museum, Fort Sill, OK, 53749–53750, 53769–53770
U.S. Department of Defense, Army, National Museum of Health and Medicine, Silver Spring, MD, 53730–53731, 53747–53748
Meetings:
Cape Cod National Seashore Advisory Commission, 53773
Gateway National Recreation Area Fort Hancock 21st Century Advisory Committee, 53773–53774
Repatriations of Cultural Items:
Arizona State Museum, University of Arizona, Tucson, AZ, 53774–53779
California State University, Long Beach, and California State University, Sacramento, CA, 53779–53780
Department of Defense, Army, Fort Sill National Historic Landmark and Museum, Fort Sill, OK, 53777–53778, 53782
Stephen F. Austin State University, Nacogdoches, TX, 53781–53782
Sole Source Concession Contract for Gateway National Recreation Area, NY, 53782–53783

National Science Foundation
NOTICES
Antarctic Conservation Act Permit Applications, 53791–53792

Personnel Management Office
RULES
Flag Recognition Benefit for Fallen Federal Civilian Employees, 53601–53603

Presidential Documents
PROCLAMATIONS
Special Observances:
National Grandparents Day (Proc. 9163), 54183–54186
ADMINISTRATIVE ORDERS
Trading With the Enemy Act; Continuation of Certain Authorities (Presidential Determination)
No. 2014–14 of September 5, 2014, 54187

Securities and Exchange Commission
NOTICES
Self-Regulatory Organizations; Proposed Rule Changes:
BOX Options Exchange LLC, 53803–53805
Chicago Board Options Exchange, Inc., 53794–53802
International Securities Exchange, LLC, 53813–53816
Miami International Securities Exchange LLC, 53792–53794, 53808–53811
NASDAQ OMX BX, Inc., 53805–53808
NASDAQ Stock Market LLC, 53808, 53811–53813

Small Business Administration
PROPOSED RULES
Small Business Size Standards for Manufacturing, 54146–54181
Small Business Size Standards:
Industries with Employee Based Size Standards Not Part of Manufacturing, Wholesale Trade, or Retail Trade, 53646–53667

State Department
NOTICES
Commercial Export Licenses:
Bureau of Political-Military Affairs, Directorate of Defense Trade Controls, 53816–53823
Meetings:
Cultural Property Advisory Committee, 53823–53824
Proposed Extension of Memorandum of Understanding on Archaeological Material from El Salvador, 53824

Surface Mining Reclamation and Enforcement Office
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals, 53783

Transportation Department
See Federal Aviation Administration
See Federal Highway Administration
See Federal Transit Administration

Treasury Department
See Comptroller of the Currency

U.S. Citizenship and Immigration Services
NOTICES
Agency Information Collection Activities; Proposals, Submissions, and Approvals:
Application for Waiver of the Foreign Residence Requirement of Section 212(e) of the Immigration and Nationality Act, 53720
Petition for U Nonimmigrant Status, 53721

Separate Parts In This Issue

Part II
Commerce Department, National Oceanic and Atmospheric Administration, 53852–54123

Part III
General Services Administration, 54126–54144

Part IV
Small Business Administration, 54146–54181

Part V
Presidential Documents, 54183–54187

Reader Aids

Consult the Reader Aids section at the end of this page for phone numbers, online resources, finding aids, reminders, and notice of recently enacted public laws.

To subscribe to the Federal Register Table of Contents LISTSERV electronic mailing list, go to http://listserv.access.gpo.gov and select Online mailing list archives, FEDREGTOC-L, Join or leave the list (or change settings); then follow the instructions.

CFR PARTS AFFECTED IN THIS ISSUE

A cumulative list of the parts affected this month can be found in the Reader Aids section at the end of this issue.

3 CFR

Proclamations:

9163 54181

Administrative Orders:

Presidential Determinations:

No. 2014–14 of September 5, 2014 54183

5 CFR

550 53601

1653 53603

7 CFR

1220 53605

Proposed Rules:

27 53633

28 53633

29 53633

51 53633

52 53633

54 53633

56 53633

58 53633

62 53633

70 53633

75 53633

91 53633

9 CFR

77 53606

13 CFR

Proposed Rules:

121 (2 documents) 53646, 54146

14 CFR

Proposed Rules:

71 (2 documents) 53667, 53669

21 CFR

866 53608

Proposed Rules:

610 53670

680 53670

23 CFR

Proposed Rules:

450 53673

771 53673

24 CFR

3285 53609

3286 53609

33 CFR

Proposed Rules:

100 53671

44 CFR

64 53618

46 CFR

2 53621

24 53621

25 53621

30 53621

70 53621

90 53621

188 53621

48 CFR

Proposed Rules:

515 54126

538 54126

552 54126

49 CFR

Proposed Rules:

613 53673

622 53673

50 CFR

223 53852

300 53631

Rules and Regulations

Federal Register

Vol. 79, No. 175

Wednesday, September 10, 2014

This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

The Code of Federal Regulations is sold by the Superintendent of Documents. Prices of new books are listed in the first FEDERAL REGISTER issue of each week.

OFFICE OF PERSONNEL MANAGEMENT

5 CFR Part 550

RIN 3206–AM58

Flag Recognition Benefit for Fallen Federal Civilian Employees

AGENCY: Office of Personnel Management.

ACTION: Final rule.

SUMMARY: The U.S. Office of Personnel Management (OPM) is issuing final regulations to implement the Civilian Service Recognition Act of 2011. The final regulations will assist agencies in administering a United States flag recognition benefit for fallen Federal civilian employees, and describe the eligibility requirements and procedures to request a flag.

DATES: *Effective* October 10, 2014.

FOR FURTHER INFORMATION CONTACT: Nikki Johnson at (202) 606–2720, by fax at (202) 606–4264, or by email at *nikki.johnson@opm.gov.*

SUPPLEMENTARY INFORMATION: The U.S. Office of Personnel Management, following coordination with the U.S. Department of Defense and the U.S. Department of Homeland Security, issued proposed regulations and requested comments on June 17, 2013, (78 FR 36312) to implement the Civilian Service Recognition Act of 2011 (Pub. L. 112–73, December 20, 2011), hereafter referred to as ''the Act.'' For those civilian employees who die under certain circumstances in the course of serving their country, the Act authorizes agency heads to give United States flags to beneficiaries as a way to formally express sympathy and gratitude on behalf of the Nation.

OPM received comments from two Federal agencies, a private association for career federal executives (''the Association''), and two individuals. We reviewed the public comments, considered them, and decided upon any revisions we concluded were appropriate in light of that consideration. We have summarized the comments below, and also indicate how we disposed of them in the final regulations.

Background

The Act authorizes, and these regulations provide policies for, recognizing certain Federal civilian employees who die of injuries incurred in connection with their employment for their duty and sacrifice. Prior to this legislation, a few agencies had separate, limited authority to confer such recognition. Under the Act, Executive agencies, the United States Postal Service, and the Postal Regulatory Commission may furnish flags to the beneficiaries of employees who died of injuries incurred in connection with their employment as a result of criminal acts, acts of terrorism, natural disasters, or other circumstances as determined by the President.

OPM is amending part 550 of title 5, Code of Federal Regulations, by adding a new subpart (subpart O) titled ''Flag Recognition Benefit for Fallen Federal Civilian Employees'' that establishes a comprehensive, Governmentwide approach to honor Federal civilian employees who die of certain injuries incurred in connection with their employment. These regulations also provide agencies flexibility to develop additional procedures when honoring these employees.

General

We received a comment from a Federal agency recommending OPM revise § 550.1501(a) to indicate that the employee's injuries must be incurred in connection with his or her employment with the Federal Government, as stated in the statute. We agree with the agency's suggested change and have revised the paragraph to mirror the statutory language.

Eligibility

We received four comments (three from the Association and one from an individual) regarding eligibility for a flag. Both the Association and the individual observed that the phrase ''other circumstances'' was vague and that clarification was needed to define what constitutes ''other circumstances.'' The Association suggested that there be additional guidance to assist agencies to determine whether a cause of death that does not fall neatly into a stated category should be granted. The individual stated that OPM should revise § 550.1504(iv) to provide that the President may delegate this determination.

OPM expects that most deaths warranting flag recognition will fall into the categories specified in law (i.e., a criminal act, an act of terrorism, or a natural disaster). In any event, at this time, the authority to determine which other circumstances would warrant such recognition is reserved to the President. OPM cannot confer authorities upon the President, but there is nothing in the Act that precludes the President from delegating this authority in the future if he wishes to do so.

In addition, one comment stated that OPM should track deaths that did not fall into one of the original categories. OPM will not track the ''other circumstance'' cause of death requests as we anticipate they will occur rarely and, therefore, we do not see the need to establish an additional administrative process.

Order of Precedence

We received four comments (two from individuals, one from the Association, and one from an agency) regarding order of precedence when granting a flag. Three of the comments focused on including same-sex marriage, domestic partnership, or civil unions in the order of precedence.

The Act already provides that widows or widowers may be awarded a flag. On June 26, 2013, the Supreme Court ruled that Section 3 of the Defense of Marriage Act (DOMA) is unconstitutional. As a result of this decision, there would be no basis for construing ''widow'' or ''widower'' as excluding surviving spouses of same-sex marriages. The surviving spouse of a same-sex marriage would be a widow or widower, and this category is already included in the order of precedence.

Surviving members of a domestic partnership or civil union could also qualify to be recipients of a flag, within the order of precedence, but only within the category of those having a close family affiliation. The ''close family affiliation'' category encompasses any non-marital domestic partner, whether same-sex or different-sex, irrespective of

whether the individual was in a state-sanctioned legal relationship, such as a civil union or domestic partnership, with the deceased employee. Although requests from surviving members of a domestic partnership or civil union would not receive the same level of precedence as surviving spouses of same-sex marriages, that result is a function of the statutory language itself. The statute specifically identified ''spouses,'' but not survivors of domestic partnerships or civil unions as among the individuals who would be eligible for such a benefit by virtue of the statute itself. The statute provided OPM with the means to determine what other sorts of relationships might justify the award of a flag, but only for the situation where no request has been received from a spouse, child, sibling, or parent of the deceased employee.

The Association's comment focused on defining ''close family affiliation'' and providing examples. The commenter suggested that the term is unclear. OPM believes the established order of precedence, which is modeled after other similar listings in regulation, is clear as listed. The term ''close family affiliation'' conveys a generally understood type of relationship and the regulation leaves its application to agency discretion on a case-by-case basis.

Beneficiary Responsibilities

We received two comments on beneficiary responsibilities (one from an individual and one from the Association). Both commenters noted a concern that the burden of proving eligibility would fall disproportionately on the next of kin and argued that a formal written request with supporting documentation should not be necessary because the agency will already be aware of the circumstances surrounding the employee's death, and therefore his or her eligibility for the flag benefit. The Association also recommended the agency notify the beneficiary of the flag benefit to ease the burden of a grieving beneficiary and make the distribution of a flag as smooth and quick as possible. We agree that in most cases an agency will already be aware of the circumstances of an employee's death in these types of situations and generally will not need to require proof of the employee's eligibility. Therefore, we have revised § 550.1506 of the regulations to focus on having the agency assist a grieving beneficiary in requesting a flag in a timely manner by making the necessary determinations.

Agency Responsibilities

We received two comments from one agency on agency responsibilities. One comment recommends that OPM revise § 550.1507(a) to remove the requirement for an agency to include in its procedures reaching out to survivors of known eligible employees to provide information and offer assistance on obtaining the flag. We have considered this recommendation and have revised this provision to make it clear that an agency is required to adopt such procedures only if it determines it wishes to award a flag pursuant to the Act. When an agency has made such a determination, it must reach out to survivors of known eligible employees in order to ease any burden on the beneficiaries of obtaining a flag. We encourage each agency to make a decision in advance of receiving a first request under the Act whether the agency will want to furnish a flag in an appropriate case. If the answer is in the affirmative, the agency would be well-advised to adopt these procedures in advance, so that it will be in a position to assist a potential beneficiary expeditiously if and when a potentially appropriate case arises.

The agency also recommends that OPM revise § 550.1507(b) to provide agencies with the flexibility to establish their own process for notifying employees of the flag benefit. We concur that agencies should have flexibility in notifying employees and have removed the example, ''usually as part of the agency's regular benefits information sharing,'' that was perceived to limit this flexibility. In order to provide consistency Governmentwide, we have maintained the requirement that the notification should occur annually.

Miscellaneous Issues

We have made additional revisions to the text of § 550.1501 General, § 550.1505 Order of precedence, and § 550.1506 Beneficiary receipt of a flag in order to achieve greater technical clarity. The substance of these provisions has not been changed.

E.O. 12866, Regulatory Review

This rule has been reviewed by the U.S. Office of Management and Budget in accordance with E.O. 12866.

Regulatory Flexibility Act

I certify that these regulations would not have a significant economic impact on a substantial number of small entities because they would apply only to Federal agencies and employees.

List of Subjects in 5 CFR Part 550

Administrative practice and procedure, Claims, Government employees, Wages.

U.S. Office of Personnel Management.

Katherine Archuleta,

Director.

Accordingly, OPM is amending part 550 of title 5, Code of Federal Regulations, by adding a new subpart O to read as follows:

PART 550—PAY ADMINISTRATION (GENERAL)

Subpart O—Flag Recognition Benefit for Fallen Federal Civilian Employees

Sec.
550.1501 General.
550.1502 Coverage.
550.1503 Definitions.
550.1504 Eligibility.
550.1505 Order of precedence.
550.1506 Beneficiary receipt of a flag.
550.1507 Agency responsibilities.

Authority: 5 U.S.C. 5570 note; also issued under Sec. 2 of Pub. L. 112–73, 125 Stat.784–785.

Subpart O—Flag Recognition Benefit for Fallen Federal Civilian Employees

§ 550.1501 General.

(a) *Statutory authority.* This subpart implements the Civilian Service Recognition Act of 2011 (Public Law 112–73; December 20, 2011), reprinted as a note to 5 U.S.C.A. 5570, which authorizes agencies to give a flag of the United States to a beneficiary of a Federal civilian employee who dies of injuries incurred in connection with his or her employment with the Federal Government, under specific circumstances.

(b) *Eligibility.* Agencies may furnish a flag to the beneficiary (as defined in § 550.1503) of an eligible employee (as specified in § 550.1504) who died on or after December 20, 2011.

§ 550.1502 Coverage.

This subpart applies to—

(a) Executive agencies as defined in section 105 of title 5, United States Code, the United States Postal Service, and the Postal Regulatory Commission; and

(b) Employees as defined in section 2105 of title 5, United States Code; an officer or employee of the United States Postal Service; and an officer or employee of the Postal Regulatory Commission.

§ 550.1503 Definitions.

In this subpart—

Agency means an Executive agency as defined in 5 U.S.C. 105, the United

States Postal Service, or the Postal Regulatory Commission.

Authorized agency official means the head of an agency or an official who is authorized to act for the head of the agency in the matter concerned.

Beneficiary means the eligible person who may request the flag following the order of precedence specified in § 550.1505.

Employee means an employee as defined in section 2105 of title 5, United States Code; an officer or employee of the United States Postal Service; and an officer or employee of the Postal Regulatory Commission.

Flag means a standard United States flag that is at least 3 feet by 5 feet.

§ 550.1504 Eligibility.

(a) An authorized agency official may, upon the request of a beneficiary, furnish one United States flag for an individual who—

(1) Was an employee of the agency at the time of death; and

(2) Died of injuries incurred in connection with such individual's employment with the Federal Government suffered as a result of—

(i) A criminal act;

(ii) An act of terrorism;

(iii) A natural disaster; or

(iv) Other circumstances, as determined by the President.

(b) An authorized agency official may not furnish a flag when the death is the result of—

(1) Unlawful or negligent action of the employee;

(2) Willful misconduct of the employee; or

(3) Activities unrelated to the employee's status as a Federal employee.

(c) The decision whether to furnish a flag to the beneficiary of an eligible employee is at the discretion of the agency. When an authorized agency official determines the agency will furnish a flag for a deceased eligible employee, the official must follow the order of precedence specified in § 550.1505.

§ 550.1505 Order of precedence.

If the authorized agency official determines the agency will furnish a flag, it must be issued to one beneficiary pursuant to the following order of precedence—

(a) The widow or widower;

(b) If none, to a child (including step, foster, or adopted child), according to age (i.e., oldest to youngest);

(c) If none, to a parent (including step, foster, or adoptive parent);

(d) If none, to a sibling (including step, half, or adopted sibling), according to age; (i.e., oldest to youngest);

If none, to any individual related by blood or close family affiliation.

§ 550.1506 Beneficiary receipt of a flag.

One eligible beneficiary, following the order of precedence in § 550.1505, may be provided a flag by the agency once the agency has—

(a) Documented the date and nature of death of the employee and certified that it conforms to the eligibility criteria in § 550.1504;

(b) Received a request from a beneficiary; and

(c) Established the beneficiary's relationship to the deceased employee and determined whether the beneficiary may receive the flag, consistent with the order of precedence under 550.1505.

§ 550.1507 Agency responsibilities.

To efficiently and effectively implement the provisions of the law and these regulations, an agency that wishes to furnish a flag pursuant to this part must —

(a) Establish procedures for procuring and furnishing a flag, including reaching out to survivors of known eligible employees to provide information and offer assistance on obtaining a flag;

(b) Notify its employees of the flag benefit annually; and

(c) Disclose information necessary to prove that a deceased individual is an eligible employee as described in § 550.1504 to the extent that such information is not classified and to the extent that such disclosure does not endanger the national security of the United States.

[FR Doc. 2014–21587 Filed 9–9–14; 8:45 am]

BILLING CODE 6325–39–P

FEDERAL RETIREMENT THRIFT INVESTMENT BOARD

5 CFR Parts 1653

Legal Process for the Enforcement of a Tax Levy or Criminal Restitution Order Against a Participant Account

AGENCY: Federal Retirement Thrift Investment Board.

ACTION: Final rule.

SUMMARY: The Federal Retirement Thrift Investment Board (Agency) proposes to amend its regulations to explain the Board's procedures for responding to tax levies and criminal restitution orders that comply with the statutory requirements.

DATES: This rule is effective on September 10, 2014.

FOR FURTHER INFORMATION CONTACT: Erin Graham at 202–942–1605.

SUPPLEMENTARY INFORMATION: The Agency administers the Thrift Savings Plan (TSP), which was established by the Federal Employees' Retirement System Act of 1986 (FERSA), Public Law 99–335, 100 Stat. 514. The TSP provisions of FERSA are codified, as amended, largely at 5 U.S.C. 8351 and 8401–79. The TSP is a tax-deferred retirement savings plan for Federal civilian employees and members of the uniformed services. The TSP is similar to cash or deferred arrangements established for private-sector employees under section 401(k) of the Internal Revenue Code (26 U.S.C. 401(k)).

Legal Process for the Enforcement of Internal Revenue Service Levies or Restitution Pursuant to the Mandatory Victims Restitution Act

The TSP's governing statute includes an anti-alienation provision that protects funds from execution, levy, attachment, garnishment, or other legal process, except for certain enumerated exceptions that, until recently, did not include federal tax levies. On January 14, 2013 the President signed into law P.L. No. 112–267, 126 Stat. 2440 (2013), entitled ''To amend title 5, United States Code, to make clear that accounts in the Thrift Savings Fund are subject to certain Federal tax levies.'' The legislation amends 5 U.S.C. 8437(e)(3) to state, ''Moneys due or payable from the Thrift Savings Fund to any individual and, in the case of an individual who is an employee or Member (or former employee or Member), the balance in the account of the employee or Member (or former employee or Member) . . . shall be subject to a Federal tax levy under section 6331 of the Internal Revenue Code of 1986.'' In enacting the amendment to 5 U.S.C. 8437, Congress placed IRS levies in a small company of exceptions which include child support obligations, alimony obligations, and restitution pursuant to the Mandatory Victims Restitution Act (MVRA). Congress has deemed these instances as the only permissible reasons for funds to be diverted from a participant's account. The Agency has previously promulgated regulations governing the payments from accounts in each of these situations. The regulations for levies and criminal restitution will be similar to those previously issued.

On June 26, 2014, the Agency published a proposal to amend its regulations to explain the Agency's procedures for responding to legal process for the enforcement of participant's levy or criminal restitution order. The Agency received one comment to the proposed regulation, which expressed opposition to allowing

the IRS to levy Federal Thrift Savings Plan accounts. However, the Thrift Savings Plan is required by law to honor IRS levies and criminal restitution orders, and the regulations only explain the payout process. Therefore, the Agency is publishing the proposed rule as final without substantive modification.

Regulatory Flexibility Act

I certify that this regulation will not have a significant economic impact on a substantial number of small entities. This regulation will affect Federal employees, members of the uniformed services who participate in the Thrift Savings Plan, and their beneficiaries. The TSP is a Federal defined contribution retirement savings plan created FERSA and is administered by the Agency.

Paperwork Reduction Act

I certify that these regulations do not require additional reporting under the Paperwork Reduction Act.

Unfunded Mandates Reform Act of 1995

Pursuant to the Unfunded Mandates Reform Act of 1995, 2 U.S.C. §§ 602, 632, 653, 1501–1571, the effects of this regulation on state, local, and tribal governments and the private sector have been assessed. This regulation will not compel the expenditure in any one year of $100 million or more by state, local, and tribal governments, in the aggregate, or by the private sector. Therefore, a statement under § 1532 is not required.

Submission to Congress and the General Accounting Office

Pursuant to 5 U.S.C. 810(a)(1)(A), the Agency submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States before publication of this rule in the **Federal Register**. This rule is not a major rule as defined at 5 U.S.C. 804(2).

List of Subjects in 5 CFR Part 1653

Taxes, Claims, Government employees, Pensions, Retirement.

Gregory T. Long,

Executive Director, Federal Retirement Thrift Investment Board.

For the reasons stated in the preamble, the Agency amends 5 CFR chapter VI as follows:

PART 1653—COURT ORDERS AND LEGAL PROCESSES AFFECTING THRIFT SAVINGS PLAN ACCOUNT

■ 1. The authority citation for part 1653 continues to read as follows:

Authority: 5 U.S.C. 8432d, 8435, 8436(b), 8437(e), 8439(a)(3), 8467, 8474(b)(5), and 8474(c)(1).

■ 2. Subpart D is added to read as follows:

Subpart D—Process for the Enforcement of a Participant's Legal Obligation To Pay a Federal Tax Levy or Criminal Restitution Order

Sec.
1653.31 Definitions.
1653.32 Qualifying Federal tax levy.
1653.33 Qualifying Criminal Restitution Order.
1653.34 Processing Federal tax levies and Criminal Restitution Orders.
1653.35 Calculating entitlement.
1653.36 Payment.

Subpart D—Process for the Enforcement of a Participant's Legal Obligation To Pay a Federal Tax Levy or Criminal Restitution Order

§ 1653.31 Definitions.

(a) Definitions generally applicable to the Thrift Savings Plan are set forth at 5 CFR 1690.1.

(b) As used in this subpart:

Criminal Restitution Order means a complete copy of the judgment in a criminal case issued by a federal court ordering restitution for a crime described in 18 U.S.C. 3663A.

Tax levy means a signed form 668–A served by the IRS for the satisfaction of a federal tax debt.

§ 1653.32 Qualifying Federal tax levy.

(a) The TSP will only honor the terms of a tax levy that is qualifying under paragraph (b) of this section.

(b) A tax levy must meet each of the following requirements to be considered qualifying:

(1) The Internal Revenue Service issued the levy.

(2) The levy includes a signature certifying that it attaches to a retirement plan.

(3) The levy requires the TSP to pay a stated dollar amount from a TSP participant's account.

(4) The levy is dated no earlier than thirty (30) days before receipt.

(5) The levy is issued in the name of the participant only.

(6) The levy expressly refers to the ''Thrift Savings Plan'' or describes the TSP in such a way that it cannot be confused with other Federal Government retirement benefits or non-Federal retirement benefits.

(c) The following levies will not be considered qualifying:

(1) A levy relating to a TSP account with a zero dollar account balance;

(2) A levy relating to a TSP account that contains only nonvested money, unless the money will become vested within 30 days of the date the TSP receives the order if the participant were to remain in Government service;

(3) A levy requiring the TSP to make a payment at a specified date in the future;

(4) A levy that does not contain a signature certifying that it applies to retirement plans;

(5) A levy requiring a series of payments;

(6) A levy that designates the specific TSP Fund, source of contributions, or balance from which the payment or portions of the payment shall be made.

§ 1653.33 Qualifying Criminal Restitution Order.

(a) The TSP will only honor the terms of a criminal restitution order that is qualifying under paragraph (b) of this section.

(b) A criminal restitution order must meet each of the following requirements to be considered qualifying:

(1) The restitution must be ordered in the sentencing of the participant as required by 18 U.S.C. 3663A and 18 U.S.C. 3664.

(2) The restitution order and accompanying documentation must require the TSP to:

(i) Pay a stated dollar amount from a participant's TSP account; or

(ii) Freeze the participant's TSP account in anticipation of an order to pay from the account.

(c) The following orders will not be considered qualifying:

(1) A restitution order relating to a TSP account with a zero dollar account balance;

(2) A restitution order relating to a TSP account that contains only nonvested money, unless the money will become vested within 30 days of the date the TSP receives the order if the participant were to remain in Government service;

(3) A restitution order requiring the TSP to make a payment in the future;

(4) A forfeiture order related to a monetary garnishment of funds;

(5) A restitution order requiring a series of payments;

(6) A restitution order that designates the specific TSP Fund, source of contributions, or balance from which the payment or portions of the payment shall be made.

§ 1653.34 Processing tax levies and Criminal Restitution Orders.

(a) The payment of tax levies and criminal restitution orders from the TSP is governed solely by the Federal Employees' Retirement Systems Act, 5 U.S.C. chapter 84, and by the terms of this subpart. Although the TSP will honor tax levies or criminal restitution orders properly issued, those entities have no jurisdiction over the TSP and the TSP cannot be made a party to the underlying proceedings.

(b) The TSP will review a tax levy or criminal restitution order to determine whether it is enforceable against the TSP only after it has received a complete copy of the document. Receipt by an employing agency or any other agency of the Government does not constitute receipt by the TSP. Tax levies and criminal restitution orders should be submitted to the TSP record keeper at the current address as provided at *http://www.tsp.gov.* Receipt by the TSP record keeper is considered receipt by the TSP. To be complete, a tax levy or criminal restitution order must meet all the requirements of § 1653.32 or § 1653.33; it must also provide (or be accompanied by a document that provides):

(1) The participant's TSP account number or Social Security number (SSN); and

(2) The name and mailing address of the payee.

(c) As soon as practicable after the TSP receives a document that purports to be a qualifying tax levy or criminal restitution order, the participant's account will be frozen. After the participant's account is frozen, no withdrawal or loan disbursements will be allowed until the account is unfrozen. All other account activity will be permitted, including contributions, loan repayments, adjustments, contribution allocations and interfund transfers. Once a disbursement from the account is made in accordance with the restitution order or levy, the hold will be removed from the participant's account.

(d) As soon as practicable after receipt of a complete copy of a tax levy or criminal restitution order, the TSP will review it to determine whether it is qualifying as described in § 1653.32 or § 1653.33. The TSP will mail a decision letter to all parties containing the following information:

(1) A determination regarding whether the restitution order or levy is qualifying;

(2) A statement of the applicable statutes and regulations;

(3) An explanation of the effect the restitution order or levy has on the participant's TSP account; and

(4) If the qualifying restitution order or levy requires payment, the letter will provide:

(i) An explanation of how the payment will be calculated and an estimated amount of payment;

(ii) The anticipated date of payment.

(e) The TSP decision letter is final. There is no administrative appeal from the TSP decision.

§ 1653.35 Calculating entitlement.

A levy or criminal restitution order can only require the payment of a specified dollar amount from the TSP. If the restitution order or levy awards a specific dollar amount, the payee's entitlement will be the lesser of:

(a) The dollar amount stated in the levy or restitution order; or

(b) The vested account balance on the date of disbursement, minus any outstanding loan balance.

§ 1653.36 Payment.

(a) Payment pursuant to a qualifying levy or criminal restitution order will be made 30 days after the TSP decision letter.

(b) In no case will payment exceed the participant's calculated entitlement.

(c) The entire amount of a restitution order or levy entitlement must be disbursed at one time. A series of payments will not be made. A payment pursuant to a restitution order or levy extinguishes all rights to any further payment under that order or levy, even if the entire amount of the entitlement cannot be paid. Any further award must be contained in a separate restitution order or levy.

(d) If a participant has funds in more than one type of account, payment will be made from each account in the following order, until the amount of the levy or restitution order is reached:

(1) Civilian account;

(2) Uniformed services account;

(3) Beneficiary participant account.

(e) Payment will be made pro rata from the participant's traditional and Roth balances. The distribution from the traditional balance will be further pro rated between the tax-deferred balance and tax-exempt balance. The payment from the Roth balance will be further pro rated between contributions in the Roth balance and earnings in the Roth balance. In addition, all payments will be distributed pro rata from all TSP Funds in which the participant's account is invested. All pro rated amounts will be based on the balances in each fund or source of contributions on the day the disbursement is made.

(f) The payment is taxable to the participant and is subject to Federal income tax withholding. The tax withholding will be taken from the payee's entitlement and the gross amount of the payment (i.e., the net payment distributed to the payee plus the amount withheld from the payment for taxes) will be reported to the IRS as income to the participant.

(g) A properly paid levy or restitution order cannot be returned to the TSP.

[FR Doc. 2014–21636 Filed 9–9–14; 8:45 am]

BILLING CODE 6760–01–P

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Part 1220

[Docket No. AMS–LPS–13–0066]

Soybean Promotion, Research, and Consumer Information Program: Amendment of Procedures and Notification of Request for Referendum

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Affirmation of interim rule as a final rule.

SUMMARY: The Agricultural Marketing Service (AMS) is affirming without changes its interim rule (79 FR 12037) to amend the procedures to Request a Referendum at 7 CFR Part 1220 by removing the specific number of soybean producers eligible to request a referendum under the Soybean Promotion, Research, and Consumer Information program, commonly known as the Soybean Checkoff Program. The number of soybean producers will be replaced with language that allows the Secretary of Agriculture (Secretary) to update this number based on information provided by the U.S. Department of Agriculture (USDA). Additionally, this rule removes specific USDA and Farm Service Agency (FSA) Web site and office addresses and replaces them with more flexible language. These changes will enable AMS to announce future Requests for Referendum without engaging in additional informal rulemaking.

DATES: *Effective Date:* September 11, 2014.

FOR FURTHER INFORMATION CONTACT: James R. Brow, Agricultural Marketing Specialist, Research and Promotion Division, Livestock, Poultry, and Seed Program, AMS, USDA, Room 2010–S, STOP 0251, 1400 Independence Avenue SW., Washington, DC, 20250–0251; Telephone 202/720–0633; Fax 202/720–

1125; email to *James.Brow@ ams.usda.gov.*

SUPPLEMENTARY INFORMATION:

This action affirms the interim rule concerning Executive Orders 12866, 12988, and 13563; the Regulatory Flexibility Act (5 U.S.C. 601–612; the Paperwork Reduction Act (44 U.S.C. Chapter 35); and the E-Gov Act (44 U.S.C. 101). Further, for this action, the Office of Management and Budget has determined that this action is not significant under Executive Order 12866 and therefore has not been reviewed by OMB.

Background Information

The Soybean Promotion, Research, and Consumer Information Act (Act) (7 U.S.C. 6301–6311) provides for the establishment of a coordinated program of promotion and research designed to strengthen the soybean industry's position in the marketplace, and to maintain and expand domestic and foreign markets and uses for soybeans and soybean products. The program is financed by an assessment of 0.5 of 1 percent of the net market price of soybeans sold by producers. The final rule establishing a Soybean Promotion, Research, and Consumer Information program was published in the July 9, 1991, issue of the **Federal Register** (56 FR 31043), and assessments began on September 1, 1991.

The Act specifies that the Secretary shall, five years after the conduct of the initial referendum and every five years thereafter, provide soybean producers an opportunity to request a referendum on the Soybean Promotion, Research, and Consumer Information Order (Order). Additionally, the Act specifies that these subsequent polls require that at least 10 percent (not in excess of one-fifth in any one State) of all producers must request a referendum in order to trigger the conduct of a referendum. If a referendum is requested, it will be held within one year of that determination.

The next Request for Referendum will be conducted May 2019, at FSA county offices.

Changes to the Regulations

In the interim rule, AMS amended § 1220.616 to remove the specific number of soybean producers from the regulatory language. Data provided by FSA has been used to amend the number of soybean producers prior to any Request for Referendum. The data have been sorted in such a manner as to include all producers who were engaged in the production of soybeans in at least one of the two years prior to the Request for Referendum, excluding counting a producer more than once if that producer engaged in production during both years. Using the last two crop-year acreage reports for which complete data is available ensures that all eligible producers are counted, as some producers use soybeans in rotation with other crops and do not plant soybeans every year. This methodology is consistent with that used in previous requests for referendum and will continue to be used by USDA to update the number of eligible soybean producers.

For the 2014 Request for Referendum previously conducted and subsequent requests for referendum, the data provided by FSA allows the Secretary to update this number.

In addition to the changes relating to the number of eligible soybean producers, AMS amended §§ 1220.619, 1220.622 and 1220.628 with more flexible language.

Comments

On March 4, 2014, USDA published in the **Federal Register** (79 FR 12037) an interim rule with a request for comments to be received by April 3, 2014. USDA received no comments.

List of Subjects in 7 CFR Part 1220

Administrative practice and procedure, Advertising, Agricultural research, Marketing agreements, Reporting and recordkeeping requirements, Soybeans and soybean products.

For the reasons set forth in the preamble, 7 CFR Part 1220 is amended as follows:

PART 1220—SOYBEAN PROMOTION, RESEARCH, AND CONSUMER INFORMATION

■ Accordingly, the interim rule that amended 7 CFR Part 1220, which was published on March 4, 2014 at 79 FR 12037, is adopted as a final rule without change.

Dated: September 4, 2014.

Rex A. Barnes,

Associate Administrator.

[FR Doc. 2014–21512 Filed 9–9–14; 8:45 am]

BILLING CODE 3410–02–P

DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

9 CFR Part 77

[Docket No. APHIS–2014–0058]

Bovine Tuberculosis Status of Michigan; Advance Counties From Modified Accredited Advanced to Accredited-Free

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Interim rule and request for comments.

SUMMARY: We are amending the bovine tuberculosis regulations to advance the status of Antrim, Charlevoix, Cheboygan, Crawford, Emmet, Otsego, and Presque Isle Counties in Michigan from modified accredited advanced to accredited-free. We have determined that these counties meet the criteria for accredited-free status. This action relieves certain restrictions on the interstate movement of cattle and bison from these areas of Michigan.

DATES: This interim rule is effective on September 10, 2014. We will consider all comments that we receive on or before November 10, 2014.

ADDRESSES: You may submit comments by either of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov/ #!docketDetail;D=APHIS-2014-0058.*
- *Postal Mail/Commercial Delivery:* Send your comment to Docket No. APHIS–2014–0058, Regulatory Analysis and Development, PPD, APHIS, Station 3A–03.8, 4700 River Road Unit 118, Riverdale, MD 20737–1238.

Supporting documents and any comments we receive on this docket may be viewed at *http:// www.regulations.gov/ #!docketDetail;D=APHIS-2014-0058* or in our reading room, which is located in room 1141 of the USDA South Building, 14th Street and Independence Avenue SW., Washington, DC. Normal reading room hours are 8 a.m. to 4:30 p.m., Monday through Friday, except holidays. To be sure someone is there to help you, please call (202) 799–7039 before coming.

FOR FURTHER INFORMATION CONTACT: Dr. C. William Hench, Senior Staff Veterinarian, Surveillance, Preparedness and Response Services, Cattle Health Center, VS, APHIS, 2150 Centre Avenue, Building B, MSC 3–E–20, Fort Collins, CO 80526–8117; (970) 494–7378.

SUPPLEMENTARY INFORMATION:

Background

Bovine tuberculosis is a contagious and infectious granulomatous disease caused by the bacterium *Mycobacterium bovis.* Although commonly defined as a chronic debilitating disease, bovine tuberculosis can occasionally assume an acute, rapidly progressive course. While any body tissue can be affected, lesions are most frequently observed in the lymph nodes, lungs, intestines, liver, spleen, pleura, and peritoneum. Although cattle are considered to be the true hosts of *M. bovis,* the disease has been reported in several other species of livestock, most notably bison and captive cervids. There have also been instances of infection in other domestic and nondomestic animals, as well as in humans. Through the National Cooperative State/Federal Bovine Tuberculosis Eradication Program, the Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture (USDA) works cooperatively with the Nation's livestock industry and State animal health agencies to eradicate bovine tuberculosis from domestic livestock in the United States and prevent its recurrence.

Federal regulations implementing this program are contained in 9 CFR part 77, ''Tuberculosis'' (referred to below as the regulations) and in the ''Uniform Methods and Rules—Bovine Tuberculosis Eradication'' (UMR) which is incorporated by reference within the regulations.

The status of a State or zone is based on its prevalence of tuberculosis in cattle and bison, the effectiveness of the State's tuberculosis eradication program, and the degree of the State's compliance with standards for cattle and bison contained in the UMR. The regulations provide that a State may request partitioning into specific geographic regions or zones with different status designations (commonly referred to as split-State status) if bovine tuberculosis is detected in a portion of a State and the State demonstrates that it meets certain criteria with regard to zone classification.

We have received from the State of Michigan a request to reclassify the modified accredited advanced zone in the State's Lower Peninsula as accredited free. Based on the findings of a review of the tuberculosis eradication program in Michigan, APHIS has determined that the zone meets the criteria for advancement of status contained in the regulations.

State animal health officials in Michigan have demonstrated that the State enforces and complies with the provisions of the UMR. The State of Michigan has demonstrated that the modified accredited advanced zone has zero percent prevalence of cattle and bison herds affected with tuberculosis and has had no findings of tuberculosis in any cattle or bison in the zone since the last affected herd in the zone was depopulated in April 2011. Therefore, Michigan has demonstrated that the zone within the State's Lower Peninsula previously classified as modified accredited advanced meets the criteria for accredited-free status as set forth in the definition of accredited-free State or zone in § 77.5 of the regulations.

Based on our evaluation of Michigan's request, we are classifying the zone consisting of Antrim, Charlevoix, Cheboygan, Crawford, Emmet, Otsego, and Presque Isle Counties as accredited free.

Immediate Action

Immediate action is warranted to relieve restrictions on the interstate movement of cattle and bison from Antrim, Charlevoix, Cheboygan, Crawford, Emmet, Otsego, and Presque Isle Counties in Michigan. Under these circumstances, the Administrator has determined that prior notice and opportunity for public comment are contrary to the public interest and there is good cause under 5 U.S.C. 553 for making this action effective less than 30 days after publication in the **Federal Register**.

We will consider comments we receive during the comment period for this interim rule (see **DATES** above). After the comment period closes, we will publish another document in the **Federal Register**. The document will include a discussion of any comments we receive and any amendments we are making to the rule.

Executive Order 12866 and Regulatory Flexibility Act

This interim rule is subject to Executive Order 12866. However, for this action, the Office of Management and Budget has waived its review under Executive Order 12866.

In accordance with the Regulatory Flexibility Act, we have analyzed the potential economic effects of this action on small entities. The analysis is summarized below. The full analysis may be viewed on the Regulations.gov Web site (see **ADDRESSES** above for instructions for accessing Regulations.gov) or obtained from the person listed under **FOR FURTHER INFORMATION CONTACT**.

Michigan has submitted a request for split-State bovine tuberculosis status that will advance seven counties on the Lower Peninsula of Michigan (Antrim, Charlevoix, Cheboygan, Crawford, Emmet, Otsego, and Presque Isle) from modified accredited advanced to accredited-free status. This status advancement will eliminate pre-movement testing requirements for producers in the seven counties, saving them time and money. Based on national statistics and Small Business Administration size standards, most if not all of the cattle and dairy operations affected are likely to be small entities.

The number of herds in the 7 counties that require surveillance testing will be reduced from about 390 to fewer than 120. Tuberculosis testing, including veterinary fees, costs about $10 to $15 per head. Based on an estimated 33 head per herd, total annual cost savings are expected to range between $90,000 and $135,000 yearly in the 7 counties.

The average value of cattle and calves in Michigan is about $1,100 per head. Thus, the savings by forgoing tuberculosis testing represent about 1.3 percent of the average value of the animals. This action will not significantly change program operations and will have no significant effects on other Federal agencies, State government, or local governments.

Under these circumstances, the Administrator of the Animal and Plant Health Inspection Service has determined that this action will not have a significant economic impact on a substantial number of small entities.

Executive Order 12372

This program/activity is listed in the Catalog of Federal Domestic Assistance under No. 10.025 and is subject to Executive Order 12372, which requires intergovernmental consultation with State and local officials. (See 7 CFR part 3015, subpart V.)

Executive Order 12988

This rule has been reviewed under Executive Order 12988, Civil Justice Reform. This rule has no retroactive effect and does not require administrative proceedings before parties may file suit in court challenging this rule.

Paperwork Reduction Act

This interim rule contains no new information collection or recordkeeping requirements under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

List of Subjects in 9 CFR Part 77

Animal diseases, Bison, Cattle, Reporting and recordkeeping requirements, Transportation, Tuberculosis.

Accordingly, we are amending 9 CFR part 77 as follows:

PART 77—TUBERCULOSIS

■ 1. The authority citation for part 77 continues to read as follows:

Authority: 7 U.S.C. 8301–8317; 7 CFR 2.22, 2.80, and 371.4.

§ 77.7 [Amended]

■ 2. In § 77.7, paragraph (b)(1) is amended by removing the words ''zones that comprise'' and adding the words ''zone that comprises'' in their place and by removing the words ''§ 77.9(b)(1) and''.

■ 3. In § 77.9, paragraph (b) is revised to read as follows:

§ 77.9 Modified accredited advanced States or zones.

* * * * *

(b) The following are modified accredited advanced zones: None.

* * * * *

Done in Washington, DC, this 4th day of September 2014.

Kevin Shea,

Administrator, Animal and Plant Health Inspection Service.

[FR Doc. 2014–21583 Filed 9–9–14; 8:45 am]

BILLING CODE 3410–34–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 866

[Docket No. FDA–2014–N–1166]

Medical Devices; Immunology and Microbiology Devices; Classification of Dengue Virus Nucleic Acid Amplification Test Reagents

AGENCY: Food and Drug Administration, HHS.

ACTION: Final order.

SUMMARY: The Food and Drug Administration (FDA) is classifying dengue virus nucleic acid amplification test reagents into class II (special controls). The Agency is classifying the device into class II (special controls) because special controls, in addition to general controls, will provide a reasonable assurance of safety and effectiveness of the device.

DATES: This order is effective October 10, 2014. The classification was applicable May 24, 2012.

FOR FURTHER INFORMATION CONTACT: Beena Puri, Center for Devices and Radiological Health, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 66, Rm. 5553, Silver Spring, MD 20993–0002, 301–796–6202.

SUPPLEMENTARY INFORMATION:

I. Background

In accordance with section 513(f)(1) of the Federal Food, Drug, and Cosmetic Act (the FD&C Act) (21 U.S.C. 360c(f)(1)), devices that were not in commercial distribution before May 28, 1976 (the date of enactment of the Medical Device Amendments of 1976), generally referred to as postamendments devices, are classified automatically by statute into class III without any FDA rulemaking process. These devices remain in class III and require premarket approval, unless and until the device is classified or reclassified into class I or II, or FDA issues an order finding the device to be substantially equivalent, in accordance with section 513(i) of the FD&C Act, to a predicate device that does not require premarket approval. The Agency determines whether new devices are substantially equivalent to predicate devices by means of premarket notification procedures in section 510(k) of the FD&C Act (21 U.S.C. 360(k)) and part 807 (21 CFR part 807) of the regulations.

Section 513(f)(2) of the FD&C Act, as amended by section 607 of the Food and Drug Administration Safety and Innovation Act (Pub. L. 112–144, July 9, 2012, 126 Statute 1054), provides two procedures by which a person may request FDA to classify a device under the criteria set forth in section 513(a)(1). Under the first procedure, the person submits a premarket notification under section 510(k) of the FD&C Act for a device that has not previously been classified and, within 30 days of receiving an order classifying the device into class III under section 513(f)(1) of the FD&C Act, the person requests a classification under section 513(f)(2). Under the second procedure, rather than first submitting a premarket notification under section 510(k) and then a request for classification under the first procedure, the person determines that there is no legally marketed device upon which to base a determination of substantial equivalence and requests a classification under section 513(f)(2) of the FD&C Act. If the person submits a request to classify the device under this second procedure, FDA may decline to undertake the classification request if FDA identifies a legally marketed device that could provide a reasonable basis for review of substantial equivalence with the device or if FDA determines that the device submitted is not of ''low-moderate risk'' or that general controls would be inadequate to control the risks and special controls to mitigate the risks cannot be developed.

In response to a request to classify a device under either procedure provided by section 513(f)(2) of the FD&C Act, FDA will classify the device by written order within 120 days. This classification will be the initial classification of the device. Within 30 days after the issuance of an order classifying the device, FDA must publish a notice in the **Federal Register** announcing this classification.

In accordance with section 513(f)(1) of the FD&C Act, FDA issued an order on February 24, 2012, classifying the CDC DENV–1–4 Real-Time RT–PCR Assay into class III, because it was not substantially equivalent to a device that was introduced or delivered for introduction into interstate commerce for commercial distribution before May 28, 1976, or a device which was subsequently reclassified into class I or class II. On March 12, 2012, the Centers for Disease Control and Prevention submitted a request for de novo classification of the CDC DENV–1–4 Real-Time RT–PCR Assay under section 513(f)(2) of the FD&C Act. The manufacturer recommended that the device be classified into class II.

In accordance with section 513(f)(2) of the FD&C Act, FDA reviewed the request for de novo classification in order to classify the device under the criteria for classification set forth in section 513(a)(1) of the FD&C Act. FDA classifies devices into class II if general controls by themselves are insufficient to provide reasonable assurance of safety and effectiveness, but there is sufficient information to establish special controls to provide reasonable assurance of the safety and effectiveness of the device for its intended use. After review of the information submitted in the request, FDA determined that the device can be classified into class II with the establishment of special controls. FDA believes these special controls will provide reasonable assurance of the safety and effectiveness of the device.

The device is assigned the generic name dengue virus nucleic acid amplification test reagents, and it is identified as devices that consist of primers, probes, enzymes, and controls for the amplification and detection of dengue virus serotypes 1, 2, 3, or 4 from viral ribonucleic acid (RNA) in human serum and plasma from individuals who have signs and symptoms consistent with dengue (mild or severe). The identification of dengue virus serotypes 1, 2, 3, or 4 in human serum and plasma (sodium citrate) collected from human

patients with dengue provides epidemiologic information for surveillance of circulating dengue viruses.

FDA has identified the following risks to health associated with this type of device and the measures required to mitigate these risks:

TABLE 1—IDENTIFIED RISKS TO HEALTH AND MITIGATION MEASURES

Identified risks to health	Mitigation measures
A false positive test result for an individual may lead to unnecessary treatment and possibly a less thorough laboratory evaluation for the true cause of illness; a false positive result may lead to unnecessary initiation of mosquito vector control measures.	Device description containing the information specified in the special control guideline. Performance characteristics. Labeling. Postmarket measures.
A false negative test result may lead to inappropriate use of antibiotics or a delay in treatment to prevent death due to dengue hemorrhagic fever or dengue shock syndrome or a false negative result may lead to delay in initiation of mosquito vector control measures.	Device description containing the information specified in the special control guideline. Performance characteristics. Labeling. Postmarket measures.
An error in the interpretation of the results	Labeling.

FDA believes that the measures set forth in the special controls guideline entitled ''Class II Special Controls Guideline: Dengue Virus Nucleic Acid Amplification Test Reagents'' are necessary, in addition to general controls, to mitigate the risks to health described in table 1.

Therefore, on May 24, 2012, FDA issued an order to the petitioner classifying dengue virus nucleic acid amplification test reagents into class II. FDA is codifying this device type by adding § 866.3946.

II. 510(k) Premarket Notification

Following the effective date of this final classification order, any firm submitting a 510(k) premarket notification for this device type will need to comply with the special controls.

Section 510(m) of the FD&C Act provides that FDA may exempt a class II device from the premarket notification requirements under section 510(k) of the FD&C Act if FDA determines that premarket notification is not necessary to provide reasonable assurance of the safety and effectiveness of the device. For this type of device, FDA has determined that premarket notification is necessary to provide reasonable assurance of the safety and effectiveness of the device. Therefore, this type of device is not exempt from premarket notification requirements. Persons who intend to market this type of device must submit to FDA a premarket notification, prior to marketing the device, which contains information about the dengue virus nucleic acid amplification test reagents they intend to market.

III. Environmental Impact

The Agency has determined under 21 CFR 25.34(b) that this action is of type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

IV. Paperwork Reduction Act of 1995

This final administrative order establishes special controls that refer to previously approved collections of information found in other FDA regulations. These collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). The collections of information in part 807, subpart E, regarding premarket notification submissions have been approved under OMB control number 0910–0120; the collections of information in 21 CFR part 820 have been approved under OMB control number 0910–0073; and the collections of information in 21 CFR part 801 and 21 CFR 809.10 have been approved under OMB control number 0910–0485.

List of Subjects in 21 CFR Part 866

Biologics, Laboratories, Medical devices.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs, 21 CFR part 866 is amended as follows:

PART 866—IMMUNOLOGY AND MICROBIOLOGY DEVICES

■ 1. The authority citation for 21 CFR part 866 continues to read as follows:

Authority: 21 U.S.C. 351, 360, 360c, 360e, 360j, 371.

■ 2. Section 866.3946 is added to subpart D to read as follows:

§ 866.3946 Dengue virus nucleic acid amplification test reagents.

(a) *Identification.* Dengue virus nucleic acid amplification test reagents are devices that consist of primers, probes, enzymes, and controls for the amplification and detection of dengue virus serotypes 1, 2, 3, or 4 from viral ribonucleic acid (RNA) in human serum and plasma from individuals who have signs and symptoms consistent with dengue (mild or severe). The identification of dengue virus serotypes 1, 2, 3, or 4 in human serum and plasma (sodium citrate) collected from human patients with dengue provides epidemiologic information for surveillance of circulating dengue viruses.

(b) *Classification.* Class II (special controls). The special control is FDA's guideline entitled ''Class II Special Controls Guideline: Dengue Virus Nucleic Acid Amplification Test Reagents.'' For availability of the guideline document, see § 866.1(e).

Dated: September 4, 2014.

Leslie Kux,

Assistant Commissioner for Policy.

[FR Doc. 2014–21479 Filed 9–9–14; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

24 CFR Parts 3285 and 3286

[Docket No. FR–5631–F–02]

RIN 2502–AJ15

Model Manufactured Home Installation Standards: Ground Anchor Installations

AGENCY: Office of the Assistant Secretary for Housing—Federal Housing Commissioner, HUD.

ACTION: Final rule.

SUMMARY: This final rule amends the Manufactured Home Model Installation Standards by revising existing requirements for ground anchor installations and establishing standardized test methods to determine ground anchor performance and resistance. The performance of conventional ground anchor assemblies is critical to the overall quality and structural integrity of manufactured housing installations. Because there was no generally accepted method for rating and certifying ground anchors, states had adopted different requirements for certifying ground anchor performance. This final rule establishes a uniform test method that can be utilized to determine and rate ground anchor performance in different soil classifications and may be used by states to certify and accept ground anchor assemblies.

DATES: *Effective Date:* November 10, 2014.

FOR FURTHER INFORMATION CONTACT: Pamela Beck Danner, Administrator, Office of Manufactured Housing Programs, Office of Housing, Department of Housing and Urban Development, 451 7th Street SW., Room 9164, Washington DC 20410; telephone number 202–708–6423 (this is not a toll-free number). Persons with hearing or speech impairments may access this number through TTY by calling the toll-free Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

I. Background

On July 26, 2013, at 78 FR 45104, HUD published a proposed rule to amend the Manufactured Home Model Installation Standards by adopting recommendations made by the Manufactured Home Consensus Committee (MHCC) to revise existing requirements for ground anchor installations, and establish standardized test methods to determine ground anchor performance and resistance. The performance of conventional ground anchor assemblies is critical to the overall quality and structural integrity of manufactured housing installations. HUD's proposed rule recognized that while the Model Manufactured Home Installation Standards (24 CFR part 3285) reference a nationally recognized testing protocol for ground anchor assemblies, there is currently no national test method to rate and certify ground anchor assemblies in different soil classifications.

This final rule establishes standard test methods for evaluating ground anchors by the anchor assembly/stabilizer plate test method, the vertical in-line anchor assembly test method, and the in-line ground anchor assembly test method. These standard test methods require determination of soil classification by test probe at each testing site for each anchor assembly being certified. Failure criteria is established as a displacement of 2 inches in either the horizontal or vertical direction prior to reaching a total working load of 3,150 pounds, or when the ground anchor head displaces 2 inches in the vertical direction or 3 inches in the horizontal direction prior to reaching a total load of 4,725 pounds, or when any component of the ground anchor shaft fails prior to reaching a total load of 4,725 pounds. The final rule requires that the working load design value for each installation method and soil classification be reported in the ground anchor assembly listing or certification.

Ground anchors consist of a specific assembly designed to transfer home anchoring loads to the ground. Ground anchors are used extensively in manufactured housing installations, and are economical, readily available, and can be installed with relatively lightweight tools and equipment. Anchors are typically constructed with a circular shaft of one or more helixes, a head connects at the opposite side of the anchor which then connects with the home's frame or sidewalls. Helical anchors are designed to be augured into the ground and may also be installed with stabilizer plates to increase the lateral capacity of the anchor.

One significant limitation of ground anchors arises from multiple soil-anchor response mechanisms as a function of soil type, anchor depth, and load configuration. In cohesive soils, excessive anchor movements in a vertical direction can approach or exceed the soil's shear strength. In such cases, the ground anchor is supported by the soil's residual shear strength, resulting in a decrease in anchor capacity. In granular soils, large lateral movements may produce failure planes that can reduce the strength on the vertical direction. In either case, ground anchor movements of several inches can have significant negative impacts on long-term performance and safety of the home.

II. Changes and Clarifications Made in This Final Rule

This final rule follows publication of the July 26, 2013, proposed rule and takes into consideration the public comments received on the proposed rule. In response to public comment, a discussion of which is presented in the following section of this preamble, and in further consideration of issues addressed at the proposed rule stage, HUD is making two changes at this final rule stage. Specifically, HUD is providing that ground anchor designs that have been tested and approved prior to the effective date of this rule are not required to be retested to the standards of this rule if they meet certain criteria as discussed in Section IV of this preamble. In addition, HUD is clarifying the final rule to require that ground anchor assemblies be subject to on-going surveillance by a nationally recognized laboratory. More specifically and to preclude any misunderstanding, HUD is removing the phrase, ''or a registered professional engineer or registered architect must certify'' from § 3285.402(a) since professional engineers or architects do not typically offer these services.

III. The Commenters

The public comment period for the July 26, 2013, proposed rule closed September 24, 2013. HUD received six public comments in response to this proposed rule. Comments were submitted by two manufacturers of ground anchors, two national trade associations representing the manufactured housing industry, a nationally recognized independent third-party testing, listing, and inspection agency for building systems and materials and a nationally recognized Design Approval and Plan Inspection Agency for manufactured and modular homes, and a member of the public. The commenters were largely supportive of the proposed rule but offered specific recommendations to sections of the proposed rule. In addition, on May 8, 2014, HUD met with the Manufactured Housing Institute (MHI) and representatives of the manufactured home ground anchor industry. At this meeting, the concerns discussed in MHI's public comment were largely reiterated. Issues presented included the cost and need of retesting existing anchor designs, the need for HUD to focus on ensuring the proper installation of the manufactured home rather than on the methods used to test the anchor as a means to increase the integrity of manufactured homes in high wind events, and possible flaws in the field testing used by HUD to base its proposed rule. The following section of this preamble summarizes the significant issues raised by the commenters on the July 26, 2013,

proposed rule and HUD's responses to these comments.

Comment: HUD should use a higher safety factor. One commenter stated that anchoring/tie downs are not sufficient to hold prefab units unless they are complemented with seismic/wind load anchors of equal or greater weight with a safety factor of 5. The commenter recommended that the rule reflect the safety factor of 5 as a minimum for all soils and suggested that HUD consider using the International Code Council standards.

Response: The Department does not agree with the commenter with regard to the recommendation to use a higher safety factor of 5 in evaluating ground anchor performance. Based on field investigations of ground anchor performance following recent hurricane events, HUD has determined that the current factor of safety of 1.5 is adequate. HUD bases its determination on the adequacy of ground anchor performance in recent high wind events, such as Hurricane Charley, and commentary in a field research study conducted for HUD, which support the conclusion that a safety factor in the range of 1.5 to 2.0 is adequate when anchors are tested or selected on the basis of site soil characterization which would be required by this rule.

Comment: The field testing used by HUD to justify the proposed rule is flawed. One commenter stated that the results of the tests discussed in the proposed rule are invalid because the anchors tested where not appropriate for the soil classification. According to the commenter, Products Testing, Inc. in a letter dated October 20, 2008, reported that, ''the anchors used at the Georgia test site were the wrong anchors for soil classification at the site. The HUD contractor failed to use the correct maximum load scale to match the anchors that were tested.'' This issue was also presented in HUD's May 8, 2014, meeting with MHI and representatives of the ground anchor industry.

Response: The field testing was not flawed and was not focused on the integrity of the anchors being tested. Rather, the testing was designed to determine a method or methods by which ground anchors could be universally tested in all soil classifications to produce reliable and repeatable results. The study found comparable testing results in ground anchor performance using the test protocol being evaluated between the testing apparatus and methods used by the contractor and the current testing approach used by ground anchor suppliers. The testing was not designed, as the commenter suggests, to evaluate the performance of a specific ground anchor at the testing site.

Comment: The testing costs estimated in the proposed rule are too conservative. A commenter questioned the accuracy of the testing costs reflected in the proposed rule, stating that it likely has the fewest number anchors requiring retesting and estimating that the cost of retesting would be approximately $175,000. The commenter also stated that the 2 to 3 day timeframe to do the retesting was unrealistic. Another commenter stated that HUD's cost estimates for retesting existing anchors were too low. According to the commenter, the five anchor manufacturers each have an average of 12 to 15 anchor designs. To retest each design, each anchor would need to be tested in two differed soil classifications taking 2 to 3 days. The costs of testing would include the possibility that testing would be delayed for bad weather and for the availability of engineers to witness tests and prepare reports and certifications. Rather than a one-time cost of $50,000 to $75,000 for each anchor manufacturer, as HUD estimates, the commenter states that a survey of all manufacturers estimates costs to be more like $200,000 to $250,000 per manufacturer, for an aggregate costs of $1 to $1.25 million. The commenter concluded that these costs would have to be borne by the consumer and that retesting of existing designs is not justifiable given the performance record of the current installed product. A third commenter recommended that HUD should address and minimize, to the maximum extent possible, any potential additional costs attributed to the new standards that have not previously been brought to or considered by the MHCC as part of its consensus process.

Response: The testing costs estimates discussed in the proposed rule included the cost of testing both new and existing ground anchor systems. HUD believes that its cost estimates also considered all of the factors identified in the comment as contributing to the cost of retesting existing designs. The suppliers of ground anchors present at the May 7, 2014, meeting with HUD, stated that tests for new anchor designs are infrequently conducted because few new anchor designs are produced. Notwithstanding, HUD has decided not to require the retesting of existing anchor designs provided they meet certain conditions specified in this final rule. HUD believes that this decision addresses the concerns regarding the potential cost of the rule.

Comment: Failure to properly install the manufactured home or the anchors securing the home is a greater risk to the home than failure to establish a national testing method to determine anchor performance and HUD should focus on ensuring that manufactured home is properly installed rather than on testing ground anchors. Two commenters stated that the integrity of the manufactured home installation depends more on the quality of the installation itself, rather than the methods used to test the anchor. According to these commenters, HUD can implement a stringent ground anchor test method, but the anchorage system will still fail if the wrong anchor is chosen for the soil classification at the site, the anchor is not properly installed (e.g., not installed to full depth, missing stabilizer plates, straps not installed tight, etc.), or if too few anchors are installed (e.g., manufacturer's instructions for the number of ground anchors were not adhered to resulting in too few anchors being installed.). These commenters stated that if HUD wants to increase the safety of manufactured housing it should shift its focus on inspecting the installation of new and used homes. Another commenter recommended that HUD focus its efforts in three general areas. First, the commenter stated that there are currently 17 states that have not had their installer licensing program approved by HUD; second, the commenter recommended that HUD create a standard for the installation of used homes; and third, the commenter recommended that HUD require all states to perform installation inspections on all manufactured homes.

Response. The Department agrees that ensuring the proper installation of each manufactured home can increase the safety of manufactured housing and reduce risk. However, ensuring through uniform testing and certification that anchors are properly installed will enhance the performance of the home in wind events. The Department intends to obtain the services of a contractor in 2014 to assist HUD in the administration and enforcement of its installation standards and regulations for installers in states that do not have HUD accepted qualifying installation programs. The current program regulations for installation in 24 CFR part 3286 do not specifically require qualifying state programs to inspect each home installation. Rather, each state must have a method for inspecting new installations that includes holding installers accountable for the work they perform. There is no legislative

authority for HUD to regulate the installation of used manufactured homes.

Comment: Current ground anchors have an admirable performance record when properly installed and should not have to be retested. One commenter, citing two studies, one conducted by the Florida Manufactured Housing Association and the second conducted by RADCO for the Manufactured Housing Institute,[1] stated that anchors installed in Florida prior to Hurricane Charley performed extremely well. The commenter quoted the RADCO report as stating that, ''[t]here was no evidence of shifting or movement of the homes. All anchors remained firmly anchored in the ground and all straps and metal braces remained tight. All piers remained in stable condition, and continued to provide full bearing and firm support for the homes. No remedial measures were needed. After Hurricane Charley, park management contracted with an independent firm to inspect the foundation and anchoring systems of all homes within the community. All of these inspections confirmed that the foundation and anchoring systems remained in good condition, and were not affected by the hurricane.'' Based on these reports, the commenter suggested that current ground anchors should not need to be retested.

Response. The Department agrees with the commenter and will not require existing ground anchor systems to be retested provided they meet the conditions detailed in the final rule and as discussed in response to the comment immediately below.

Comment: HUD should allow grandfathering of existing ground anchors that have already been tested and certified. Several commenters questioned the need to retest existing anchors that already have been tested and certified. These commenters recommended that anchors that have already been tested and certified be grandfathered in and not subject to retesting. Another commenter recommended that HUD's final rule should permit the continued use of existing ground anchors produced and certified prior to the final rule's effective date. A third commenter agreed that existing ground anchor designs should be grandfathered and recommended the following criteria to allow grandfathering:

1. Each ground anchor test shall have been witnessed by a professional engineer and that engineer shall have documented the results in a standard form test report which bears his P.E. stamp.
2. Each ground anchor shall be listed as that term is defined in 3285.5
3. Each specimen tested must meet or exceed an ultimate load of 4,725 lbs.
4. A minimum of three (3) specimens must be tested for each ground anchor design.
5. The soil test torque probe method must have been used to determine soil classifications at the ground anchor test site.
6. Each test report must identify the soil classification for which the ground anchor was tested. A ground anchor tested in a given soil classification number must not be listed for use in a higher/weaker soil classification number.
7. Tests performed by the stabilizer plate method must indicate the angle of pull and the listing for the anchor must identify the minimum allowable angle of pull to the horizontal based on the tests.
8. Each test report must include specifications and dimensions of the ground anchor assembly.
9. The maximum deflection at 3,150 lbs. is 2″ vertically or 2″ horizontally.
10. The maximum deflection at 4,725 lbs. is 2″ vertically or 3″ horizontally.

The commenter also recommended that HUD not alter or add to this list since doing so would make it impossible for the majority of ground anchors to conform.

Response: After reviewing these comments, HUD agrees that published studies support the conclusion that existing anchor designs have performed well in the past. HUD has also considered the concern raised by some of the commenters regarding the cost of retesting existing design. Based on this information, HUD believes there is limited utility to requiring that all existing ground anchor designs be retested. Nevertheless, HUD believes that public safety requires that existing ground anchor designs are structurally sound and provide a measure of dependability to ensure the public's trust. As a result, HUD will generally adopt the criteria provided by the commenter to ensure that existing ground anchor designs meet this measure. HUD has clarified in the final rule that for the stabilizer plate method, that the anchor must have been certified and listed for a minimum angle of pull to the horizontal of at least 30 degrees, and that minimum angle of pull to the horizontal must be included in the listing. The final rule also clarifies that for any previously certified anchor assembly where the angle of pull was less than 30 degrees that the anchor assembly will need to be re-evaluated in accordance with the procedures for new anchor designs. HUD believes that the criteria recommended is similar to and meets the intent of HUD's proposal to ensure public safety by retesting existing anchor designs. Based on public comment, HUD believes that most existing ground anchor products are tested and conform to this standard. This conclusion was confirmed by the ground anchor manufacturers at the May 7, 2014, meeting.

Comment: Other issues. A commenter disputed the lack of a nationally recognized ground anchor testing protocol in 2005, noting that Florida and Alabama have strict testing protocols since 1994.

Response: HUD is aware of the Florida and Alabama testing protocols. These protocols, however, are not recognized in states other than Florida and Alabama, respectively.

Comment: A commenter stated that there is typo at § 3285.402(b)(8)(I) and that the fourth line which reads in part ''(b)(7)(iii)'' should read ''(b)(8)(iii)''.

Response: The section has been revised to refer to § 3285.402(b)(8)(iii).

Response to Specific HUD Questions in the Proposed Rule

Question #1: Are three anchor tests at each test certification site sufficient to ensure adequate reliability in rated anchor performance, in view of the variation and impact of soil type on the resistance of ground anchor assemblies, or should a minimum of six tests be required, as initially proposed in the draft GAATP?

Comment: One commenter responded that three tests are wholly adequate. The commenter identified several factors which assure that three tests are adequate, including that the proposed rule would require all three test specimens to equal or exceed an ultimate load of 4725 pounds. The commenter stated that many national test methods, such as International Code Congress Evaluation Service Acceptance Criteria, also require three tests but allow for the average of the results to be used. The proposed test method described in HUD's rule would therefore be more stringent than many national recognized methods for determining allowable loading of structural systems based on tests. In addition, the requirements to (1) increase the load throughout the test and (2) that loading to 4725 pounds must not be reached in less than two minutes both serve to reduce variability in ultimate load test results. The commenter also stated that

[1] The Performance of Post-1994 HUD Code Manufactured Homes During Hurricane Charley. Prepared by RADCO. Prepared for the Manufactured Housing Institute. January 26, 2005.

requiring six tests instead of three would double the cost of conducting certification testing with very little if any added reliability.

Response: Based on the comments received, the final rule requires a minimum of three tests to be conducted to certify each ground anchor assembly in the weakest soil classification for which it is listed.

Question #2: Should the proposed rule be amended to include test requirements for an evenly controlled rate of anchor displacement (0.5 to 0.6 inches per minute) to prevent higher anchor load resistance from being certified, as found in the comparison tests in the HUD research study?

Comment: One commenter responded that HUD should not amend the requirement as suggested. The commenter stated that HUD's previous tests raised the concern that it might be possible to achieve higher ultimate load resistance by loading the anchor very quickly all the way to ultimate load. According to the commenter, the proposed rule adequately addressed this possible concern by adding the dual requirements that the load must be increased throughout the test, and that loading to 4725 pounds must not be reached in less than two minutes. The commenter also stated that test apparatus cost is another factor for not amending the rule. Equipment that can precisely control the rate of displacement is significantly more expensive that the hydraulic load ram systems actuated by hand or power pumps which are currently in use for ground anchor testing.

Response: HUD agrees with the commenter and the final rule does not require a controlled rate of displacement but does require that the ultimate load must not be reached in less than two minutes.

Question #3: Should anchor certifications performed by a professional engineer be required to include follow-up investigations and/or testing to assure ongoing quality of ground anchor products and assemblies?

Comment: One commenter responded that the real question should be, should professional engineers be allowed to ''certify'' products on an ongoing basis and that the answer to this question should be no. Another commenter agreed and stated that the terms ''listed'' and ''certified'' have a common definition in the Installation Standard found at § 3282.5. According to both commenters, listing agencies are in the business of providing ongoing inspections to assure ongoing quality, but engineers and architects are not. Engineers and architects typically provide a service at one moment in time and do not provide independent ongoing quality assurance surveillance of products. ''Follow-up investigation,'' as stated by HUD, is critical to help assure ongoing quality of any building material or system including ground anchors. This activity should be left to listing agencies or third-party follow-up to ensure independent assurance of ongoing quality of any building material or system. To preclude any misunderstanding regarding, both commenters recommended that HUD remove the phrase, ''or a registered professional engineer or registered architect must certify'' from § 3285.402. The phrase, according to the commenters, is confusing and misleading and provides no assurance whatsoever on ongoing quality.

Response: HUD agrees with the commenters. As a result, HUD has revised § 3285.402(a)(1) of the final rule to require on-going surveillance by a nationally recognized laboratory since professional engineers or architects do not typically offer these services.

IV. This Final Rule

The test methods for evaluating ground anchor assemblies and reporting requirements remain unchanged from the proposed rule. However, the final rule now requires that each ground anchor assembly be subject to an on-going quality assurance surveillance program by a nationally recognized third party testing agency following initial certification by a registered professional engineer or architect. Based on the public comments received, the final rule will also not require that existing ground anchor assemblies be retested and certified and be subject to the testing provisions of this part, provided that they have been previously tested and those tests were certified by a professional engineer or registered architect and the ground anchor has been listed by a nationally recognized testing agency and the following conditions are met and satisfied:

(i) A minimum of three tests meeting all requirements set by this rule were conducted for each ground anchor assembly design;

(ii) Each of the ground anchor assembly designs tested must have met or exceeded a working load of 3,150 pounds and sustained an ultimate load of 4,725 pounds in the weakest soil classification for which the anchors were tested and certified;

(iii) The soil in which the anchor was certified has been classified by one of the methods indicated in § 3285.202 and the anchor is not listed for use in a weaker/higher soil classification than tested and identified in the Table to § 3285.202;

(iv) A test report was provided for each ground anchor assembly design that identifies the soil classification in which the ground anchor was tested and listed, and includes complete specifications and dimensions for the ground anchor assembly;

(v) For each of the ground anchor assemblies tested, the maximum deflection at 3,150 pounds did not exceed two inches vertically or three inches horizontally;

(vi) For each of the ground anchor assemblies tested, the maximum deflection at 4,725 pounds did not exceed two inches vertically or three inches horizontally;

(vii) For the stabilizer plate test method, at least three tests were performed at the minimum angle of pull to the horizontal specified in the listing and the minimum angle of pull to the horizontal must have been at least 30 degrees. Any existing ground anchor assembly tests and certifications where the angle of pull was less than 30 degrees will need to be re-evaluated in accordance with § 3285.402(b); and

(viii) For the stabilizer plate test method, the mimimum angle of pull to the horizontal is specified in the listing.

The final rule requires determination of soil classification by the test probe method at each testing site for which each anchor assembly is being certified, and requires the tests to be conducted in weaker soils at the lower 50 percentile torque probe value of the soil in which the anchor is being tested. A minimum of three tests must be performed at each certification test site and the anchor assembly must resist at least 4725 pounds (3,150 pounds × 1.5 factor of safety) in the direction of the pull for each test method for which the anchor is being certified.

The final rule includes standard test methods for evaluating ground anchors by the anchor assembly/stabilizer plate test method, the vertical in-line anchor assembly test method, and the in line ground anchor assembly test method. Failure criteria is established as a displacement of 2 inches in either the horizontal or vertical direction prior to reaching a total working load of 3,150 pounds, or when the ground anchor head displaces 2 inches in the vertical direction or 3 inches in the horizontal direction prior to reaching a total load of 4,725 pounds, or when any component of the ground anchor shaft fails prior to reaching a total load of 4,725 pounds.

The final rule requires the working load design value for each installation

method and soil classification to be reported in the ground anchor assembly listing or certification. The final rule also clarifies that an anchor tested in a given soil classification is not approved for use in a weaker or higher numbered soil classification (see Table to § 3285.202). The test report required by the final rule includes all conditions for each ground anchor assembly tested and the soil classification(s) for which the assembly is certified for use, and the working load design value and minimum ultimate capacity for those soil classification(s).

V. Findings and Certifications

Paperwork Reduction Act

The information collection requirements contained in this final rule are pending approved by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520) and given OMB control number 2502–0578. In accordance with the Paperwork Reduction Act, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information, unless the collection displays a currently valid OMB control number.

Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) (UMRA) establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments, and on the private sector. This rule does not impose any Federal mandate on any State, local, or tribal government, or on the private sector, within the meaning of UMRA.

Environmental Review

A Finding of No Significant Impact with respect to the environment has been made in accordance with HUD regulations at 24 CFR part 50, which implement section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)). The Finding of No Significant Impact is available for public inspection between the hours of 8 a.m. and 5 p.m. weekdays in the Regulations Division, Office of General Counsel, Department of Housing and Urban Development, 451 Seventh Street SW., Room 10276, Washington, DC 20410–0500.

Executive Order 13132, Federalism

Executive Order 13132 (entitled ''Federalism'') prohibits, to the extent practicable and permitted by law, an agency from promulgating a regulation that has Federalism implications and either imposes substantial direct compliance costs on State and local governments and is not required by statute, or preempts State law, unless the relevant requirements of section 6 of the Executive Order are met. This rule does not have Federalism implications and does not impose substantial direct compliance costs on State and local governments or preempt State law within the meaning of the Executive Order. The Model Installation Standards by themselves do not affect governmental relationships or distribution of power. Therefore, HUD has determined that the Model Manufacture Home Ground Anchor Installation Standards do not have Federalism implications that warrant the preparation of a Federalism Assessment in accordance with Executive Order 13132.

Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. At the proposed rule stage, HUD conducted a material and labor cost impact analysis for this rule. HUD determined that the potential cost impact of the rule would be the costs associated with re-testing and listing or certifying existing ground anchor assemblies in accordance with the proposed testing methods. HUD estimated that the average per-home cost at the proposed rule stage would be approximately $1.6 million annually ($2.00 per anchor multiplied by an average of 16 anchors per home multiplied by 50,000 homes produced in a year). This included possible additional costs that may be incurred for re-design of existing anchor assemblies that may be needed to meet the testing requirements of the proposed rule. Based on this estimate, HUD determined that these costs would not represent a significant economic effect on either an industry-wide or per-unit basis and concluded that the rule would not impose a significant burden for a small business. As discussed in the preamble of this final rule, HUD has decided not to require that existing ground anchor assemblies be retested and certified as long as the anchor has been previously tested and those tests were certified by a professional engineer or registered architect. Based on public comment and meetings with representatives of the manufactured home ground anchor industry, HUD believes that most existing ground anchor products currently in use meet these standards and will not have to be retested. This revision significantly reduces the costs of the rule estimated at the proposed rule stage. As a result, HUD continues to believe that this rule would not impose a significant burden for small business. Therefore, the undersigned certifies that this rule will not have a significant impact on a substantial number of small entities.

Catalogue of Federal and Domestic Assistance

The Catalogue of Federal and Domestic Assistance number is 14.171.

List of Subjects

24 CFR Part 3285

Housing standards, Incorporation by reference, Installation, Manufactured homes.

24 CFR Part 3286

Administrative practice and procedure, Consumer protection, Intergovernmental relations, Manufactured homes, Reporting and recordkeeping requirements.

Accordingly, for the reasons discussed in this preamble, HUD amends 24 CFR parts 3285 and 3286 as follows:

PART 3285—MODEL MANUFACTURED HOME INSTALLATION STANDARDS

■ 1. The authority citation for part 3285 continues to read as follows:

Authority: 42 U.S.C. 3535(d), 5403, 5404, and 5424.

■ 2. In § 3285.5, add a new definition for *Site* in alphabetical order to read as follows:

§ 3285.5 Definitions.

* * * * *

Site. An area of land upon which a manufactured home is installed.

* * * * *

■ 3. In § 3285.402 revise paragraph (a), redesignate paragraphs (b) and (c) as paragraphs (c) and (d), respectively, and add a new paragraph (b) and a new appendix to § 3285.402, to read as follows:

§ 3285.402 Ground anchor installations.

(a) *Ground anchor certification and testing.* (1) Each ground anchor assembly must be manufactured and provided with installation instructions, and must be labeled or otherwise identified and subject to an on-going quality assurance surveillance program in accordance with its listing or certification (see 24 CFR 3285.5) by a nationally recognized testing laboratory.

A registered professional engineer or architect must certify that each ground anchor assembly is capable of resisting all loads in paragraph (c) of this section based on the test methods in paragraph (b) of this section for use in soil(s) classified in accordance with § 3285.202.

(2) Each ground anchor assembly that has been listed prior to November 10, 2014 is not subject to paragraph (b) of this section, provided it has been previously tested in accordance with this paragraph. A professional engineer or registered architect must have certified the testing. The ground anchor must be listed by a nationally recognized testing agency and the listing or certification includes or has met all of the following requirements:

(i) A minimum of three tests meeting all of the requirements of this section were conducted for each ground anchor assembly design;

(ii) Each of the ground anchor assembly designs tested must have met or exceeded a working load of 3,150 pounds and sustained an ultimate load of 4,725 pounds in the weakest soil classification for which the anchors were tested and certified;

(iii) The soil in which the anchor was certified has been classified by one of the methods indicated in § 3285.202 of these Standards and the anchor is not listed for use in a weaker/higher soil classification than tested and identified in the Table to § 3285.202;

(iv) A test report was provided for each ground anchor assembly design that identifies the soil classification in which the ground anchor was tested and listed and includes complete specifications and dimensions for the ground anchor assembly;

(v) For each of the ground anchor assemblies tested, the maximum deflection at 3,150 pounds did not exceed two inches vertically or three inches horizontally;

(vi) For each of the ground anchor assemblies tested, the maximum deflection at 4,725 pounds did not exceed two inches vertically or three inches horizontally;

(vii) For the stabilizer plate test method, at least three tests were performed at the minimum angle of pull to the horizontal specified in the listing and the minimum angle of pull to the horizontal must have been at least 30 degrees. Any existing ground anchor assembly tests and certifications where the angle of pull was less than 30 degrees will need to be re-evaluated in accordance with paragraph (b) of this section; and

(viii) For the stabilizer plate test method, the minimum angle of pull to the horizontal is specified in the listing.

(b) *Standard test methods for establishing working load design values of ground anchor assemblies used for new manufactured home installations*—(1) *Scope.* (i) These testing procedures provide standard test methods for establishing both ultimate loads and load resistance design values.

(ii) Each assembly or component of an anchor assembly must be tested by the methods established by this section, and therefore be suitable, as listed or certified for installation in an appropriately classified soil, for installation of manufactured homes.

(iii) To secure approval of ground anchor assembly products and components, ground anchor manufacturers must have their products tested and listed by a nationally recognized testing laboratory, or tested and certified by an independent registered professional engineer.

(iv) The testing laboratory or independent registered engineer must be free from any conflict of interest from the product manufacturer and any of the product manufacturer's affiliates.

(2) *Definitions.* The definitions contained in this section apply to the terms used in subpart E of this part.

Allowable displacement limits. Criteria establishing the maximum amount of displacement of a material, assembly, or component under load.

Certification test site. A site used for the purpose of anchor assembly qualification testing in accordance with this section.

Cohesive soil. A soil with sufficient clay content to exhibit substantial plastic behavior when moist or wet (i.e., able to be readily molded or rolled into a ⅛ -inch thread at a wide range of moisture contents).

Ground anchor manufacturer. Any person or company engaged in manufacturing or importing ground anchor assemblies.

Non-Cohesive soil. Sand, gravel, and similar soils that are predominantly granular and lack a sufficient quantity of fine, clay-sized particles to exhibit the behavior of cohesive soil as defined in this section.

Ultimate anchor load. The lower of either the highest load achieved during an individual test prior to failure due to exceeding allowable displacement limits or the load at failure of the anchoring equipment or its attachment point to the testing apparatus.

Working anchor load. The ultimate anchor load in pounds divided by a factor of safety of 1.5.

(3) *Determination of soil classification*—(i) *General description of soil classification.* The general description of soil classification is to be determined in accordance with the methods specified in the Table to § 3285.202.

(ii) *Standards for identification of soil and soil classification.* The soil test torque probe method must be used at the certification test site for soil classification. At a minimum, the soil test torque probe must be used at three sample locations representative of the extent of the certification site test area. Soil characteristics must be measured at a depth below ground surface of not greater than the anchor helix depth and not less than ⅔ of the anchor helix depth for each ground anchor depth evaluated within the test area. The lowest torque probe value resulting in the highest soil classification number must be used. Additional guidance regarding the soil test torque probe method is available at the Appendix to this section and at § 3282.202.

(iii) *Classification in non-cohesive soils.* Ground anchor assemblies must be tested and listed or certified, and labeled for use in non-cohesive soil. Ground anchor assemblies are permitted to be tested, listed or certified, and labeled for use in cohesive soil.

(4) *Field testing apparatus.* (i) The testing equipment for conducting tests to list or certify a ground anchor assembly for use in a classified soil must be capable of meeting the requirements of paragraph (b)(7) of this section as determined by the testing agency.

(ii) The testing equipment shall be calibrated to meet the testing requirements of paragraph (b)(7) of this section as determined by the testing agency.

(5) *Test specimens details and selection.* (i) Test specimens are to be examined by the independent testing, listing, or certifying entity for conformance with engineered drawings, specifications, and other information provided by the ground anchor manufacturer or producer including:

(A) Dimensions and specifications on all welds and fasteners;

(B) Dimensions and specifications of all metal or material;

(C) Model number and its location on the ground anchor; and

(ii) Necessary test specimens and products for the installed anchor assembly tests must be randomly selected by the independent testing, listing, or certifying entity.

(6) *Test requirements.* (i) Field tests must be performed on each anchor assembly installed in a classified soil as

defined in paragraph (b)(3) of this section.

(ii) Field test apparatuses must be as specified in paragraph (b)(4) of this section, and must conform to the testing requirements of paragraph (b)(7) of this section.

(iii) Testing equipment shall be adequate for testing as determined by the testing agency.

Note to paragraph (b)(6): As a recommended practice, the test rig soil reactions (bearing pads) should not be located closer to the center of the anchor assembly (anchor head) than the lesser of D, 4d, or 32 inches where D is the depth of the anchor helix and d is the diameter of the anchor helix, both in inches. However, experience with a particular test rig, types of anchors, and soil conditions may justify other acceptable dimensional tolerances.

(7) *Field tests of anchor assemblies.* (i) The soil characteristics at the certification test site must be identified and recorded according to paragraph (b)(3) of this section. The date, approximate time, and names of persons conducting and witnessing the anchor assembly tests must also be recorded at each certification test site.

(ii) Connection of the testing apparatus to the anchor assembly head must provide loading conditions to the anchor head, similar to actual site conditions. Adequacy of the connection must be determined by the testing agency or test engineer.

(iii) For soil classifications 3, 4A, and 4B, testing must be performed in the lower 50 percentile torque probe value of the soil classification being tested. For soil classifications 1 and 2 the torque probe value must not exceed 750 inch-pounds.

(iv) A minimum of three tests must be performed and the result of each test must meet or exceed 4,725 pounds pull (3,150 × 1.5 factor of safety) in the direction of pull.

(v) Special-purpose anchor assemblies, including those needed to accommodate unique design loads identified by manufacturers in their installation instructions, may be certified under this section or to more stringent requirements such as higher working loads, more restrictive anchor head displacements and/or tested angle limitations.

(vi) *Angle of pull.* Where the test apparatus configuration results in a changing angle of pull due to anchor assembly displacement during a lateral angle pull test, the angle of pull at the ultimate anchor load is to be recorded as the load angle for the test. Load angles are to be measured relative to the plane of the ground surface and shall be permitted to be rounded to the nearest 5-degree increment.

(vii) *Displacement measurement.* Vertical displacement (for all tests) and horizontal displacement (for lateral angle pull tests) must be measured relative to the centerline of the test apparatus' connection to the ground anchor assembly (anchor head) and the ground. A stable ground reference point for displacement measurements must be located independent of the test apparatus and not closer to the anchor assembly than the soil reaction points of the test apparatus. Displacement measurements shall be taken using a device with not less than ⅛-inch reading increments. Measurements shall be permitted to be rounded to the nearest ⅛-inch increment.

(8) *Anchor assembly field test methods.* (i) An anchor assembly must be tested in accordance with one or more of the assembly configurations addressed in paragraphs (b)(8)(iii), (iv) and (v) of this section. The as-tested configuration of any anchor assembly is a condition of the listing or certification. Alternate configurations are acceptable provided test conditions appropriately simulate actual end-use conditions and the as-tested configuration is addressed in the manufacturer's installation instructions.

(ii) Anchor assemblies designed for multiple connections to the manufactured home must be individually tested as specified in paragraphs (b)(8)(iii) and (iv) of this section.

(iii) Anchor assembly/stabilizer plate method. The following anchor assembly installation and testing must be consistently applied for all tests:

(A) The ground anchor is to be installed at an angle of 10–15 degrees from vertical to a depth of one-half (½) to two-thirds (⅔) of the anchor length.

(B) A stabilizer plate is to be driven vertically on the side of the ground anchor shaft facing the tensioning equipment three inches (3″) from the shaft and the top of the plate must be installed flush with the soil surface or not more than one inch below the soil surface.

(C) The ground anchor is to be driven to its full depth into the soil with the bottom of the anchor head not more than ¾ inch (¾″) above the stabilizer plate.

(D) The ground anchor head is to be attached to the tensioning equipment such that the tension load and displacement can be recorded. The tensioning equipment must be positioned to load the ground anchor and stabilizer plate at the minimum angle to the test site ground surface for which the anchor is being evaluated.

(E) The ground anchor is to be pre-tensioned to 500 pounds so that the anchor shaft contacts the stabilizer plate. If the anchor shaft does not come into contact with the stabilizer plate an anchor setting load not to exceed 1,000 pounds is permitted to be applied and then released prior to re-application of the 500-pound pre-tension force.

(F) The location of the ground anchor head is to be marked after it is pre-tensioned for measuring subsequent movement under test loading.

(G) Increase the load throughout the test. The recommended rate of load application must be such that the loading to not less than 4725 pounds is reached in not less than 2 minutes from the time the 500 pound pre-tension load is achieved.

(H) Record the load and displacement, at a minimum of 500–1000 pound increments, such that a minimum of five data points will be obtained to determine a load deflection curve. For each datum, the applied load and the ground anchor head displacement is to be recorded. In addition, the load and displacement is to be recorded at the Failure Mode identified in paragraph (b)(10) of this section. It is permissible to halt the addition of load at each loading increment for up to 60 seconds to facilitate taking displacement readings. The ultimate anchor load of the ground anchor assembly and corresponding displacement is to be recorded. The pre-tension load of 500 pounds should be included in the 4725 pound ultimate anchor load test. It is permissible to interpolate between displacement and load measurements to determine the ultimate anchor load.

(I) All ground anchor assemblies must be tested to the following:

(*1*) Failure due to displacement of the ground anchor assembly as established in paragraph (b)(9) of this section, or

(*2*) Failure of either the anchoring equipment or its attachment point to the testing apparatus, or to a minimum of 4725 pounds (when possible tests should be taken to 6000 pounds to provide additional data but this is not required).

(iv) Vertical in-line anchor assembly method. Anchor assembly installation and withdrawal procedures for test purposes are to be as follows, and be used consistently throughout all tests;

(A) The ground anchor must be installed vertically.

(B) The ground anchor must be driven to its full depth into the soil. (C) The ground anchor head must be attached to the tensioning equipment such that the

load and ground anchor head displacement can be recorded.

(D) The ground anchor must be pulled in line with the ground anchor shaft.

(E) The ground anchor shall be pre-tensioned to 500 pounds.

(F) The location of the ground anchor head must be marked after it is pre-tensioned for measuring subsequent movement under test loading.

(G) Increase the load throughout the test. The recommended rate of load application shall be such that the loading to not less than 4725 pounds is reached in not less than 2 minutes from the time the 500 pound pre-tension load is achieved.

(H) Record the load and displacement, at a minimum of 500–1000 pound increments, such that a minimum of five data points will be obtained to determine a load deflection curve. For each datum, the applied load and the ground anchor head displacement is to be recorded. In addition, the load and displacement is to be recorded at the Failure Mode identified in paragraph (b)(10) of this section. It is permissible to halt the addition of load at each loading increment for up to 60 seconds to facilitate taking displacement readings. The ultimate anchor load of the ground anchor assembly and corresponding displacement is to be recorded. The pre-tension load of 500 pounds should be included in the 4725 pound ultimate anchor load test. It shall be permissible to interpolate between displacement and load measurements to determine the Ultimate anchor load.

(I) All ground anchor assemblies must be tested to the following:

(*1*) Failure due to displacement of the ground anchor assembly as established in paragraph (b)(9) of this section, or

(*2*) Failure of either the anchoring equipment or its attachment point to the testing apparatus, or to a minimum of 4725 pounds (when possible tests should be taken to 6000 pounds to provide additional data but this is NOT required).

(v) In line ground anchor assembly method. Ground anchor assembly installation and withdrawal procedures for test purposes must be as follows, and must be used consistently throughout all tests.

(A) The ground anchor must be installed at an angle from the horizontal ground surface at which it is to be rated.

(B) The ground anchor must be driven to its full depth into the soil.

(C) The ground anchor head must be attached to the tensioning equipment such that tension and displacement can be recorded.

(D) The anchor must be pulled in line with the ground anchor shaft.

(E) The ground anchor shall be pre-tensioned 500 pounds.

(F) The location of the ground anchor head is to be marked after it is pre-tensioned for measuring subsequent movement under test loading.

(G) Increase the load throughout the test. The recommended rate of load application must be such that the loading to not less than 4725 pounds is reached in not less than 2 minutes from the time the 500 pound pre-tension load is achieved.

(H) Record the load and displacement, at a minimum of 500–1000 pound increments, such that a minimum of five data points will be obtained to determine a load deflection curve. For each datum, the applied load and the ground anchor head displacement is to be recorded. In addition, the load and displacement is to be recorded at the Failure Mode identified in paragraph (b)(10) of this section. It shall be permissible to halt the addition of load at each loading increment for up to 60 seconds to facilitate taking displacement readings. The ultimate anchor load of the ground anchor assembly and corresponding displacement must be recorded. The pre-tension load of 500 pounds should be included in the 4725 pound ultimate anchor load test. It is permissible to interpolate between displacement and load measurements to determine the Ultimate anchor load.

(I) All ground anchor assemblies must be tested to the following:

(*1*) failure due to displacement of the ground anchor assembly as established in paragraph (b)(9) of this section, or

(*2*) Failure of either the anchoring equipment or its attachment point to the testing apparatus, or to a minimum of 4725 pounds (when possible tests should be taken to 6000 pounds to provide additional data but this is NOT required)

Note to paragraph (b)(8). Additional testing at angles of pull greater than the minimum angle of pull may be used to provide design values for specific angles of pull greater than the minimum angle for which evaluation is sought.

(9) *Failure criteria.* The following conditions constitute failure of the ground anchor test assembly:

(i) When the ground anchor head, or its attachment point, displaces 2 inches in the vertical or horizontal direction from its pre-tensioned measurement position prior to reaching a total load of 3150 pounds (including any pretension load).

(ii) When the ground anchor head, or its attachment point, displaces 2 inches (2″) in the vertical direction or 3 inches (3″) in the horizontal direction from its pre-tensioned measurement position prior to reaching a total load of 4725 pounds (including any pretension load).

(iii) When breakage of any component of the ground anchor shaft occurs prior to reaching a total load of 4725 pounds.

(10) *Use of ultimate anchor loads to establish the working load design value.* (i) The working load design value is the lowest ultimate anchor load determined by testing, divided by a 1.5 factor of safety.

(ii) The working load design value, for each installation method and soil classification, shall be stated in the ground anchor assembly listing or certification. An anchor tested in a given soil classification number must not be approved for use in a higher/weaker soil classification number. For example an anchor tested in soil classification 3 must not be approved for soil classification 4A or 4B unless it is also tested in those soils. The 500 pound pre-tension is included in the ultimate anchor load.

(11) *Test report.* The test report to support the listing or certification for each ground anchor assembly tested is to include all conditions under which the ground anchor assembly was tested, including the following:

(i) A copy of all test data accumulated during the testing.

(ii) The soil characteristics including moisture content and methods for determining soil characteristics for each type of soil for which the ground anchoring assembly was evaluated.

(iii) The model of the ground anchor assembly tested.

(iv) The ground anchor assembly test method used.

(v) Detailed drawings including all dimensions of the ground anchor assembly and its components.

(vi) Method of installation at the test site.

(vii) Date of installation and date of testing.

(viii) Location of the certification test site.

(ix) Test equipment used.

(x) For each anchor specimen tested: For each load increment the load in pounds and resultant displacements in inches in chart or graph form.

(xi) The working load design value and ultimate anchor load determined in accordance with paragraph (b)(10) of this section.

(xii) If required, a description of the stabilizer plate used in each ground anchor assembly/stabilizer plate test, including the name of the manufacturer.

(xiii) Angle(s) of pull for which the anchor has been tested.

(xiv) Embedment depth of the ground anchor assembly.

(xv) The application and orientation of the applied load.

(xvi) A description of the mode and location of failure for each ground anchor assembly tested.

(xvii) Name and signature of the nationally recognized testing agency or registered professional engineer certifying the testing and evaluation.

(xviii) The soil classification(s) for which each ground anchor assembly is certified for use and the working load design value and minimum ultimate load capacity for those soil classification(s).

(12) *Approved ground anchor assemblies.* Each ground anchor manufacturer or producer must provide the following information for use of approved ground anchor assemblies and this information must also be included in the listing or certification for each ground anchor assembly:

(i) Drawings showing ground anchor installation.

(ii) Specifications for the ground anchor assembly including:

(A) Soils classifications listed or certified for use;

(B) The working load and minimum ultimate anchor load capacity for the anchor assembly in the soil classification(s) it is listed or certified for use;

(C) Model number and its location on the anchor;

(D) Instructions for use, including pre-tensioning;

(E) Angle(s) of pull for which the anchor has been listed and certified; and

(F) Manufacturer, size and type of stabilizer plate required.

* * * * *

Appendix to § 3285.402

Torque Probe Method for determining soil classification: This kit contains a 5-foot long steel earth-probe rod, with a helix at the end. It resembles a wood-boring bit on a larger scale. The tip of the probe is inserted as deep as the bottom helix of the ground anchor assembly that is being considered for installation. The torque wrench is placed on the top of the probe. The torque wrench is used to rotate the probe steadily so one can read the scale on the wrench. If the torque wrench reads 551 inch-pounds or greater, then a Class 2 soil is present according to the Table to 24 CFR 3285.202(a)(3). A Class 3 soil is from 351 to 550 inch-pounds. A Class 4A soil is from 276 to 350 inch-pounds, and a Class 4B soil is from 175 to 275 inch-pounds. When the torque wrench reading is below 175 inch-pounds, a professional engineer should be consulted.

PART 3286—MANUFACTURED HOME INSTALLATION PROGRAM

■ 4. The authority citation for part 3286 continues to read as follows:

Authority: 42 U.S.C. 3535(d), 5404, and 5424.

■ 5. Revise § 3286.505(e) to read as follows:

§ 3286.505 Minimum elements to be inspected.

* * * * *

(e) Anchorage including verification that the ground anchors have been installed in accordance with the manufacturer's instructions, in a soil classification permitted by the anchor listing or certification, with the required size and type of stabilizer plate, if required by the listing or certification, and at an orientation and angle of pull permitted by its listing or certification.

* * * * *

Dated: August 12, 2014.

Carol J. Galante,

Assistant Secretary for Housing—Federal Housing Commissioner.

[FR Doc. 2014–21431 Filed 9–9–14; 8:45 am]

BILLING CODE 4210–67–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

44 CFR Part 64

[Docket ID FEMA–2014–0002; Internal Agency Docket No. FEMA–8349]

Suspension of Community Eligibility

AGENCY: Federal Emergency Management Agency, DHS.

ACTION: Final rule.

SUMMARY: This rule identifies communities where the sale of flood insurance has been authorized under the National Flood Insurance Program (NFIP) that are scheduled for suspension on the effective dates listed within this rule because of noncompliance with the floodplain management requirements of the program. If the Federal Emergency Management Agency (FEMA) receives documentation that the community has adopted the required floodplain management measures prior to the effective suspension date given in this rule, the suspension will not occur and a notice of this will be provided by publication in the **Federal Register** on a subsequent date. Also, information identifying the current participation status of a community can be obtained from FEMA's Community Status Book (CSB). The CSB is available at *http://www.fema.gov/fema/csb.shtm.*

DATES: *Effective Dates:* The effective date of each community's scheduled suspension is the third date (''Susp.'') listed in the third column of the following tables.

FOR FURTHER INFORMATION CONTACT: If you want to determine whether a particular community was suspended on the suspension date or for further information, contact David Stearrett, Federal Insurance and Mitigation Administration, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472, (202) 646–2953.

SUPPLEMENTARY INFORMATION: The NFIP enables property owners to purchase Federal flood insurance that is not otherwise generally available from private insurers. In return, communities agree to adopt and administer local floodplain management measures aimed at protecting lives and new construction from future flooding. Section 1315 of the National Flood Insurance Act of 1968, as amended, 42 U.S.C. 4022, prohibits the sale of NFIP flood insurance unless an appropriate public body adopts adequate floodplain management measures with effective enforcement measures. The communities listed in this document no longer meet that statutory requirement for compliance with program regulations, 44 CFR Part 59. Accordingly, the communities will be suspended on the effective date in the third column. As of that date, flood insurance will no longer be available in the community. We recognize that some of these communities may adopt and submit the required documentation of legally enforceable floodplain management measures after this rule is published but prior to the actual suspension date. These communities will not be suspended and will continue to be eligible for the sale of NFIP flood insurance. A notice withdrawing the suspension of such communities will be published in the **Federal Register**.

In addition, FEMA publishes a Flood Insurance Rate Map (FIRM) that identifies the Special Flood Hazard Areas (SFHAs) in these communities. The date of the FIRM, if one has been published, is indicated in the fourth column of the table. No direct Federal financial assistance (except assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act not in connection with a flood) may be provided for construction or acquisition of buildings in identified SFHAs for communities not participating in the NFIP and identified for more than a year on FEMA's initial FIRM for the community as having flood-prone areas (section 202(a) of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4106(a), as amended). This prohibition against certain types of

Federal assistance becomes effective for the communities listed on the date shown in the last column. The Administrator finds that notice and public comment procedures under 5 U.S.C. 553(b), are impracticable and unnecessary because communities listed in this final rule have been adequately notified.

Each community receives 6-month, 90-day, and 30-day notification letters addressed to the Chief Executive Officer stating that the community will be suspended unless the required floodplain management measures are met prior to the effective suspension date. Since these notifications were made, this final rule may take effect within less than 30 days.

National Environmental Policy Act. This rule is categorically excluded from the requirements of 44 CFR Part 10, Environmental Considerations. No environmental impact assessment has been prepared.

Regulatory Flexibility Act. The Administrator has determined that this rule is exempt from the requirements of the Regulatory Flexibility Act because the National Flood Insurance Act of 1968, as amended, Section 1315, 42 U.S.C. 4022, prohibits flood insurance coverage unless an appropriate public body adopts adequate floodplain management measures with effective enforcement measures. The communities listed no longer comply with the statutory requirements, and after the effective date, flood insurance will no longer be available in the communities unless remedial action takes place.

Regulatory Classification. This final rule is not a significant regulatory action under the criteria of section 3(f) of Executive Order 12866 of September 30, 1993, Regulatory Planning and Review, 58 FR 51735.

Executive Order 13132, Federalism. This rule involves no policies that have federalism implications under Executive Order 13132.

Executive Order 12988, Civil Justice Reform. This rule meets the applicable standards of Executive Order 12988.

Paperwork Reduction Act. This rule does not involve any collection of information for purposes of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*

List of Subjects in 44 CFR Part 64

Flood insurance, Floodplains.

Accordingly, 44 CFR Part 64 is amended as follows:

PART 64—[AMENDED]

■ 1. The authority citation for Part 64 continues to read as follows:

Authority: 42 U.S.C. 4001 *et seq.;* Reorganization Plan No. 3 of 1978, 3 CFR, 1978 Comp.; p. 329; E.O. 12127, 44 FR 19367, 3 CFR, 1979 Comp.; p. 376.

§ 64.6 [Amended]

■ 2. The tables published under the authority of § 64.6 are amended as follows:

State and location	Community No.	Effective date authorization/cancellation of sale of flood insurance in community	Current effective map date	Date certain Federal assistance no longer available in SFHAs
Region III				
Virginia:				
Irvington, Town of, Lancaster County	510221	August 18, 1975, Emerg; August 4, 1987, Reg; October 2, 2014, Susp.	October 2, 2014	October 2, 2014
Kilmarnock, Town of, Lancaster County	510280	July 27, 2010, Emerg; September 17, 2010, Reg; October 2, 2014, Susp.	.....*do	Do.
Lancaster County, Unincorporated Areas	510084	November 27, 1973, Emerg; March 4, 1988, Reg; October 2, 2014, Susp.	.....do	Do.
White Stone, Town of, Lancaster County	510235	August 18, 1975, Emerg; September 24, 1984, Reg; October 2, 2014, Susp.	.....do	Do.
Region IV				
Alabama:				
Athens, City of, Limestone County	010146	April 11, 1974, Emerg; September 28, 1979, Reg; October 2, 2014, Susp.	.....do	Do.
Carbon Hill, City of, Walker County	010204	May 18, 1977, Emerg; March 16, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Cordova, City of, Walker County	010205	July 25, 1975, Emerg; March 16, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Dora, City of, Walker County	010381	March 20, 1992, Emerg; August 2, 2007, Reg; October 2, 2014, Susp.	.....do	Do.
Gurley, Town of, Madison County	010152	February 12, 1991, Emerg; March 1, 1995, Reg; October 2, 2014, Susp.	.....do	Do.
Huntsville, City of, Limestone and Madison Counties.	010153	March 8, 1974, Emerg; November 1, 1979, Reg; October 2, 2014, Susp.	.....do	Do.
Jasper, City of, Walker County	010206	January 21, 1975, Emerg; June 15, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Kansas, Town of, Walker County	010390	N/A, Emerg; September 9, 2010, Reg; October 2, 2014, Susp.	.....do	Do.
Limestone County, Unincorporated Areas	010307	September 2, 1975, Emerg; July 16, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Madison, City of, Limestone and Madison Counties.	010308	July 23, 1975, Emerg; December 15, 1978, Reg; October 2, 2014, Susp.	.....do	Do.
Madison County, Unincorporated Areas	010151	August 26, 1974, Emerg; July 2, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Mooresville, Town of, Limestone County	010455	December 23, 2008, Emerg; September 21, 2010, Reg; October 2, 2014, Susp.	.....do	Do.
New Hope, Town of, Madison County	010154	August 7, 1975, Emerg; November 24, 1978, Reg; October 2, 2014, Susp.	.....do	Do.

State and location	Community No.	Effective date authorization/cancellation of sale of flood insurance in community	Current effective map date	Date certain Federal assistance no longer available in SFHAs
Oakman, Town of, Walker County	010299	January 12, 1976, Emerg; March 14, 1980, Reg; October 2, 2014, Susp.	.....do	Do.
Owens Cross Roads, Town of, Madison County.	010218	August 6, 1974, Emerg; March 2, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Parrish, Town of, Walker County	010298	January 16, 1976, Emerg; May 30, 1980, Reg; October 2, 2014, Susp.	.....do	Do.
Triana, Town of, Madison County	010155	July 21, 1980, Emerg; September 29, 1986, Reg; October 2, 2014, Susp.	.....do	Do.
Walker County, Unincorporated Areas	010301	July 2, 1979, Emerg; July 5, 1982, Reg; October 2, 2014, Susp.	.....do	Do.
Region V				
Illinois:				
Carrier Mills, Village of, Saline County	170786	October 27, 1977, Emerg; July 3, 1985, Reg; October 2, 2014, Susp.	.....do	Do.
Eldorado, City of, Saline County	170596	N/A, Emerg; March 16, 2012, Reg; October 2, 2014, Susp.	.....do	Do.
Harrisburg, City of, Saline County	170598	N/A, Emerg; May 12, 2008, Reg; October 2, 2014, Susp.	.....do	Do.
Muddy, Village of, Saline County	170599	July 10, 1975, Emerg; December 5, 1989, Reg; October 2, 2014, Susp.	.....do	Do.
Saline County, Unincorporated Areas	170988	N/A, Emerg; January 6, 2009, Reg; October 2, 2014, Susp.	.....do	Do.
Indiana: Brooklyn, Town of, Morgan County.	180402	November 19, 1975, Emerg; September 17, 1980, Reg; October 2, 2014, Susp.	.....do	Do.
Loogootee, City of, Martin County	180165	April 18, 1975, Emerg; September 1, 1986, Reg; October 2, 2014, Susp.	.....do	Do.
Martin County, Unincorporated Areas	180479	July 3, 1990, Emerg; July 1, 1991, Reg; October 2, 2014, Susp.	.....do	Do.
Martinsville, City of, Morgan County	180177	April 2, 1975, Emerg; December 4, 1979, Reg; October 2, 2014, Susp.	.....do	Do.
Mooresville, Town of, Morgan County	180334	June 4, 1975, Emerg; September 5, 1979, Reg; October 2, 2014, Susp.	.....do	Do.
Morgan County, Unincorporated Areas	180176	May 27, 1981, Emerg; June 1, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Morgantown, Town of, Morgan County	180178	March 22, 1976, Emerg; May 25, 1978, Reg; October 2, 2014, Susp.	.....do	Do.
Paragon, Town of, Morgan County	180338	N/A, Emerg; December 10, 2008, Reg; October 2, 2014, Susp.	.....do	Do.
Michigan:				
Ash, Township of, Monroe County	260141	September 18, 1975, Emerg; November 3, 1982, Reg; October 2, 2014, Susp.	.....do	Do.
Bedford, Township of, Monroe County	260142	October 8, 1975, Emerg; November 4, 1981, Reg; October 2, 2014, Susp.	.....do	Do.
Berlin, Charter Township of, Monroe County.	260143	March 9, 1973, Emerg; November 3, 1982, Reg; October 2, 2014, Susp.	.....do	Do.
Dundee, Township of, Monroe County	260144	April 29, 1975, Emerg; April 18, 1983, Reg; October 2, 2014, Susp.	.....do	Do.
Dundee, Village of, Monroe County	260313	March 10, 1975, Emerg; July 19, 1982, Reg; October 2, 2014, Susp.	.....do	Do.
Erie, Township of, Monroe County	260145	January 26, 1973, Emerg; September 1, 1978, Reg; October 2, 2014, Susp.	.....do	Do.
Estral Beach, Village of, Monroe County	260261	March 30, 1973, Emerg; November 2, 1983, Reg; October 2, 2014, Susp.	.....do	Do.
Frenchtown, Charter Township of, Monroe County.	260146	January 19, 1973, Emerg; January 19, 1978, Reg; October 2, 2014, Susp.	.....do	Do.
Ida, Township of, Monroe County	260147	August 20, 1975, Emerg; January 21, 1983, Reg; October 2, 2014, Susp.	.....do	Do.
LaSalle, Township of, Monroe County	260148	February 9, 1973, Emerg; August 15, 1977, Reg; October 2, 2014, Susp.	.....do	Do.
London, Township of, Monroe County	260149	N/A, Emerg; September 6, 2002, Reg; October 2, 2014, Susp.	.....do	Do.
Luna Pier, City of, Monroe County	260150	January 26, 1973, Emerg; June 1, 1982, Reg; October 2, 2014, Susp.	.....do	Do.
Milan, Township of, Monroe County	260152	October 2, 1975, Emerg; December 15, 1982, Reg; October 2, 2014, Susp.	.....do	Do.
Monroe, Charter Township of, Monroe County.	260154	February 2, 1973, Emerg; April 3, 1978, Reg; October 2, 2014, Susp.	.....do	Do.
Monroe, City of, Monroe County	260153	December 29, 1972, Emerg; June 15, 1977, Reg; October 2, 2014, Susp.	.....do	Do.
Petersburg, City of, Monroe County	260288	July 11, 1975, Emerg; June 25, 1976, Reg; October 2, 2014, Susp.	.....do	Do.

State and location	Community No.	Effective date authorization/cancellation of sale of flood insurance in community	Current effective map date	Date certain Federal assistance no longer available in SFHAs
Raisinville, Township of, Monroe County ..	260155	August 18, 1975, Emerg; August 2, 1982, Reg; October 2, 2014, Susp.	.....do	Do.
South Rockwood, Village of, Monroe County.	260320	September 5, 1975, Emerg; May 2, 1983, Reg; October 2, 2014, Susp.	.....do	Do.
Summerfield, Township of, Monroe County.	260156	June 23, 1975, Emerg; September 18, 1985, Reg; October 2, 2014, Susp.	.....do	Do.
Whiteford, Township of, Monroe County ...	260157	June 30, 1975, Emerg; April 1, 1981, Reg; October 2, 2014, Susp.	.....do	Do.

*-do- =Ditto.
Code for reading third column: Emerg.—Emergency; Reg.—Regular; Susp.—Suspension.

Dated: August 20, 2014.

David L. Miller,

Associate Administrator, Federal Insurance and Mitigation Administration, Department of Homeland Security, Federal Emergency Management Agency.

[FR Doc. 2014–21550 Filed 9–9–14; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

46 CFR Parts 2, 24, 25, 30, 70, 90, and 188

[Docket No. USCG–2012–0919]

RIN 1625–AB83

Lifesaving Devices—Uninspected Commercial Barges and Sailing Vessels

AGENCY: Coast Guard, DHS.

ACTION: Final rule.

SUMMARY: The Coast Guard is aligning its regulations with the 2010 Coast Guard Authorization Act. Before 2010, certain uninspected commercial vessels including barges and sailing vessels fell outside the scope of the statute requiring the Coast Guard to regulate lifesaving devices on uninspected vessels. Lifesaving devices were required on such uninspected commercial vessels only if they carried passengers for hire. The 2010 Act brought all uninspected commercial vessels within the scope of the statutory requirement to carry lifesaving devices even if they carry no passengers for hire. The effect of the 2010 Act was to bring, for the first time, uninspected non-passenger commercial barges and sailing vessels within the scope of the lifesaving devices requirement. The Coast Guard is now requiring the use of wearable personal flotation devices for individuals on board those vessels, and amending several regulatory tables to reflect that requirement. This rulemaking promotes the Coast Guard's marine safety mission.

DATES: This final rule is effective October 10, 2014.

ADDRESSES: Comments and material received from the public, as well as documents mentioned in this preamble as being available in the docket, are part of docket USCG–2012–0919 and are available for inspection or copying at the Docket Management Facility (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find this docket on the Internet by going to *http://www.regulations.gov,* inserting USCG–2012–0919 in the ''Keyword'' box, and then clicking ''Search.''

FOR FURTHER INFORMATION CONTACT: For information about this document, call or email Mr. Martin Jackson, Office of Design and Engineering Standards, Lifesaving and Fire Safety Division (CG–ENG–4), Coast Guard; telephone 202–372–1391, email *Martin.L.Jackson@uscg.mil.* For information about viewing or submitting material to the docket, call Ms. Cheryl Collins, Program Manager, Docket Operations, telephone 202–366–9826, toll free 1–800–647–5527.

SUPPLEMENTARY INFORMATION:

Table of Contents for Preamble

I. Abbreviations
II. Background
III. Discussion of Comments
IV Discussion of the Rule
V. Regulatory Analyses
A. Regulatory Planning and Review
B. Small Entities
C. Assistance for Small Entities
D. Collection of Information
E. Federalism
F. Unfunded Mandates Reform Act
G. Taking of Private Property
H. Civil Justice Reform
I. Protection of Children
J. Indian Tribal Governments
K. Energy Effects
L. Technical Standards
M. Environment

I. Abbreviations

CFR Code of Federal Regulations
E.O. Executive Order
FR **Federal Register**
MISLE Marine Information for Safety and Law Enforcement
NPRM Notice of proposed rulemaking
OSHA Occupational Safety and Health Administration
PFD Personal flotation device
Pub. L. Public Law
§ Section symbol
The Act 2010 Coast Guard Authorization Act
U.S.C. United States Code

II. Background

Sections 2103 and 4102 of title 46, United States Code (U.S.C.), provide the legal basis for this rule. Section 2103 gives the Secretary of the department in which the Coast Guard is operating general regulatory authority to carry out the provisions of 46 U.S.C. Subtitle II (''Vessels and Seamen''). Section 4102(b) [1] requires the Secretary to ''prescribe regulations requiring the installation, maintenance, and use of life preservers and other lifesaving devices for individuals on board uninspected vessels.'' The Secretary of Homeland Security's authority under 46 U.S.C. 2103 and 4102 is delegated to the Coast Guard.[2]

The uninspected vessels to which section 4102(b) applies are not subject to inspection under 46 U.S.C. 3301 and are not recreational vessels.[3] Until passage of the 2010 Coast Guard Authorization Act (''the Act''), section 4102(b) applied only to uninspected vessels ''propelled by machinery,'' and thus excluded certain uninspected commercial vessels including most

[1] As amended by section 619 of the 2010 Coast Guard Authorization Act, Pub. L. 111–281, 124 Stat. 2905.

[2] DHS Delegation No. 0170.1(II)(92)(a), (92)(b).

[3] *See* 46 U.S.C. 2101(25) and (43) for the definitions of ''recreational vessel'' and ''uninspected vessel.''

barges and some sailing vessels unless they carried passengers for hire.[4] Current Coast Guard regulations that implement section 4102(b) reflect the ''propelled by machinery'' requirement and therefore specifically exempt those excluded barges and sailing vessels.[5]

The purpose of the rule is to implement 46 U.S.C. 4102(b) as amended by the Act. The Act deleted the requirement in section 4102(b) that vessels be propelled by machinery. As amended, section 4102(b) now requires all non-recreational uninspected vessels, regardless of vessel type or mode of propulsion, to make an appropriate form of lifesaving device available for the use of individuals on board the vessel. The types and numbers of devices appropriate for each type of vessel are left to the Coast Guard's discretion, as are the requirements for installing, maintaining, and using those devices.

III. Discussion of Comments and Changes

Our 2013 notice of proposed rulemaking (NPRM)[6] drew comments from 11 sources: 4 from the barge industry, 1 industry worker, 1 industry association, 1 association representing workers,[7] and 4 individuals who did not indicate their affiliations, if any. We have revised the regulatory text of this final rule in response to some of the comments.

Public meetings. One industry commenter said that changing the regulations in a way that might make sense for its operations might ''be incorrect'' for another operator, and that therefore we should hold public meetings in which members of the public could discuss how best to change the regulations. In our view, it was not necessary to hold public meetings because the NPRM proposed regulatory text that would accommodate the circumstances of different industry segments.

Vessels we overlooked. Two individuals said our proposals exclude some vessel types that should be covered. The first commenter said that the congressional intention in deleting ''propelled by machinery'' from 46 U.S.C. 4102(b) was to ''create parity for all uninspected vessels—both recreational and commercial—with regard to lifesaving equipment requirements.'' This commenter said that Table 24.05–1(a) in our existing 46 CFR regulations misleadingly implies that the only ''non-self-propelled vessels < 100 gross tons'' covered by 46 CFR chapter I, subchapter C are ''barges carrying passengers or passengers-for-hire'' that are not also subject to inspection as 46 CFR chapter I, subchapter H, K, or T passenger vessels. The commenter said that other non-self-propelled vessels under 100 gross tons must also be subject to subchapter C, and thus subject to lifesaving equipment requirements: for example, dredges, non-self-propelled workboats, and rowed skiffs and tenders. Finally, the commenter informed us of a Vermont-based sailing vessel that has recently entered commercial service and should be covered under the proposed rule. Likewise, the second commenter mentioned vessels dredging for oysters in Maryland waters as examples of commercial sailing vessels that we had overlooked.

We acknowledge that the NPRM stressed its applicability to barges and sailing vessels. However, the NPRM's proposed regulatory language clearly applied to any vessel that is subject to 46 CFR chapter I, subchapter C. As explained in Table 24.05–1(a), subchapter C applies to all uninspected motor vessels, non-self-propelled vessels, sailing vessels, and steam vessels. Skiffs and other motorized vessels are non-exempt under subchapter C. Our population analysis includes any non-self-propelled vessel in our database records that was previously exempt and is now affected by this final rule, which includes unmanned, non-self propelled dredges. Oyster dredges, if in commercial use, are commercial fishing vessels that are already subject to the personal flotation device (PFD) requirements of 46 CFR 28.110. We did, however, add the Vermont-based sailing vessel to our population analysis, although it is already in compliance with the proposed requirements.

Wearing PFDs on barges. Two industry commenters, the industry worker, the industry association, the association representing workers, and two individuals addressed our proposed requirement for wearing PFDs on board a barge. The industry worker estimated that only a small percentage of tankermen on oil and petroleum barges wear PFDs, and said it was time to require PFD use. The worker association and one individual also endorsed our proposed requirement. One industry commenter endorsed wearing a PFD ''where there is a risk of falling overboard.'' The industry commenters, the industry association, and the second individual provided examples of when wearing a PFD would not be necessary to protect a person's safety on board a barge: for example, while in an office or shop facility on the barge, while working in a barge hopper, or when walls or stanchions protect a worker from falling overboard from a moored barge. The association representing workers acknowledged the second individual's comment, and seemed to imply that a watch officer could use his or her discretion to determine under what conditions wearing a PFD would be necessary. The worker association also specified that the type of PFD we should require is the work vest ''commonly used on barges'' and ''worn properly to be useful as a piece [of] personal protective gear.''

We agree that workers in enclosed spaces on barges, or who are otherwise protected by the barge's configuration from falling overboard, do not need to wear PFDs to ensure their safety, and we have revised 46 CFR 25.25–9(c) to require the wearing of a PFD only while a worker is on board a barge and at risk of falling overboard. The proposed regulatory language permits the use of ''commonly used'' PFDs on barges, including work vests that are approved by the Coast Guard, and we include this provision in the final rule.

PFD storage. Three industry commenters and the industry association commented on our proposal to allow PFDs for use on a barge to be stored elsewhere than on the barge itself, for example on the barge's towboat. Two of the industry commenters endorsed this proposal. Two industry commenters and the industry association suggested changing our proposed regulatory language, to make the regulations easier to understand. They suggested, in proposed 46 CFR 25.25–5(b), striking ''which must comply with paragraph (b)(1) of this section or make substitutions authorized by paragraph (c) of this section.'' They also suggested rewriting proposed 46 CFR 25.25–9(c) so that PFD storage would be required only when PFD use is needed to ensure worker safety.

We agree with these commenters. We made the suggested change in § 25.25–5(b), but went beyond that to remove the introductory language altogether, lest it inadvertently serve to exempt all barges from the requirements of § 25.25–5. To ensure consistency, we also revised § 25.25–5(b)(3), to make it clear that barges are exempt from that paragraph's lifebuoy requirements. We have revised § 25.25–9(c) to require the wearing of a PFD only while a worker is on board a barge and at risk of falling overboard.

[4] Vessels carrying passengers for hire are inspected vessels covered by 46 U.S.C. 3301.

[5] *See* 46 CFR 25.25–1(c), (d).

[6] 78 FR 42739 (Jul. 17, 2013).

[7] The association representing workers made two submissions to the docket.

Operator responsibility. Four industry commenters, the industry association, and the worker association commented on our proposal to make the barge operator responsible for ensuring compliance, in particular with the proposed requirement to wear a PFD on board a barge. All five commenters agreed that placing this responsibility on the barge operator would create ambiguity. Two of the industry commenters and the industry association said that ''barge operator'' could refer to ''the barge owner, the operator of an attending vessel, or even a fleet or dock worker.'' The worker association said that the barge operator might not be in a position to ensure that the device is donned properly or worn at all times. The worker association suggested that the officer in charge of the watch would be the proper person to carry those responsibilities. The four industry commenters pointed out that personnel representing many different operators might be on board a barge at any given time, and that the only effective way to enforce the proper wear of PFDs on board the barge would be make each individual's employer responsible for ensuring compliance.

We understand that the identity of the ''barge operator'' may change over time depending on the barge's operation at any given moment and that the key is to determine who controls access to the barge at the moment. When the barge's owner controls that access, the owner is also the operator; if it is the master of another company's tow that controls access, that master is the operator; and if the barge is being fleeted and access is controlled by the dock master, the dock master is the operator for purposes of these regulations.

Throwable devices. The worker association and one individual commented on devices that can be thrown to a person overboard, to assist in the person's rescue. The individual said ''there are many instances where barges could be equipped with a throwable (Type IV) device that is readily accessible in the event that a crewmember or other individual falls in the water.'' The worker association said we should require a barge to carry a throwable device if there are occasions when two or more persons are on board, and recommended a trademarked model of lifebuoy that is equipped with a 100-foot lifeline because of its superiority as an effective rescue tool.

We recommend the use of throwable devices when two or more persons are on a barge, but we will not require that use at this time. Our emphasis in this final rule is on wearable *personal* devices. Developing requirements for throwable devices is outside the scope of this rulemaking.

Occupational Safety and Health Administration (OSHA) regulations. The worker association recommended that Coast Guard follow OSHA's example in certain areas. The recommendations included determining whether towboats should be required to carry lifesaving skiffs (as ''many of them already do''), requiring a lifebuoy to be equipped with at least 90 feet of retrievable line, and adopting a regulation for working over or near water that would be similar to OSHA requirements.[8]

We recommend the carriage of lifesaving skiffs and lifebuoys on vessels where that carriage makes sense, but we will not require it at this time. Our emphasis in this final rule is on wearable *personal* devices. Developing requirements for skiffs and lifebuoys is outside the scope of this rulemaking.

Economic data and analysis. The worker association and one individual commented on our economic data and analysis. The association questioned our estimate that 35,568 barges would be subject to our proposed regulations, and commented that although our proposals seem to carry low cost, they also would do nothing to improve safety on uninspected barges. The individual was disturbed by our data, indicating that out of 40 casualties we examined, only one casualty was not wearing a life preserver/PFD; he said that before changing any regulations, we should determine why so many individuals died despite wearing a life preserver/PFD.

Based on comments regarding the population, we re-evaluated the affected population and determined that an estimated 62,240 vessels are affected by this rule. We made this determination by removing a filter for ''uninspected'' vessels, as some barges may not be listed as uninspected.

As for the casualty data, it is important to keep in mind, when consulting our data, that they are limited to the statistics we collect when investigating actual injuries and deaths. The data do not reflect the many near misses that have occurred to people who fell overboard without a life preserver/PFD and fortunately survived without major injury.

Beyond scope. The worker association made three comments that we consider to be beyond the scope of this rulemaking, and we have not reflected these comments in our revisions to regulatory text. In each of this commenter's two submissions to the docket, the submission included copies of articles or previous comments relating to a variety of maritime safety considerations. These were not presented in the context of this specific rulemaking and did not indicate the relevance of this material to other specific comments made by the association. The third comment was that the safety needs of persons working below deck on uninspected barges, ''in confined spaces to pump, plug holes, inspect, etc.'' need attention by the Coast Guard. Persons in confined work spaces in shipyards are subject to OSHA regulations.[9]

IV. Discussion of the Rule

The Coast Guard is amending 46 CFR subpart 25.25, which concerns life preservers and other lifesaving equipment on uninspected commercial vessels.

Section 25.25–1 exempts certain types of vessels from subpart 25.25. Paragraphs (a) and (b) of the section exempt non-commercial vessels and vessels leased, rented, or chartered to another for that person's non-commercial use. Paragraphs (c) and (d) exempted uninspected commercial sailing vessels and barges that do not carry passengers for hire. Paragraphs (c) and (d) reflected the pre-2010 inclusion of the ''propelled by machinery'' condition in 46 U.S.C. 4102(b). Because section 4102(b) now mandates the Coast Guard to require some form of lifesaving devices on uninspected commercial vessels even if they do not carry passengers for hire, irrespective of propulsion, we are removing 46 CFR 25.25–1(c) and (d).

We are amending the definitions in 46 CFR 25.25–3 by adding a definition for ''approval series,'' a term we use elsewhere in the subpart to describe equipment requirements.

We are amending 46 CFR 25.25–5, revising current paragraphs (b) through (f) to eliminate references to equipment specifications that have become obsolete or that have lost their Coast Guard-approved status since this section was last amended in 2002. Although the regulatory text omits the language of current § 25.25–5(f)(3), requiring Type V commercial hybrid PFDs approved under approval series 160.077 to be worn when a vessel is underway and the intended wearer is not within an enclosed space, the substance of that provision is covered by the requirement in § 25.25–5(c)(2)(i) for approved commercial hybrid PFDs to be used in accordance with the conditions marked on the PFD and in the owner's manual. All Coast Guard-approved Type V

[8] *See* 29 CFR 1926.106.

[9] *See* 29 CFR part 1915, subpart B.

hybrid PFDs are labeled with, and their user manuals refer to, the conditions contained in current § 25.25–5(f)(3). Otherwise, the requirements currently found in § 25.25–5(b) through (f) are not substantively changed, but are incorporated into revised § 25.25–5(b) and (c). As revised, § 25.25–5 requires the operator of each vessel to which subpart 25.25 applies to provide some form of wearable PFD, or an immersion suit, for individuals on board. Except for barges, vessels longer than 26 feet must also be equipped with lifebuoys. Lifebuoys typically are mounted on stanchions. Given the configuration of some barges, installation of a lifebuoy stanchion could unreasonably interfere with operations, and because often only one individual is on board a barge at any given time, should that individual fall overboard there would be no one available to throw the lifebuoy to the individual.

We are amending 46 CFR 25.25–9 to allow PFDs for barge personnel to be stowed remotely rather than on the barge itself, and to require barge operators to ensure that PFDs are worn by individuals while they are on board a barge and at risk of falling overboard. In addition, this requirement could be met by donning a work vest approved under approval series 160.053, routinely used by personnel on barges. This is consistent with current industry practice. Typically, barge operators stow PFDs on the barge's towboat, and require crew members to don PFDs before they go aboard a barge and to wear them while on board. Allowing this not only increases safety but also does so at a lower cost relative to the lifebuoy and barge stowage options.

We are amending tables in 46 CFR 2.01–7, 24.05–1, 30.01–5, 70.05–1, 90.05–1, and 188.05–1. These tables describe the applicable Coast Guard regulations for different vessel types, and are being revised to remove references to the 46 CFR 25.25–1(c) and (d) exemptions that we are also removing.

Finally, we are revising the authority lines for each part affected by this rule, to ensure that each authority line cites the Secretary of DHS's general regulatory authority (delegated to the Coast Guard) to implement 46 U.S.C. Subtitle II, Vessels and Seamen.

V. Regulatory Analyses

We developed this rule after considering numerous statutes and executive orders (E.O.s) related to rulemaking. Below we summarize our analyses based on these statutes or E.O.s.

A. Regulatory Planning and Review

E.O.s 12866 (''Regulatory Planning and Review'') and 13563 (''Improving Regulation and Regulatory Review'') direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). E.O. 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility.

This rule is not a significant regulatory action under section 3(f) of E.O. 12866, as supplemented by E.O. 13563, and does not require an assessment of potential costs and benefits under section 6(a)(3) of that Order. The Office of Management and Budget (OMB) has not reviewed it under that Order. Nonetheless, we developed an analysis of the costs and benefits of the rule to ascertain its probable impacts on industry.

A final regulatory assessment follows:

As described in section II (Background) of this final rule, 46 U.S.C. 4102(b), as amended by the Act, now makes all previously exempt uninspected commercial barges and sailing vessels subject to Coast Guard regulation for the installation, maintenance, and use of life preservers and other lifesaving devices for individuals on board. The Act removed language that formerly limited the applicability of section 4102(b) to vessels ''propelled by machinery,'' which effectively kept most commercial barges, which are not self-propelled by machinery, as well as commercial sailing vessels, outside the scope of section 4102(b). At this time, we are aware of only one uninspected commercial sailing vessel not carrying passengers for hire currently in service (the Vermont vessel brought to our attention by a public comment) but we determined that it has an auxiliary motor and therefore can be self-propelled by machinery. That vessel has PFDs stored on board. Thus the data on which the rest of this discussion is based relate exclusively to uninspected commercial barges not carrying passengers for hire.

As amended, 46 CFR 25.25–5(b) requires operators of affected vessels to store and maintain at least one PFD for each person on board a barge.[10] In lieu of storing a PFD for each individual on board a barge, PFDs can be stored and maintained on another vessel so long as crewmembers wear the PFDs while on board the barge when they are at risk of falling overboard. For instance, uninspected commercial barges not carrying passengers for hire carry low-cost cargos in bulk and generally do not carry individuals on board. However, towing vessel personnel may be on board the barge to perform specific tasks such as securing the barge to other barges or the towing vessel, or providing lookout for the towing vessel.

While some firms that operate barges may also own them, for the purposes of this analysis, we treat barge owners and operators as different entities. We assume that the barge operators would be responsible for the PFDs because they are responsible for the safety of their crews and therefore they would store a sufficient number of PFDs for each crewmember on board the towing vessel. Under 46 CFR 25.25–9(c), a barge operator may comply with § 25.25–5(b) by storing PFDs elsewhere and ensuring that each individual dons the equipment before boarding the barge and keeps it on for as long as the individual remains on board, in lieu of maintaining PFDs on each barge. This would reduce costs by eliminating the need to install storage facilities on each barge, and would enable the typical industry practice of PFDs being worn to be substituted.[11] We also assume that the barge owners would then negotiate the PFD wear conditions with the barge operators. While most barge operators require the wearing of PFDs on board a barge, we received two comments that suggested that there may be a few barges that will store PFDs on board.

We also received one comment that our estimated affected population may be too low. In the NPRM, we had estimated a population of 35,568 barges (including currently inactive and new barges). We revisited the Coast Guard's Marine Information for Safety and Law Enforcement (MISLE) database and estimate that there are 49,150 non-self propelled, uninspected vessels not carrying passengers for hire. We made this determination by removing a filter for ''uninspected'' vessels, as some vessels may not be listed as uninspected. We then included an

[10] While barges may in practice be tied together, there is no exception as to storing a set of lifesaving devices for each barge rather than one per set of barges or around the perimeter of a set of barges. Towing vessels may transport barges from various barge owners and drop them off on a schedule, so having lifebuoys and sets of PFDs on a perimeter of a set of barges may not be feasible.

[11] Based on information from the American Waterways Operators (AWO), we believe that the prevailing practice is that crewmembers wear PFDs while on board a barge.

additional 13,090 vessels to account for currently inactive and new vessels, which increases our overall population to 62,240 vessels. Table 1 summarizes the affected population, costs, and benefits of this rule.

TABLE 1—SUMMARY OF AFFECTED POPULATION, COSTS AND BENEFITS

Category	Description
Applicability	Uninspected commercial vessels. Not propelled by machinery. Not carrying passengers for hire. 62,240 barges. (including new and currently inactive barges) 0 sailing vessels.
Costs	$140,420 10-Year, undiscounted cost.
Benefits (Qualitative)	Improves regulatory efficiency by providing technical updates to the Code of Federal Regulations, aligning them to the U.S. Code and thereby reducing the potential for uncertainty and confusion. Reinforces existing company policy and current industry practice of PFD use.

Affected Population

Based on the Coast Guard's MISLE database, we determined that there are 49,150 uninspected, commercial barges. Table 2 provides the list of barges by type.

TABLE 2—AFFECTED POPULATION BY TYPE

Barge type	NPRM Barges	FR Barges
Covered Dry Bulk	85	191
Covered General Cargo	2	41
Derrick/Crane Barge	2	0
Flat Deck Barge	41	322
General	126	48,004
Open Dry Bulk	156	430
Open General Cargo	15	128
Pontoon Barge		6
Roll-on Roll-off		28
Unspecified	22,050	0
Work Platform	1	0
(blank)		
Subtotal	22,478	49,150
Currently Inactive	4,500	4,500
New	8,590	8,590
Total	35,568	62,240

We took the average number of newbuilds from Informal Economic from years 2006 to 2010 (859 newbuilds annually).[12] Based on information from Coast Guard subject matter experts, we also estimated an additional 450 barges are currently inactive, but could be added to the list of active barges in any given year. The number of newbuilds and currently inactive barges adds 1,309 barges to the population annually.

Cost

The majority of barge operators require the wearing of PFDs while on board the barge because it is a standard industry practice to wear one.[13] In 46 CFR 25.25–5, if a barge operator stores PFDs elsewhere and ensures that each individual dons the equipment before boarding the barge and keeps it on for as long as the individual remains on board, they can use the PFDs stored on the towing vessel in lieu of maintaining a set on each barge. Presumably, a crewmember coming from a towing vessel would wear the PFD that was originally stored on the towing vessel, which discussions with industry show to be standard practice. Since this rule primarily deals with unmanned barges, we assume that the majority of persons on a commercial barge will wear PFDs while on board. However, based on two public comments, there may be a small number of barges that will have PFDs stored on board. As stated by the commenters, these may be for office or shop facilities located on a barge, crane and loader operators working on a barge, or barge cleaners working in the hopper of a barge.

We determined the likelihood of PFDs stored on board a barge by the barge type; covered dry bulk, covered general cargo, and pontoon barges were considered the most likely to stow PFDs on board, due to clear perimeter deck area. Other barges tend to be built with open hoppers and configured such that, when loaded with cargo, quick access to PFDs on board may not be feasible. Based on this information, we estimate that at most 238 barges may need to provide 5 PFDs on board and store them to be readily accessible in a bin ($60).[14] We also took the price of various PFDs and came up with an average cost of $47 per PFD. We estimate the per-vessel cost to be $295 for a set of PFDs and a storage bin (5 * $47 PFDs + $60 storage

[12] ''Barge Fleet Profile'', March 2012, Informal Economics.

[13] Based on information from the American Waterways Operators (AWO), we believe that the prevailing practice is that crewmembers wear PFDs while on board a barge.

[14] Costs range from $20, $40, $120, depending on the type of storage. *http://www.amazon.com/KwikTek-T-Top-storage-holds-PFDs/dp/B0000AY25C, http://www.landfallnavigation.com/-sj110.html, http://www.stowmate.com/shop/pc/Life-Jacket-PFD-Storage-c8.htmhttp://www.stowmate.com/shop/pc/Life-Jacket-PFD-Storage-c8.htm*

bin). At the per-barge rate of $295, we anticipate the first year cost to be $70,210 ($295 * 238 barges.) We assume that all vessels comply in year one. Due to general deterioration, we estimate that the lifespan of a PFD is 5 years; therefore, vessels will need to periodically replace their PFDs. Table 3 provides the 10-year breakdown in cost.

TABLE 3—UNDISCOUNTED COST TO PROVIDE PFDS

Year	Undiscounted	Discount rates	
		7%	3%
Year 1	$70,210	$65,617	$68,165
Year 2	0	0	0
Year 3	0	0	0
Year 4	0	0	0
Year 5	0	0	0
Year 6	70,210	46,784	58,800
Year 7	0	0	0
Year 8	0	0	0
Year 9	0	0	0
Year 10	0	0	0
Total	140,420	112,401	126,965
Annualized	.....	16,003	14,884

Benefits

A benefit of this rule is the improvement in regulatory efficiency by providing technical updates to the Code of Federal Regulations, aligning them to the U.S. Code and thereby reducing the potential for regulatory uncertainty and confusion. Additionally, it reinforces existing company policy and current industry practice with regard to PFD use.

In the NPRM, we reviewed MISLE casualty cases from the years 2003 to 2010 that could have been impacted by this proposed rule. During this time, there were 49 reported casualties involving falls overboard from barges, an average of approximately four casualties a year. We reviewed these cases to see if the individual overboard wore a PFD (or had ready access to one) and whether the availability of such devices could have reduced the risk of death in a fall overboard. Of the casualties that we reviewed, we found only one instance where the individual did not wear a PFD (despite company policy requiring the use of a PFD). The casualty report noted that the failure to wear a PFD was a contributing factor to the fatality. In this case, this proposed regulation may have reinforced existing company policy of PFD use. Since the publication of the NPRM, we reviewed additional MISLE casualty cases (2011 to 2012) for any additional cases related to this rule and did not find any other falls overboard.

Alternatives

We examine four alternatives for this regulation.

Adopted Alternative—Store and maintain enough PFDs for all persons on board. The PFD can be worn in lieu of storage: This alternative was chosen because it meets the statutory requirement at a minimal additional cost. Furthermore, this requirement would be more in line with existing PFD requirements for other vessels and provides regulatory flexibility in the option of storage or wearing of PFDs. Uninspected vessels (such as towing vessels) must store and maintain a sufficient number of PFDs for every individual on board the vessel in accordance with 46 CFR 25.25–5. In lieu of storing PFDs, companies can require individuals to wear a PFD or work vest. Companies have the option of either instituting a policy of wearing PFDs while on board (which discussions with industry and reviews of their casualty data show to be the case on the majority of vessels) or otherwise making PFDs readily accessible. Compared to other listed alternatives, this alternative provides the greatest flexibility and safety, at a minimal cost.

Alternative 1—No action Current industry practice is to require the wearing of PFDs while on board a barge. However, some may not follow that practice and would need to store the PFD on board. Furthermore, the Act directs the Secretary of DHS to carry out specific regulatory actions; therefore if no action is taken, the Coast Guard, having been delegated this rulemaking authority by the Secretary, will not fulfill its Congressional mandate. This will further cause a conflict between U.S. Code and the Code of Federal Regulations, resulting in regulatory uncertainty and confusion.

Alternative 2—Require that all vessels have a ring buoy, and store a sufficient number of PFDs on board. In lieu of storing PFDs, persons can wear PFDs. This alternative is similar to the proposed alternative in that it requires the wearing or storing of PFDs (which we estimate to be no additional cost), but owners would also need to install a ring buoy on board barges at an estimated cost of $267 per vessel (barge) every 5 years.[15] Table 4 provides the breakdown of labor and material costs to install a ring buoy on board a barge.

TABLE 4—COST TO INSTALL A RING BUOY ON A BARGE

Per barge cost	Labor hours (welder)	Wage rate	Ring buoy	Brackets	Stanchion
$267	4	$27	$71	$46	$42

[15] Welder: 4 hours (Coast Guard subject matter expert)*$27 per hour (*http://www.bls.gov/oes/2011/may/oes514121.htm*) * load factor of 1.49. Therefore the welder's loaded wage rate is $27.22 = ($18.23 wage rate * 1.49 load rate).

Table 5 provides the raw material cost to install a ring buoy. The averages of the cost points were used.

TABLE 5—COST SOURCES FOR RING BUOYS

Item	Cost	Source	Date Accessed
Ring buoy (24 inch)	$71.00	Average cost.	
Low	64.99	*http://store.poolcenter.com/ring-buoy—uscg-approved-ring-buoy-24in-diameter-w-rope-p169873.aspx.*	02–Apr–14
High	77.99	*http://www.westmarine.com/webapp/wcs/stores/servlet/Product_11151_10001_39507_-1?cid=chanintel_google&ci_src=14110944&ci_sku=39507.*	02–Apr–14
Brackets	46.00	Average cost. Cost includes 3 brackets for mounting.	
Low	6.99	*http://www.boatbandit.com/ring-buoy-bracket-4344.aspx?gclid=CMukr8D-wb0CFUYV7AodbVAAaQ.*	02–Apr–14
High	23.98	*http://www.rakuten.com/prod/whitecap-ss-ring-buoy-bracket/258723308.html?listingId=335700363&scid=pla_google_elmart&adid=18178&gclid=CK2yqef-wb0CFQ5gMgod5hUAZQ.*	02–Apr–14
Stanchion	42.00	2″ x 2″ of 1/4 inch thickness, 10 feet long	
	42.00	*http://www.discountsteel.com/items/A36_Hot_Rolled_Steel_Equal_Leg_Angle.cfm?item_id=183&size_no=19&sku_no=74&pieceLength=cut&len_ft=8&frmGS=true.*	02–Apr–14

We anticipate that the 10-year undiscounted cost would be $31.6 million for this alternative. This alternative was not chosen because it would cost more and not provide additional benefit as the ring buoy would provide protection redundant to the PFD, and in most cases, there would be no one available to deploy it. We estimate that all existing, new, and currently inactive barges would need to install ring buoys. Table 6 provides the breakdown in population and undiscounted costs by year.

TABLE 6—UNDISCOUNTED COST TO INSTALL RING BUOYS

Year	Population	Replacement	Per vessel cost	Undiscounted cost
Year 1	50459	0	$267	$13,472,553
Year 2	1309	0	267	349,503
Year 3	1309	0	267	349,503
Year 4	1309	0	267	349,503
Year 5	1309	0	267	349,503
Year 6	1309	50459	267	13,822,056
Year 7	1309	1309	267	699,006
Year 8	1309	1309	267	699,006
Year 9	1309	1309	267	699,006
Year 10	1309	1309	267	699,006
Total	62240	55,695		31,488,645

In addition to the cost to install ring buoys, barge owners would also need to provide PFDs. The cost to provide PFDs was illustrated in Table 3, which was $70,210 in years 1 and 6. Table 7 combines the undiscounted cost from Tables 3 and 6, and provides the 10-year breakdown in cost for this final rule. The cost includes the cost to provide PFDs as well as the cost to install ring buoys.

TABLE 7—10-YEAR COST FOR PFDS AND RING BUOYS

Year	Undiscounted	Discount rates	
		7%	3%
Year 1	$13,542,763	$12,656,788	$13,148,314
Year 2	349,503	305,269	329,440
Year 3	349,503	285,299	319,845
Year 4	349,503	266,634	310,529
Year 5	349,503	249,191	301,484
Year 6	13,892,266	9,257,003	11,634,554
Year 7	699,006	435,306	568,356
Year 8	699,006	406,828	551,802
Year 9	699,006	380,213	535,730
Year 10	699,006	355,339	520,126

TABLE 7—10-YEAR COST FOR PFDS AND RING BUOYS—Continued

Year	Undiscounted	Discount rates	
		7%	3%
Total	31,629,065	24,597,870	28,220,179
Annualized		3,502,183	3,308,266

Alternative 3—Require that all vessels have a ring buoy only. This change would have the effect of requiring one ring buoy on board each vessel (barge). The ring buoy would need to be installed (and replaced as needed) at an estimated cost to barge owners of $267 per vessel (barge) every 5 years. At an estimated 62,240 active, inactive, and new barges, we anticipate that this alternative would cost $31.5 million overall, undiscounted. As mentioned above, the ring buoy would provide protection redundant to the PFD, and in most cases, there would be no one available to deploy it. Table 8 provides the undiscounted and discounted costs for this alternative.

TABLE 8—10-YEAR COST TO INSTALL RING BUOYS

Year	Undiscounted	Discount rates	
		7%	3%
Year 1	$13,472,553	$12,591,171	$13,080,149
Year 2	349,503	305,269	329,440
Year 3	349,503	285,299	319,845
Year 4	349,503	266,634	310,529
Year 5	349,503	249,191	301,484
Year 6	13,822,056	9,210,220	11,575,754
Year 7	699,006	435,306	568,356
Year 8	699,006	406,828	551,802
Year 9	699,006	380,213	535,730
Year 10	699,006	355,339	520,126
Total	31,488,645	24,485,469	28,093,215
Annualized		3,486,180	3,293,382

This alternative was not chosen because it would not provide the lowest cost with the maximum benefits.

B. Small Entities

Pursuant to the Regulatory Flexibility Act,[16] we have considered whether this rule would have a significant economic impact on a substantial number of small entities. The term ''small entities'' comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

We conducted a final regulatory flexibility analysis based on the updated population numbers resulting from a comment received in the NPRM. Using those updated population numbers, we can determine there are approximately 2,893 owners of 49,151 barges. From the 2,893 owners, we researched 276 randomly selected small entities to determine if they fell below or exceeded the threshold for a small entity, as determined by the U.S. Small Business Association (SBA). To establish whether an entity was below the threshold or above the threshold, we used the North American Industry Classification System (NAICS) code for each industry and the small entity qualifying definitions for each NAICS code established by the SBA for businesses. The following provides a breakdown of the size determination for the entities:

- 2 Government or non-profit exceeding the threshold
- 0 Government or non-profit below the threshold
- 32 businesses exceeding the threshold
- 94 businesses below the threshold
- 148 unknown and therefore considered small

Based on this analysis, 88 percent of the sample is small entities.

Table 3 provides a description of the most-prevalent NAICS for the small entities.

NAICS	Industry	% of small entities	SBA size threshold (less than threshold small)	SBA size standard type	Number of entities
238910	Site Preparation Contractors	7.45	$15,000,000	Revenue	7
336611	Ship Building and Repairing	7.45	1000	Employees	7
236115	New Single-family Housing Construction (Except For-Sale Builders).	6.38	$36,500,000	Revenue	6
237110	Water and Sewer Line and Related Structures Construction.	5.32	$36,500,000	Revenue	5

[16] 5 U.S.C. 601–612.

NAICS	Industry	% of small entities	SBA size threshold (less than threshold small)	SBA size standard type	Number of entities
441222	Boat Dealers	4.26	$32,500,000	Revenue	4
483211	Inland Water Freight Transportation	4.26	500	Employees	4
488330	Navigational Services to Shipping	4.26	$38,500,000	Revenue	4
236220	Commercial and Institutional Building Construction	3.19	$36,500,000	Revenue	3
237310	Highway, Street, and Bridge Construction	3.19	$36,500,000	Revenue	3
237990	Other Heavy and Civil Engineering Construction	3.19	$36,500,000	Revenue	3
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers.	3.19	100	Employees	3
541330	Engineering Services	3.19	$15,000,000	Revenue	3
	All others	44.68			42
	Total	100			94

Company revenue for businesses below the threshold, as established by the SBA, ranges from $42,000 to $12.5 billion. The per company cost ranges from $295 for one vessel to $6,195 for 21 barges. We anticipate that 99 percent of the affected entities will have an impact of less than 1 percent of revenue. Only one percent will have an impact of between 1 and 3 percent.

Impact range	Number of entities	Percentage
0% ≤ Impact < 1%	93	98.94
1% ≤ Impact < 3%	1	1.06
Impact > 5%	0	0.00
Total	94	

Therefore, the Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities.

C. Assistance for Small Entities

As required by section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996,[17] we offered to assist small entities in understanding this rule so that they could better evaluate its effects on them and participate in the rulemaking. At this time no requests for assistance by small entities have been submitted to the Coast Guard. The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

D. Collection of Information

This rule calls for no new collection of information under the Paperwork Reduction Act of 1995.[18]

E. Federalism

A rule has implications for federalism under E.O. 13132 (''Federalism'') if it has a substantial direct effect on State or local governments and would either preempt State law or impose a substantial direct cost of compliance on them. We have analyzed this rule under E.O. 13132 and have determined that it has the following implications for federalism.

Before passage of the Act, the lifesaving device requirements found in 46 U.S.C. § 4102(b) did not apply to certain uninspected vessels not carrying passengers for hire. By passing the Act, Congress expressly intended existing Coast Guard regulations to apply to these vessels that were previously exempted. Therefore, existing State or local laws or regulations that regulate the ''installation, maintenance, and use of life preservers and other lifesaving devices for individuals on board uninspected vessels'' are preempted, but only insofar as a State or local law or regulation conflicts with the federal regulation.

Given our analysis, the Coast Guard recognizes the key role State and local governments may have in making regulatory determinations. Additionally, Sections 4 and 6 of E.O. 13132 require that for any rules with preemptive effect, the Coast Guard shall provide elected officials of affected State and local governments and their representative national organizations the notice and opportunity for appropriate participation in any rulemaking proceedings, and to consult with such officials early in the rulemaking process. Therefore, we invited affected State and local governments and their representative national organizations to indicate their desire for participation and consultation in this rulemaking process by submitting comments to this notice; no such comments were received.

F. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995[19] requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Though this rule will not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

G. Taking of Private Property

This rule will not cause a taking of private property or otherwise have taking implications under E.O. 12630 (''Governmental Actions and Interference with Constitutionally Protected Property Rights'').

H. Civil Justice Reform

This rule meets applicable standards in sections 3(a) and 3(b)(2) of E.O. 12988

[17] Pub. L. 104–121.

[18] Codified at 44 U.S.C. 3501–3520.

[19] Codified at 2 U.S.C. 1531–1538.

(''Civil Justice Reform''), to minimize litigation, eliminate ambiguity, and reduce burden.

I. Protection of Children

We have analyzed this rule under E.O. 13045 (''Protection of Children from Environmental Health Risks and Safety Risks''). This rule is not an economically significant rule and would not create an environmental risk to health or risk to safety that might disproportionately affect children.

J. Indian Tribal Governments

This rule does not have tribal implications under E.O. 13175 (''Consultation and Coordination with Indian Tribal Governments''), because it would not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

K. Energy Effects

We have analyzed this rule under E.O. 13211 (''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use''). We have determined that it is not a ''significant energy action'' under that order because it is not a ''significant regulatory action'' under E.O. 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

L. Technical Standards

The National Technology Transfer and Advancement Act [20] directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through OMB, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards [21] that are developed or adopted by voluntary consensus standards bodies. This rule does not use technical standards. Therefore, we did not consider the use of voluntary consensus standards.

M. Environment

We have analyzed this rule under DHS Management Directive 023.01 and Commandant Instruction M16475.1D, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA),[22] and have concluded that this action is one of a category of actions, which do not individually or cumulatively have a significant effect on the human environment. This rule is categorically excluded under section 2.B.2, figure 2–1, paragraphs (34)(d) and (e) of the Instruction, and 6(a) of our 2002 **Federal Register** notice of categorical exclusions.[23] This rule involves regulations concerning equipping of vessels, equipment approval and carriage requirements and vessel operation safety standards.

List of Subjects

46 CFR Part 2

Marine safety, Reporting and recordkeeping requirements, Vessels.

46 CFR Part 24

Marine safety.

46 CFR Part 25

Fire prevention, Marine safety, Reporting and recordkeeping requirements.

46 CFR Part 30

Cargo vessels, Foreign relations, Hazardous materials transportation, Penalties, Reporting and recordkeeping requirements, Seamen.

46 CFR Part 70

Marine safety, Passenger vessels, Reporting and recordkeeping requirements.

46 CFR Part 90

Cargo vessels, Marine safety.

46 CFR Part 188

Marine safety, Oceanographic research vessels.

For the reasons discussed in the preamble, the Coast Guard amends 46 CFR parts 2, 24, 25, 30, 70, 90, and 188 as follows:

PART 2—VESSEL INSPECTIONS

■ 1. Revise the authority citation for part 2 to read as follows:

Authority: Sec. 622, Pub. L. 111–281; 33 U.S.C. 1903; 43 U.S.C. 1333; 46 U.S.C. 2103, 2110, 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277, sec. 1–105; Department of Homeland Security Delegation No. 0170.1(II)(77), (90), (92)(a), (92)(b).

§ 2.01–7 [Amended]

■ 2. Amend § 2.01–7 to remove the phrase ''carrying passengers or passengers–for–hire'' from Table 2.01–7(a), column 5, rows 3 and 4, and remove the phrase ''None'' from column 5, row 6, adding in its place the phrase ''All vessels not covered by columns 2, 3, 4, and 6''.

PART 24—GENERAL PROVISIONS

■ 3. Revise the authority citation for part 24 to read as follows:

Authority: 46 U.S.C. 2103, 2113, 4302; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277, sec. 1–105; Department of Homeland Security Delegation No. 0170.1(II)(92)(a), (92)(b).

§ 24.05–1 [Amended]

■ 4. Amend § 24.05–1 to remove the phrase ''carrying passengers or passengers–for–hire'' from Table 24.05–1(a), column 5, rows 3 and 4, and remove the phrase ''None'' from column 5, row 6, adding in its place the phrase ''All vessels not covered by columns 2, 3, 4, and 6.''

PART 25—REQUIREMENTS

■ 5. Revise the authority citation for part 25 to read as follows:

Authority: 33 U.S.C. 1903(b); 46 U.S.C. 2103, 3306, 4102, 4302; Department of Homeland Security Delegation No. 0170.1(II)(77), (92)(a), 92(b).

§ 25.25–1 [Amended]

■ 6. Amend § 25.25–1 as follows:

■ a. In paragraph (a) following the text ''noncommercial use;'', add the word ''and'';

■ b. In paragraph (b) following the text ''noncommercial use'', remove the semicolon, and add, in its place, a period; and

■ c. Remove paragraphs (c) and (d).

■ 7. Revise § 25.25–3 to read as follows:

§ 25.25–3 Definitions.

As used in this subpart:

(a) *Approval series* means the first six digits of a number assigned by the Coast Guard to approved equipment. Where approval is based on a subpart of subchapter Q of this chapter, the approval series corresponds to the number of the subpart. A listing of current and formerly approved equipment and materials may be found on the Internet at: *http://cgmix.uscg.mil/equipment.* Each OCMI may be contacted for information concerning approved equipment.

(b) *Approved* means approved under subchapter Q of this chapter.

(c) *Use* means operate, navigate, or employ.

■ 8. Revise § 25.25–5 to read as follows:

[20] Codified as a note to 15 U.S.C. 272.

[21] For example, specifications of materials, performance, design, or operation; test methods; sampling procedures, and related management systems practices.

[22] Codified at 42 U.S.C. 4321–4370f.

[23] 67 FR 48243 (Jul. 23, 2002).

§ 25.25–5 Life preservers and other lifesaving equipment required.

(a) No person may operate a vessel to which this subpart applies unless it meets the requirements of this subpart.

(b) (1) Each vessel not carrying passengers for hire and less than 40 feet in length must have on board at least one wearable personal flotation device (PFD) approved under subchapter Q of this chapter, and of a suitable size for each person on board.

(2) Each vessel carrying passengers for hire, and each vessel not carrying passengers for hire and 40 feet in length or longer, must have at least one PFD approved under approval series 160.055, 160.155, or 160.176, and of a suitable size for each person on board.

(3) In addition to the equipment required by paragraphs (b)(1) and (b)(2) of this section, each vessel 26 feet in length or longer, except for a barge to which this subpart applies, must have at least one approved lifebuoy, and each uninspected passenger vessel of at least 100 gross tons must have at least three approved lifebuoys. Lifebuoys must be approved under approval series 160.050 or 160.150, except that a lifebuoy approved under former 46 CFR 160.009 prior to May 9, 1979 (see 46 CFR chapter I, revised as of October 1, 1979), may be used as long as it is in good and serviceable condition.

(c)(1) Each vessel not carrying passengers for hire may substitute an immersion suit approved under 46 CFR 160.171 for a wearable PFD required under paragraphs (b)(1) or (b)(2) of this section.

(2) On each vessel, regardless of length and regardless of whether carrying passengers for hire, an approved commercial hybrid PFD approved under approval series 160.077, may be substituted for a PFD approved under approval series 160.055, 160.155, or 160.176, if it is—

(i) Used in accordance with the conditions marked on the PFD and in the owner's manual; and

(ii) Labeled for use on commercial vessels.

■ 9. Amend § 25.25–9, as follows:

■ a. In paragraph (a), remove the text ''§ 25.25–5 (b), (c) and (e)'' and add, in its place, the text ''§ 25.25–5(b) and (c)''; and

■ b. In paragraph (b), remove the text ''§ 25.25–5(d)'' and add, in its place, the text ''§ 25.25–5(b)''; and

■ c. Add a paragraph (c) to read as follows:

§ 25.25–9 Storage.

* * * * *

(c) For a barge to which this subpart applies, the wearable lifesaving equipment specified in § 25.25–5 need not be stored on board the barge if the barge's operator stores it elsewhere, and ensures that each individual dons the equipment or a work vest approved under 46 CFR 160.053 before boarding the barge and keeps it on for as long as the individual remains on board and at risk of falling overboard.

PART 30—GENERAL PROVISIONS

■ 10. Revise the authority citation for part 30 to read as follows:

Authority: 46 U.S.C. 2103, 3306, 3703; Department of Homeland Security Delegation No. 0170.1(II)(92)(a), (92)(b).

§ 30.01–5 [Amended]

■ 11. Amend § 30.01–5 to remove the phrase ''carrying passengers or passengers–for–hire'' from Table 30.01–5(d), column 5, rows 3 and 4, and remove the word ''None'' from column 5, row 6, adding in its place the phrase ''All vessels not covered by columns 2, 3, 4, and 6''.

PART 70—GENERAL PROVISIONS

■ 12. Revise the authority citation for part 70 to read as follows:

Authority: 46 U.S.C. 2103, 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277, sec. 1–105; Department of Homeland Security Delegation No. 0170.1(II)(92)(a), (92)(b).

§ 70.05–1 [Amended]

■ 13. Amend § 70.05–1 to remove the phrase ''carrying passengers or passengers–for–hire'' from Table 70.05–1(a), column 5, rows 3 and 4, and remove the word ''None'' from column 5, row 6, adding in its place the phrase ''All vessels not covered by columns 2, 3, 4, and 6''.

PART 90—GENERAL PROVISIONS

■ 14. Revise the authority citation for part 90 to read as follows:

Authority: 46 U.S.C. 2103, 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277, sec. 1–105; Department of Homeland Security Delegation No. 0170.1(II)(92)(a), (92)(b).

§ 90.05–1 [Amended]

■ 15. Amend § 90.05–1 to remove the phrase ''carrying passengers or passengers–for–hire'' from Table 90.05–1(a), column 5, rows 3 and 4, and remove the word ''None'' from column 5, row 6, adding in its place the phrase ''All vessels not covered by columns 2, 3, 4, and 6.''

PART 188—GENERAL PROVISIONS

■ 16. Revise the authority citation for part 188 to read as follows:

Authority: 46 U.S.C. 2103, 2113, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277, sec. 1–105; Department of Homeland Security Delegation No. 0170.1(II)(92)(a), (92)(b).

§ 188.05–1 [Amended]

■ 17. Amend § 188.05–1 to remove the phrase ''carrying passengers or passengers–for–hire'' from Table 188.05–1(a), column 5, rows 3 and 4, and remove the word ''None'' from column 5, row 6, adding in its place the phrase ''All vessels not covered by columns 2, 3, 4, and 6.''

J. G. Lantz,

Director of Commercial Regulations and Standards, U. S. Coast Guard.

[FR Doc. 2014–21541 Filed 9–9–14; 8:45 am]

BILLING CODE 9110–04–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 300

[Docket No. 130722647–4403–02]

RIN 0648–XD448

International Fisheries; Pacific Tuna Fisheries; 2014 Commercial Fishing for Pacific Bluefin Tuna Closed in the Eastern Pacific Ocean

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Temporary rule; fishery closure.

SUMMARY: NMFS is closing commercial fishing for Pacific bluefin tuna in the eastern Pacific Ocean (EPO) because the catch limit is expected to be reached by the effective date of this action. This action is necessary per the intentions of the final rule (May 16, 2014), that implements the Inter-American Tropical Tuna Commission Resolution C–13–02 on conservation and management measures for Pacific bluefin tuna in the EPO.

DATES: Effective at 5 p.m. PDT, September 5, 2014 through December 31, 2014.

FOR FURTHER INFORMATION CONTACT: Mark Helvey, NMFS West Coast Region, 562–980–4040.

SUPPLEMENTARY INFORMATION: Commercial fishing for Pacific bluefin tuna in the eastern Pacific Ocean is

managed, in part, under the Tuna Conventions Act of 1950 (Act), 16 U.S.C. 951–962. Under the Act, NMFS must publish regulations to carry out recommendations of the Inter-American Tropical Tuna Commission (IATTC) that have been approved by the Department of State (DOS). The United States is a member of the IATTC, which was established under the Convention for the Establishment of an Inter-American Tropical Tuna Commission signed in 1949 (Convention). The Conventions was signed to provide an international agreement to ensure the effective international conservation and management of highly migratory species of fish in the Convention Area.

The IATTC Convention Area for this action is defined to include the waters of the eastern Pacific Ocean bounded by the coast of the Americas, the 50° N. and 50° S. parallels, and the 150° W. meridian. Regulations governing fishing by U.S. vessels in accordance with the Act appear at 50 CFR part 300, subpart C. Those regulations implement recommendations of the IATTC for the conservation and management of highly migratory fish resources in the IATTC Convention Area (generally referred to as the eastern Pacific Ocean).

The IATTC has recommended, and the DOS approved, annual catch limits of Pacific bluefin tuna for U.S. commercial vessels. For calendar year 2014, the targeting, retention, transshipping, or landing of Pacific bluefin tuna by U.S. commercial vessels fishing in the IATTC Convention Area is limited to 500 metric tons (mt) in the event that the Commission-wide limit of 5,000 mt has been reached (79 FR 28448, May 16, 2014, and codified at 50 CFR 300.25). The Commission-wide limit of 5,000 mt in 2014 is for all Commission members and cooperating non-members operating in the EPO. Additionally, the regulations at 50 CFR 300.25 establish a 2014 commercial PBF catch limit of 500 mt for the U.S. fleet in the event that the Commission-wide limit of 5,000 mt is reached. NMFS received a notice from the IATTC Director on July 9, 2014 that the Commission-wide limit of 5,000 mt was estimated to have been reached.

Based on the best available information from the fishery and working with the California Department of Fish and Wildlife, NMFS monitored the catch and landings of U.S. commercial vessels fishing in the IATTC Convention Area and projected that the 500 mt catch limit for U.S. commercial vessels is expected to be reached by September 5, 2014. This is the first year that U.S. commercial fisheries have reached the 500 mt catch limit since the IATTC began actively managing Pacific bluefin fisheries in the EPO. On average, annual U.S. commercial landings for Pacific bluefin tuna have for the last ten years been less than 100 mt.

Between January 2014 and July 2014 catches remained low at an estimated 2.1 mt; however, in early August the availability of Pacific bluefin tuna in U.S. waters increased, with a corresponding increase in landings over a short period of time. With clear intent of not exceeding the 500 mt catch limit for Pacific bluefin tuna, NMFS is waiving the seven day advance notice as described in 50 CFR 300.25(h)(3). To provide as much advanced notice as practicable, NMFS has taken other steps to notify members of the fishing industry and the public that U.S. commercial fishing for Pacific bluefin tuna in the Convention Area will be closed starting on September 5, 2014, through the end of the 2014 calendar year.

During the closure, U.S. commercial fishing vessels may not target, retain on board, transship, or land Pacific bluefin tuna in the Convention Area, except as follows:

- Any Pacific bluefin tuna already on board a fishing vessel upon the effective date of the prohibitions may be retained on board, transshipped, and/or landed, to the extent authorized by applicable laws and regulations, provided that they are landed within 14 days after the prohibitions become effective, that is September 19, 2014.
- Pacific bluefin tuna caught by a commercial vessel of the United States in the Convention Area may not be transshipped to a fishing vessel unless that fishing vessel is operated in compliance with a valid permit issued under § 660.707 or § 665.801.

Classification

For the reasons set forth below, NMFS finds good cause to waive prior notice, opportunity for public comment, and a delay to the effective date for this temporary rule pursuant to 5 U.S.C. 553(b)(B) and 5 U.S.C. 553(d)(3). These procedures are impracticable and contrary to public interest. NMFS would be unable to ensure that the 2014 Pacific bluefin tuna catch limit for U.S. commercial vessels is not exceeded if the effective date for this rule were delayed. This action is based on the best available information regarding U.S. catches approaching the 500 mt limit and is necessary for the conservation and management of Pacific bluefin tuna. The 500 mt catch limit is an important mechanism for the conservation and management of Pacific bluefin tuna, and one with which the U.S. must comply to meet its international obligations.

This action is required by § 300.25(b) and is exempt from review under Executive Order 12866.

Authority: 16 U.S.C. 951–962 *et seq.*

Dated: September 5, 2014.

Emily H. Menashes,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2014–21548 Filed 9–5–14; 4:15 pm]

BILLING CODE 3510–22–P

Proposed Rules

Federal Register
Vol. 79, No. 175
Wednesday, September 10, 2014

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Parts 27, 28, 29, 51, 52, 54, 56, 58, 62, 70, 75, and 91

[Document Number AMS–LPS–13–0050]

RIN 0581–AD36

Process for Establishing Rates Charged for AMS Services

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Proposed rule.

SUMMARY: The Agricultural Marketing Service (AMS) is proposing to amend its regulations to provide for a set of standardized formulas by which fees are calculated. The methodology used to calculate and implement the fees charged by AMS user-funded programs would be specified in the regulations. Currently, AMS publishes separate rules for each of the service fees it collects. The fees are calculated using formulas to account for all costs incurred by AMS in providing these services. Each year, fees would be announced in a notice in the **Federal Register** by June 1 and take effect at the start of the fiscal year, crop year, or as required by specific laws. This would provide greater transparency to the customers we serve as to how the fees are derived.

The standardized formulas would be used to calculate fees that AMS charges for providing voluntary grading, inspection, certification, auditing and laboratory services for a variety of agricultural commodities including meat and poultry, fruits and vegetables, eggs, dairy products, and cotton and tobacco. The fees would also apply to those persons requesting such services including producers, handlers, processors, importers and exporters. Fees charged for inspection of fruits, vegetables, and specialty crops subject to the Agricultural Marketing Agreement Act of 1937 also would be affected by this rule.

Provisions of this proposed rule would not supersede rates established by Memorandum of Understanding, Marketing Orders, or by cooperative agreements already in place. Furthermore, the cotton program would continue to consult with its industry before rates are established.

DATES: Comments must be received by October 10, 2014.

ADDRESSES: AMS invites interested persons to submit comments on this proposed rule. Comments may be submitted through the Federal eRulemaking portal. This Web site provides the ability to type short comments directly into the comment field on the Web page or attach a file containing lengthier comments. Go to *http://www.regulations.gov* and follow the online instructions at that site for submitting comments. All comments submitted by mail or electronic mail must include the Agency name and docket number AMS–LPS–13–0050. Comments received in response to this docket will be made available for public inspection and posted without change, including any personal information, to *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: For further information concerning policy issues contact, Melissa R. Bailey, Ph.D., AMS, U.S. Department of Agriculture, Room 3069–S, 1400 Independence Ave. SW., Washington, DC 20250; telephone (202) 720–5115, fax (202) 720–8477.

SUPPLEMENTARY INFORMATION:

Background

The Agricultural Marketing Act of 1946, as amended, (AMA) (7 U.S.C. 1621–1627), provides for the collection of fees to cover costs of various inspection, grading, certification or auditing services covering many agricultural commodities and products. The AMA also provides for the recovery of costs incurred in providing laboratory services. The Cotton Statistics and Estimates Act (7 U.S.C. 471–476) and the U.S. Cotton Standards Act (7 U.S.C. 51–65) provide for classification of cotton and development of cotton standards materials necessary for cotton classification. The Cotton Futures Act (7 U.S.C. 15b) provides for futures certification services and the Tobacco Inspection Act (7 U.S.C. 511–511s) provides for tobacco inspection and grading. These Acts also provide for the recovery of costs associated with these services. This proposal would set formulas to calculate these fees and any other fee currently being charged under these statutes. The table below shows the program regulations and types of fees charged for AMS services.

Cotton Fees

Cotton Statistics and Estimates Act (7 U.S.C. 471–476).
U.S. Cotton Standards Act (7 U.S.C. 51–65).
Cotton Futures Act (7 U.S.C. 15b).
7 CFR Part 27—Cotton Classification Under Cotton Futures Legislation.
  Subpart A—Regulations; §§ 27.80–27.90; Costs of Classifications and Micronaire.
7 CFR Part 28—Cotton Classing, Testing, and Standards.
  Subpart A—Regulations Under the United States Cotton Standards Act; §§ 28.115–28.126; Fees and Costs.
  Subpart D—Cotton Classification and Market News Service for Producers:
    §§ 28.909; Costs.
    §§ 28.910; Classification of samples and issuance of classification data.
    §§ 28.911; Review classification.

Dairy Fees

The Agricultural Marketing Act of 1946, as amended, (AMA) (7 U.S.C. 1621–1627).
7 CFR Part 58—Grading and Inspection, General Specifications for Approved Plants and Standards for Grades of Dairy Products.
  Subpart A—Regulations Governing the Inspection and Grading Services of Manufactured or Processed Dairy Products; §§ 58.38–58.46; Fees and Charges.

Fruit and Vegetable Fees

The Agricultural Marketing Act of 1946, as amended, (AMA) (7 U.S.C. 1621–1627).
7 CFR Part 51—Fresh Fruits, Vegetables and Other Products (Inspection, Certification, and Standards).
Subpart A—Regulations:
§§ 51.37–51.44; Schedule of Fees and Charges at Destination Markets.
§§ 51.45; Schedule of Fees and Charges at Shipping Point Areas.
7 CFR Part 52—Processed Fruits and Vegetables, Processed Products Thereof, and Other Processed Food Products.
Subpart—Regulations Governing Inspection and Certification; §§ 52.41–52.51; Fees and Charges.

Meat and Livestock Fees

The Agricultural Marketing Act of 1946, as amended, (AMA) (7 U.S.C. 1621–1627).
7 CFR Part 54—Meats, Prepared Meats, and Meat Products (Grading, Certification, and Standards).
Subpart A—Regulations; §§ 54.27–54.28; Charges for Service.
7 CFR Part 54—Meats, Prepared Meats, and Meat Products (Grading, Certification, and Standards).
Subpart C—Regulations Governing the Certification of Sanitary Design and Fabrication of Equipment Used in the Slaughter, Processing and Packaging of Livestock and Poultry Products; §§ 54.1028; Charges for Service.
7 CFR Part 62—Livestock, Meat and Other Agricultural Commodities (Quality Systems Verification Programs).
Subpart A—Quality Systems Verification Definitions §§ 62.300; Fees and Other Costs for Service.
7 CFR Part 75—Regulations for Inspection and Certification of Quality of Agricultural and Vegetable Seeds; §§ 75.41; General.

Poultry Fees

The Agricultural Marketing Act of 1946, as amended, (AMA) (7 U.S.C. 1621–1627).
7 CFR Part 56—Voluntary Grading of Shell Eggs.
Subpart A—Grading of Shell Eggs; §§ 56.45–56.54; Fees and Charges.
7 CFR Part 70—Voluntary Grading of Poultry and Rabbit Products.
Subpart A—Grading of Poultry and Rabbit Products; §§ 70.70–70.78; Fees and Charges.

Science and Technology Fees

The Agricultural Marketing Act of 1946, as amended, (AMA) (7 U.S.C. 1621–1627).
7 CFR Part 91—Services and General Information (Science and Technology).
Subpart I—Fees and Charges; §§ 91.37–91.45.

Tobacco Fees

Tobacco Inspection Act (7 U.S.C. 511–511s).
7 CFR Part 29—Tobacco Inspection.
Subpart B—Regulations; §§ 29.123–29.129; Fees and Charges.
Subpart F—Policy Statement and Regulations Governing the Identification and Certification of Non-quota Tobacco Produced and Marketed in Quota Area; §§ 29.9251; Fees and Charges.

Grading, inspection and verification programs facilitate the movement of agricultural products through marketing channels—from growers to wholesalers, retailers and consumers—in a quick, efficient, and equitable manner. These services include the grading, inspection or certification of quality factors in accordance with established U.S. Grade Standards; audits or accreditation according to International Organization for Standardization (ISO) standards and/or Hazard Analysis and Critical Control Point (HACCP) principles; and other marketing claims. The quality grades serve as a basis to reflect the value of agricultural commodities to both producers and consumers. AMS' grading and quality verification and certification, audit and accreditation, plant process and equipment verification, and laboratory approval services are voluntary tools paid for by the users on a fee-for-service basis. The agriculture industry can use these tools to promote and communicate the quality of agricultural commodities to consumers. Laboratory services are provided for analytic testing, including but not limited to chemical, microbiological, biomolecular, and physical analyses.

Approximately 70 percent of AMS' operational budget is derived from fees assessed for services provided to agricultural industries. Changes in fee-for-service rates may result from fluctuating customer needs, increases in employee salary and benefit expenses, inflationary impact on non-labor operating expenses and fixed costs, and/or uncollected revenue (bad debt). Currently, each AMS program individually proposes a fee change when a revenue shortfall is anticipated for a specific program or activity. As a result, these changes do not appear in a single unified fee schedule. Lack of certainty as to when annual fees will be announced may affect fiscal planning for the users of the services, especially if fees are changed in the middle of a contract or harvest season. In addition, because of the separate and repetitive use of the agency rulemaking process, programs can experience delays in recovering the full cost of the services they provide.

As a result, a number of AMS programs amended their regulations to provide for multi-year annual fee changes that were established by a single rulemaking action. While this enabled the Agency to collect revenue based on a revised fee each year, estimates used to set the projected annual rates did not always result in the Agency collecting revenues sufficient to cover its costs. Instead, in some instances, the Agency recovered partial costs.

In order to provide both transparency and predictability to the industries served and to allow the Agency to effectively plan for staffing, investments in infrastructure, and other resources, AMS is proposing to amend its regulations to provide for a set of standardized formulas by which fees are calculated. This process would use formulas established to determine fees for AMS's grading, inspection, certification, auditing, and laboratory services that would cover expected costs while maintaining a reasonable reserve. AMS Programs are required to sustain a certain minimum level of reserve funds in order to maintain fiscal responsibility should the program area undergo closure. Each Program reserve level is affected by factors such as number of employees, salaries, benefits, contracted obligations, and other items.

This rulemaking is similar to one conducted by the USDA Food Safety and Inspection Service (FSIS) and published in the **Federal Register** on April 12, 2011 (76 FR 20220). FSIS established formulas for calculating basetime, overtime, holiday, and laboratory services user fee rates in its final rule.

Currently, AMS performs financial analyses on an annual basis to determine whether the current fees are adequate to recover the costs incurred for providing these services. Historical or prior year cost and workload data, along with applicable projections are used to generate estimates of future obligations and revenues. This proposal would specify that the rates be based on the actual cost and workload data of the previous fiscal year(s) or accounting period(s) (e.g. crop year) used by respective programs. On the basis of these analyses and using the proposed formulas, AMS would determine the fees necessary to sustain program services. This would increase predictability and provide information for planning purposes for the industries utilizing AMS user fee services.

The components (costs) that AMS will use to calculate the rates for services are the same costs used in calculating past rates.

COMPARISON OF CURRENT VERSUS PROPOSED SERVICE CHARGES (COSTS)

Current charges	Proposed charges
Direct pay	Direct pay.
Cost of living	Cost of living.
Benefits	Benefits.
Indirect costs (AMS support—"overhead", bad debt)	Operating costs (training, equipment, reserve fund, AMS support—"overhead", and other related expenses).
See indirect costs	Bad debt.
Reserve	See operating costs.
Training, equipment and other related expenses	See operating costs.
Travel (if applicable)	Travel (if applicable).
Overtime, holiday, Saturday, Sunday, and night differential as per OPM guidelines.	Overtime, holiday, Saturday, Sunday, and night differential as per OPM guidelines.

As required by the Cotton Statistics and Estimates Act (7 U.S.C. 471–476), consultations regarding the establishment of the fee for cotton classification with U.S. cotton industry representatives will continue. Representatives of all segments of the cotton industry, including producers, ginners, bale storage facility operators, merchants, cooperatives, and textile manufacturers would continue to be addressed in various industry-sponsored forums.

Provisions of this proposed rule would not supersede rates established by Memoranda of Understanding, Marketing Orders, cooperative agreements or other similar instruments. Under MOU, cooperative agreements, and similar instruments, fees are established based on specific agreements specified with an individual entity such as a State or university.

The outcome of this proposal would be a transparent system for establishing fee rates for all AMS user fee programs, whereby financial and resource needs for continued operation are reviewed on a pre-determined cycle, using established formulas. This would avoid financial crises that may occur when reserve funds are rapidly depleted due to unanticipated business events, and would allow the Agency to more quickly adjust the cost of the services it provides. The information would also greatly benefit AMS customers by allowing them to better plan for the cost of AMS services.

Currently, AMS publishes a rule for each of the service fees it collects. This rulemaking action supports the government's initiative to streamline processes (Streamlining Government Report GAO 11–908, September 2011) and reduces the number of regulations that are published by issuing one regulation containing the formulas and one notice a year to announce all user fees. This action also supports the Department's goal of formalizing processes to integrate openness, transparency, participation and collaboration (USDA Open Government Plan, April 7, 2010) into AMS's every day operations.

With this action, AMS is proposing to amend its regulations in 7 CFR parts 27, 28, 29, 51, 52, 54, 56, 58, 62, 70, 75, and 91 by making public the formulas it uses to calculate user-fee rates. Making the standardized formulas a part of the regulations would allow AMS to announce annual fees in a yearly **Federal Register** notice, starting with the effective date of this rule and for subsequent years, by June 1 each year or as required by specific laws. The fee rates would be effective at the beginning of the following fiscal year, crop year, or as required by specific laws and identified in the yearly notice. The yearly notice will include all rates charged by AMS including some that are not currently part of regulations. The yearly notice would include a per-hour rate and, in some instances, the equivalent per-unit cost. The per-unit cost will be provided to facilitate understanding of the costs associated with the services to the industries that historically use a unit-cost basis for payment. In those cases where per-unit cost is necessary, the formulas would have an additional step to convert per hour costs to per unit costs. This process is currently followed for cotton and some fruit and vegetable user fee services.

Travel costs are also part of the costs that are charged for user fee services. Currently, in some instances, travel costs are already included in the fee charged for service. In other instances, travel costs are added to the fee. In both instances, travel costs are charged to the recipient of the service. The annual notice would maintain the same procedure currently used for recovering travel costs.

AMS is also making several administrative changes and corrections to language in the regulations that is obsolete, such as changing ''diskette'' to ''electronic means''.

Definitions

In order to provide additional clarity, AMS defines the following terms used throughout this document as follows:

Bad Debt—Accounts receivable that will likely remain uncollectable and will be written off.

Benefits—various non-wage compensation provided to employees in addition to their normal wages or salaries. Examples of items included in this category are health and unemployment insurance, retirement, workers compensation, Thrift Savings Plan contributions, and other similar compensation.

Cost of Living Adjustment—the cost of maintaining a certain standard of living based on the economic assumptions in the Office of Management and Budget (OMB), ''Update to Civilian Position Full Fringe Benefit Cost Factor, Federal

Pay Raise Assumptions, and Inflation Factors used in OMB Circular A–76, Performance of Commercial Activities''.

Direct Hours—the regular hours worked by employees of the Agency. This does not include overtime or holiday hours.

Direct Pay—monetary compensation paid to employees of AMS for work performed. Pay is based on the U.S. Office of Personnel Management pay rate tables. It may include night and Sunday differential costs.

Holiday—the official days of the calendar year established by law (5 U.S.C. 6103) or identified by Executive Order as Federal holidays.

Hour—measure by which grading, certification, inspection, classification, laboratory or other services cost is based and expenses are charged.

Indirect Cost—this cost includes program and AMS activities that support the services provided to the industry. Another common term for this cost category is ''overhead''.

Operating Reserve—funds above expected obligations required to effectively manage uncertainties in demand and cash flow timing.

Operating Cost—costs attributed to performing grading, inspection, certification, or laboratory services duties (i.e. training, equipment, and other such costs), plus operating reserve, plus indirect costs.

Overtime—hours worked in excess of the approved schedule. Work performed after the first 8 hours per day or 40 hours per week is considered overtime.

Regular Rate—the cost per hour for work provided in accordance with an applicant contract. Under Federal labor laws, this rate applies to the first 8 hours per day, or first 40 hours worked per week by AMS employees.

Unit—any measurement that there is one of. For example, one bale of cotton or one truck load of vegetables.

Proposed Formulas for Regular, Overtime, and Holiday Rates

With this rulemaking, AMS proposes to amend its regulations to provide a set of standardized formulas by which fees are calculated. The methodology used to calculate and implement the fees charged by AMS user-funded programs would be specified in 7 CFR parts 27, 28, 29, 51, 52, 54, 56, 58, 62, 70, 75, and 91.

AMS would use these formulas to calculate annual fee rates starting with the effective date of this rule and for subsequent years. AMS will publish the specific formulas used to calculate service fees. AMS intends to announce the actual annual fee rates in a **Federal Register** notice by June 1 each year or as required by specific laws. These fees would be effective at the beginning of the following fiscal year, crop year, or as required by specific laws.

Salary, hours, and most rates used in the formulas would be based on the prior fiscal year's (or applicable accounting period or historical data) actual costs and hours. AMS would round the final rates up to make the amounts divisible by the quarter hour (15 minutes). Fifteen minutes would be the minimum charge for services covered by these rates.[1] Travel costs may be part of a fee or may be added to the calculated fee.

Currently, some fees are charged on a per unit basis and others are charged on a per hour basis. AMS would continue to provide costs based on a per hour and per unit basis to maintain consistency. For cotton and some fruit and vegetable programs, per unit costs are determined after converting the hourly costs to units.

AMS is proposing the following formulas:

Regular Rate—The total AMS grading, inspection, certification, classification, audit, or laboratory service program personnel direct pay divided by direct hours for the previous year, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

An example of the calculation would look like this: [FY 2013 Direct Pay divided by Total Direct Hours ($2,663,407/82,985) = $32.10, plus ($32.10 * 1.7% (2014 cost of living increase)) = $32.64 + $10.04 (benefits rate) + $28.90 (operating rate) + $.01 (bad debt allowance rate) = $71.59 (rounded to $71.60); rounding is done to reflect billable quarter hour increments of 15 minutes. If applicable, travel expenses may also be added.

Overtime Rate—The total AMS grading, inspection, certification, classification, audit, or laboratory service program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5, plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

An example of the calculation will look like this: [FY 2013 Direct Pay divided by Total Direct Hours ($2,663,407/82,985) = $32.10, plus ($32.10 * 1.7% (2014 cost of living increase)) = $32.64, multiplied by 1.5 ($32.64 * 1.5 (overtime rate)) = $48.96 + $10.04 (benefits rate) + 28.90 (operating rate) + $.01 (bad debt allowance rate) = $87.91 (rounded to $87.92); rounding is done to reflect billable quarter hour of 15 minutes. If applicable, travel expenses may also be added.

Holiday Rate—The total AMS grading, inspection, certification, classification, audit, or laboratory service program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

An example of the calculation will look like this: [FY 2013 Direct Pay divided by Total Direct Hours ($2,663,407/82,985) = $32.10, plus ($32.10 * 1.7% (2014 cost of living increase)) = $32.64, multiplied by 2 ($32.64 * 2 (double time or Holiday rate)) = $65.28 + $10.04 (benefits rate) + $28.90 (operating rate) + $.01 (bad debt allowance rate) = $104.23 (rounded to $104.24); rounding is done to reflect billable quarter hour increments of 15 minutes. If applicable, travel expenses may also be added.

Formula calculations are based on prior fiscal year's actual costs or historical costs, workload data, projection of expenses impacting program costs, cost of living increase and inflation. Cost of living increases and inflation factors are based on the economic assumptions from 2013–2023 which have been updated in the Office of Management and Budget's (OMB) FY 2014 Mid-Session Review. Rather than codify a reference to this OMB budget document in the proposed rule, each year AMS intends to use the most recent economic factors released by OMB for budget development purposes to determine cost impacts for these user fee activities.

Proposed Formulas for the Benefits, Operating, and Allowance for Bad Debt Rates

As proposed, AMS intends to derive the components of proposed formulas above, using previous fiscal year's actual costs/historical costs, as follows:

Benefits Rate—The total AMS grading, inspection, classification, certification, audit, or laboratory service program direct benefits costs divided by the total hours worked (regular, overtime, and holiday), which is then

[1] The current minimum charge for some services covered by these rates is 30 minutes.

multiplied by the next calendar year's percentage cost of living increase.

An example of the calculation will look like this: [2013 Direct Benefits cost/(Total hours + Total Overtime hours + Total Holiday hours) ($819,207/82,985)] = $9.87, plus ($9.87 * 1.7% (2014 Cost of Living)) = $10.04.

Operating Rate—The total AMS grading, inspection, classification, certification, audit, or laboratory service program operating costs divided by total hours worked (regular, overtime, and holiday), which is then multiplied by the percentage of inflation.

An example of the calculation will look like this: [2013 Total Operating Costs/(Total hours + Total Overtime hours + Total Holiday hours) ($2,351,857/82,985)] = $28.34, plus ($28.34 * 2% (2014 Inflation)) = $28.90.

Allowance for Bad Debt Rate—Total AMS grading, inspection, classification, certification, audit, or laboratory service program allowance for bad debt divided by total hours worked (regular, overtime, and holiday).

An example of the calculation will look like this: [2013 Total Bad Debt cost/(Total hours + Total Overtime hours + Total Holiday hours) ($1,000/82,985) = $ 0.01.

As noted above, the proposed formulas reflect that the cost of providing services include both direct and indirect costs. Direct costs include the cost of salaries, employee benefits, and if applicable, travel and some operating costs. Indirect or overhead costs include the cost of program and Agency activities supporting the services provided to the industry. Indirect cost expenditures are allocated across the Agency for each direct hour of grading, inspection, classification, certification, auditing, or laboratory service provided. For purposes of these formulas, indirect costs have been included as part of operating costs.

Executive Order 12866 and Executive Order 13563

Executive Orders 12866 and 13563 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This proposed rule is not a significant regulatory action under section 3(f) of Executive Order 12866, Regulatory Planning and Review, as supplemented by Executive Order 13563. The Office of Management and Budget has not reviewed this proposal under these Orders.

Executive Order 13175

This rule has been reviewed in accordance with the requirements of Executive Order 13175, Consultation and Coordination with Indian Tribal Governments. The review reveals that this regulation would not have substantial and direct effect on Tribal governments and would not have significant Tribal implications.

Executive Order 12988

This proposed rule has been reviewed under Executive Order 12988, Civil Justice Reform. This proposed rule: (1) Has no retroactive effect; and (2) does not require administrative proceedings before parties may file suit in court challenging this rule.

Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) (5 U.S.C. 601–612) requires agencies to consider the economic impact of each rule on small entities and evaluate alternatives that would accomplish the objectives of the rule without unduly burdening small entities or erecting barriers that would restrict their ability to compete in the market. The purpose is to fit regulatory actions to the scale of businesses subject to the action. Section 605 of the RFA allows an agency to certify a rule, in lieu of preparing an analysis, if the rulemaking is not expected to have a significant economic impact on a substantial number of small entities.

Most small agricultural service firms have been defined by the Small Business Administration (SBA) (13 CFR 121.201) as those having annual receipts of less than $7,000,000. For certain types of businesses (e.g., dairy, egg, and meat processing; handlers of produce), the SBA considers a small entity as those that employ less than 500 employees.

The grading, inspection, certification and auditing services provided under these regulations are voluntary.[2] [3] The benefits of using grading, inspection, certification, auditing, and laboratory services outpace the costs of obtaining these services. These services are used by meat and poultry establishments, fruit and vegetable handlers and processors, egg processing plants, dairy processors, users of cotton and tobacco program services, importers and exporters of the above commodities, and other interested persons to determine quality and prices of their products.

AMS estimates that approximately 849 entities use voluntary meat grading and certification services. This estimate includes 413 egg, poultry, and rabbit packing plants that use the USDA grade shield. Of these 413 plants, approximately fifteen percent would be considered a small business under the SBA criteria. The remaining 436 entities includes livestock slaughterers, brokers, meat and other processors, distributors, organic certification companies, trade associations, State and Federal entities, and livestock producers and feeders. Of these 436 entities, approximately 70 percent would be considered a small business under the SBA criteria.

AMS estimates that 60 cotton merchants use AMS services for cotton futures classification, 20,000 cotton producers and 637 cotton gins use AMS services for normal cotton classification, and 125 tobacco customers use AMS services. Of these entities, approximately 80 percent would be considered a small business under the SBA criteria.

AMS estimates that, over the last two fiscal years, we provided user fee services to an average of 2,308 fruit and vegetable companies for fresh products. AMS estimates that, over the last two fiscal years, we provided user fee services to an average of 1,087 fruit and vegetable companies for processed products. We estimate that approximately 98 percent of these 3,395 companies would be considered a small business under the SBA criteria. The number of entities referenced above includes those subject to the provisions of the Agricultural Marketing Agreement Act of 1937.

AMS estimates that 360 dairy plants use AMS' dairy grading and inspection services. We believe that approximately 96 percent of these plants would be considered a small business under the SBA criteria.

AMS considered the economic impact of this action on these small entities. The proposed formulas would have a minimal impact on entities that request these services. The difference in fee rates would be negligible since the costs used in the formulas to calculate the current and future fees would remain the same. For example, it is expected that the Dairy user fee would change from $76 per hour to $78 per hour under the proposed formulas. AMS has not updated several of its programs' user

[2] Currently, there is no mandatory inspection and grading of tobacco under the Tobacco Inspection Act (7 U.S.C. 511–511s).

[3] Fees charged for inspection of fruits, vegetables, and specialty crops subject to the Agricultural Marketing Agreement Act of 1937 also would be affected by this rule.

fees for a number of years. For those fees that have not been updated recently, there may be a change in fees. These possible changes would be the result of using current economic data and cost estimates to calculate the fee rates. AMS would take into consideration, when appropriate, economic and industry conditions before adjusting fees. The process would maintain up-to-date fees.

By including the formulas used to calculate annual user fee rates in the regulations, the Agency would streamline the rulemaking process to help ensure that fees are effective at the beginning of each fiscal year or other period as required by law. Fees would cover inflation and national and locality pay raises but would not support any new budgetary initiative. Any cost changes are similar to other changes that the industry would experience because of inflation and wage increases.

The outcome of this proposal would be a transparent system for establishing fee rates for all AMS user fee programs, whereby financial and resource needs for continued operation are reviewed on a pre-determined cycle, using established formulas. This would avoid financial crises that occur when reserve funds are rapidly depleted due to unanticipated business events, and would allow the Agency to more quickly adjust the cost of the services it provides. The information would also greatly benefit AMS customers by allowing them to better plan for the cost of AMS services.

The total volume of commodities graded, inspected and certified under the associated regulations in 2012 was approximately 91 billion pounds. An overall increase in cost per pound of product associated with the new fees is estimated at $.0002. Even in competitive industries such as fruit and vegetables, meat, poultry, dairy and eggs, this amount of increase in costs would have an insignificant impact on profits and processes. Accordingly, AMS certifies that this rule will not have a significant economic impact on a substantial number of small entities.

Paperwork Reduction Act

This rule does not contain any new information collection or recordkeeping requirements that are subject to the Office of Management and Budget (OMB) approval under the Paperwork Reduction Act, 44 U.S.C. Chapter 35.

E-Government Act

AMS and USDA are committed to achieving the purposes of the E-Government Act (44 U.S.C. 3601, et seq.) by, among other things, promoting the use of the Internet and other information technologies and providing increased opportunities for citizen access to Government information and services, and for other purposes.

Public awareness of all segments of rulemaking and policy development is important. Consequently, in an effort to ensure that all interested parties, including minorities, women, and persons with disabilities are aware of this notice, AMS will announce it online and make copies of this **Federal Register** publication available through the AMS Web page located at *http://www.ams.usda.gov/AMSv1.0/.* In addition, AMS offers a subscription service which provides automatic and customized access to selected agricultural commodity news and information. Further, each program will make a concerted effort to inform their respective industries while performing inspections and providing services.

Finally, USDA has not identified any relevant Federal rules that duplicate, overlap, or conflict with this proposed rule.

A 30-day comment period is provided to allow interested persons to respond to this proposal. Thirty days is deemed appropriate because this action needs to be in place no later than March 2015 to allow sufficient time for fees to be published and the industry to be notified. Further, this action does not change the services for which fees are charged. All written comments received in response to this rule by the date specified will be considered prior to finalizing this action.

List of Subjects

7 CFR Part 27

Commodity futures, Cotton.

7 CFR Part 28

Administrative practice and procedure, Cotton, Reporting and recordkeeping requirements, Warehouses.

7 CFR Part 29

Administrative practice and procedure, Advisory committees, Government publications, Imports, Pesticide and pests, Reporting and recordkeeping requirements, Tobacco.

7 CFR Part 51

Agricultural commodities, Food grades and standards, Fruits, Nuts, Reporting and recordkeeping requirements, Vegetables.

7 CFR Part 52

Food grades and standards, Food labeling, Frozen foods, Fruits, Reporting and recordkeeping requirements, Vegetables

7 CFR Part 54

Food grades and standards, Food labeling, Meat and meat products, Poultry and poultry products.

7 CFR Part 56

Eggs and egg products, Food grades and standards, Food labeling, Reporting and recordkeeping requirements.

7 CFR Part 58

Dairy products, Food grades and standards, Food labeling, Reporting and recordkeeping requirements.

7 CFR Part 62

Food grades and standards, Food labeling, and Meat and meat products.

7 CFR Part 70

Food grades and standards, Food labeling, Poultry and poultry products, Rabbits and rabbit products, Reporting and recordkeeping requirements.

7 CFR Part 75

Administrative practice and procedure, Agricultural commodities, Reporting and recordkeeping requirements, Seeds, Vegetables.

7 CFR Part 91

Administrative practice and procedure, Agricultural commodities, Laboratories, Reporting and recordkeeping requirements.

For the reasons set forth in the preamble, 7 CFR chapter I is proposed to be amended as follows:

PART 27—COTTON CLASSIFICATION UNDER COTTON FUTURES LEGISLATION

■ 1. The authority citation for 7 CFR part 27 continues to read as follows:

Authority: 7 U.S.C. 15b, 7 U.S.C. 473a–b, 7 U.S.C. 1622(g).

■ 2. Revise § 27.80 by adding paragraphs (a) and (b) and removing paragraphs (c) and (d).

The additions read as follows:

§ 27.80 Fees; review classification, futures classification and supervision.

* * * * *

(a) For each calendar year, AMS will calculate the rate for services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS grading or classification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS grading or classification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS grading or classification program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b) For each calendar year, based on historical costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(1) *Benefits rate.* The total AMS grading or classification program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(2) *Operating rate.* The total AMS grading or classification program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(3) *Allowance for bad debt rate.* Total AMS grading or classification program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(c) *Basis.* The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most current Office of Management and Budget's Presidential Economic Assumptions.

■ 3. Revise § 27.81 to read as follows:

§ 27.81 Fees; certificates

For each new certificate issued in substitution for a prior certificate at the request of the holder thereof, for the purpose of business convenience, or when made necessary by the transfer of cotton under the supervision of any exchange inspection agency as provided in § 27.73, the person making the request shall pay a fee determined as described in § 27.80 of this part.

PART 28—COTTON CLASSING, TESTING, AND STANDARDS

■ 4. The authority citation for 7 CFR part 28, Subpart A, continues to read as follows:

Authority: 7 U.S.C. 55 and 61.

■ 5. Revise § 28.116 to read as follows:

§ 28.116 Amounts of fees for classification; exemption.

(a) For the classification of any cotton or samples, the person requesting the services shall pay a fee, based on the description that follows, subject to the additional fee provided by paragraph (c) of this section.

(1) For each calendar year, AMS will calculate the rate for services per hour per program employee using the following formulas:

(i) *Regular rate.* The total AMS grading or classification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(ii) *Overtime rate.* The total AMS grading or classification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(iii) *Holiday rate.* The total AMS grading or classification program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(2) For each calendar year, based on historical costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS grading or classification program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The total AMS grading or classification program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total AMS grading or classification program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(3) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most current Office of Management and Budget's Presidential Economic Assumptions.

(b) When a comparison is requested of any samples with a type or with other samples, the fees prescribed in paragraph (a) of this section shall apply to every sample involved, including each of the samples of which the type is composed.

(c) An additional fee based on current shipping rates shall be assessed for returning samples unless the request for service is so worded that the samples become government property immediately after classification.

(d) For any review of classification or comparison of any cotton, the fees prescribed in paragraph (a) of this section shall apply. The additional fee prescribed in paragraph (c) of this section is not applicable to review of classification if made on the same sample as the original class or comparison.

■ 6. Revise § 28.117 to read as follows:

§ 28.117 Fee for new memorandum or certificate.

For each new memorandum or certificate issued in substitution for a prior memorandum or certificate at the request of the holder, thereof, on account of the breaking or splitting of the lot of cotton covered thereby or otherwise for his business convenience, the person requesting such substitution shall pay a fee determined as described in § 28.116 of this part. If the memorandum is provided by electronic means, the fee shall be determined using the same provisions.

■ 7. Revise § 28.122 to read as follows:

§ 28.122 Fee for practical classing examination.

The fee for the practical classing examination for cotton shall be determined as described in § 28.116 of this part. Any applicant who passes the examination may be issued a certificate indicating this accomplishment. Any person who fails to pass the examination may be reexamined. The fee for this practical reexamination will

be determined as described in section 28.116.

■ 8. The authority citation for 7 CFR part 28, Subpart D, continues to read as follows:

Authority: 7 U.S.C. 51–65; 7 U.S.C. 471–476.

■ 9. Amend § 28.909 by revising paragraph (b) to read as follows:

§ 28.909 Costs.

* * * * *

(b) The cost of High Volume Instrument (HVI) cotton classification service to producers will be based on formulas set forth in § 28.116 of this part. The proceeds of the sale of cotton samples shall be used to defray the costs of providing the service under this subpart.

* * * * *

■ 10. Revise § 28.910 to read as follows:

§ 28.910 Classification of samples and issuances of classification data.

(a)(1) The samples submitted as provided in the subpart shall be classified by employees of the Division and classification memoranda showing the official quality determination of each sample according to the official cotton standards of the United States shall be issued by any one of the following methods at no additional charge:

(i) Electronic means, or

(ii) Telecommunications, with all long distance telephone line charges paid by the receiver of data.

(2) When an additional copy of the classification memorandum is issued by any method listed in paragraph (a)(1) of this section, there will be a charge determined as described in § 28.116. If provided as an additional method of data transfer, the minimum fee for each method issued shall also be determined as described in § 28.116.

(b) Owners of cotton, other than producers, may receive classification data showing the official quality determination of each sample by means of telecommunications from a central database to be maintained by the Division. The fee for this service shall be determined as described in § 28.116, with all communication charges paid by the receiver of data.

(c) Upon request of an owner of cotton for which classification memoranda have been issued under the subpart, a new memorandum shall be issued for the business convenience of such owner without the reclassification of the cotton. Such rewritten memorandum shall bear the date of its issuance and the date or inclusive dates of the original classification. The per-hour fee for a new memorandum shall be determined according to § 28.116, with a minimum per-sheet fee determined under the same provisions.

■ 11. Amend § 28.911 by revising paragraph (a) and the last sentence in paragraph (b) to read as follows:

§ 28.911 Review classification.

(a) A producer may request one review classification for each bale of eligible cotton. The fee for review classification shall be determined based on the formulas in § 28.116.

(b) * * * Producers who request return of their samples after classing will pay a fee determined based on the formulas in § 28.116.

PART 29—TOBACCO INSPECTION

■ 12. The authority citation for part 29 is revised to read as follows:

Authority: 7 U.S.C. 511–511s.

■ 13. Amend § 29.123 by:

■ a. Revising the first sentence of paragraph (a);

■ b. Revising paragraph (b);

■ c. Redesignating paragraphs (c), (d), and (e) as paragraphs (d), (e), and (f) respectively;

■ d. Adding new paragraph (c); and

■ e. Revising newly redesignated paragraph (d).

The revisions and addition read as follows:

§ 29.123 Fees and charges.

* * * * *

(a) *Mandatory inspection.* For each year, AMS will calculate the rate for services, per hour per program employee as described in § 29.123(b) and (c). * * *

(b) *Domestic permissive inspection and certification*—(1) *Regular rate.* The total AMS grading, inspection, or sampling program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS grading, inspection, or sampling program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS grading, inspection, or sampling program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(4) *Applicability.* The fees in paragraphs (b)(1) through (3) of this section shall be applicable for hogshead, bale cases, or sample inspections.

(c)(1) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS grading, inspection, or sampling program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The total AMS grading, inspection, or sampling program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total AMS grading, inspection, or sampling program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(2) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

(d) *Export permissive inspection and certification.* The inspection and certification fee for export tobacco will be determined as described in § 29.123(b) and (c).

* * * * *

■ 14. Amend § 29.500 by revising the first sentence of paragraph (a) and revising paragraphs (b) and (c) to read as follows:

§ 29.500 Fees and charges for inspection and acceptance of imported tobacco.

(a) The fee for inspection of imported tobacco will be determined as described in § 29.123 and shall be paid by the importer. * * *

(b) The fee for sampling, accepting, and certification of imported flue-cured and burley tobacco for prohibited pesticide residues will be determined as

described in § 29.123 and shall be paid by the importer.

(c) The fee for accepting imported flue-cured and burley tobacco not accompanied by a certification that it is free of prohibited pesticide residues will be determined as described in § 29.123. Fees for services rendered shall be remitted by check or draft in accordance with a statement issued by the Director, and shall be made payable to ''Agricultural Marketing Service.''

PART 51—FRESH FRUITS, VEGETABLES AND OTHER PRODUCTS (INSPECTION, CERTIFICATION, AND STANDARDS)

■ 15. The authority citation for part 51 continues to read as follows:

Authority: 7 U.S.C. 1621–1627.

■ 16. Revise § 51.38 to read as follows:

§ 51.38 Basis for fees and rates.

(a) For each calendar year, AMS will calculate the rate for services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS inspection program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS inspection program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS inspection program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b)(1) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS inspection program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The total AMS inspection program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(2) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

(c) When an inspection is delayed because product is not available or readily accessible, a charge for waiting time shall be determined using the formulas in this section.

PART 52—PROCESSED FRUITS AND VEGETABLES, PROCESSED PRODUCTS THEREOF, AND OTHER PROCESSED FOOD PRODUCTS

■ 17. The authority citation for part 52 continues to read as follows:

Authority: 7 U.S.C. 1621–1627.

§ 52.2 [Amended]

■ 18. Amend § 52.2 by removing the definition of ''In-plant sampler''.

■ 19. Revise § 52.42 to read as follows:

§ 52.42 Schedule of fees.

(a) For each calendar year, AMS will calculate the rate for services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS inspection program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS inspection program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS inspection program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(1) *Benefits rate.* The total AMS inspection program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(2) *Operating rate.* The total AMS inspection program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(3) *Allowance for bad debt rate.* Total AMS inspection program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(c) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

■ 20. Revise § 52.50 to read as follows:

§ 52.50 Travel and other expenses.

Charges may be assessed to cover the cost of travel time incurred in connection with the performance of any inspection service, including appeal inspections, as described in § 52.42 of this part. This includes time spent waiting for transportation as well as time spent traveling, but not to exceed eight hours of travel time for any one person for any one day: And provided further, that if travel is by common carrier, no hourly charge may be made for travel time outside the employee's official work hours.

■ 21. Amend § 52.51 by revising paragraphs (a), (b), (c), and (d) to read as follows:

§ 52.51 Charges for inspection services on a contract basis.

(a) The Administrator may enter into contracts with applicants to perform continuous inspection services or other types of inspection services pursuant to the regulations in this part and other

requirements as prescribed by the Administrator in such contract, and the charges for such inspection service provided in such contracts shall be based on such basis as will reimburse the Agricultural Marketing Service of the Department for the full cost of rendering such inspection service as described in § 52.42 of this subpart.

(b) The Administrator may enter into a written memorandum of understanding or contract, whichever may be appropriate, with any administrative agency charged with the administration of a marketing agreement or a marketing order effective pursuant to the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601 *et seq.*) for the making of inspections pursuant to said agreement or order on such basis as will reimburse the Agricultural Marketing Service of the Department for the full cost of rendering such inspection service based on the formulas in § 52.42 of this subpart. Likewise, the Administrator may enter into a written memorandum of understanding or contract, whichever may be appropriate, with an administrative agency charged with an administration of a similar program operated pursuant to the laws of any State.

(c) Charges for year-round in-plant inspection services on a contract basis will be billed to the applicant monthly for all hours worked with a minimum of 40 hours per week for each inspector assigned to perform the inspection services. Charges for work performed in excess of an employee's regular work schedule will be calculated as described in § 52.42(a)(2) of this subpart.

(d) Charges for less than year-round in-plant inspection services (four or more consecutive 40 hour weeks) on a contract basis will be billed to the applicant monthly for all hours with a minimum of 40 hours for each inspector assigned to perform the inspection services and will be calculated based on the formulas in § 52.42 of this subpart.

* * * * *

PART 54—MEATS, PREPARED MEATS, AND MEAT PRODUCTS (GRADING, CERTIFICATION, AND STANDARDS)

■ 22. The authority citation for 7 CFR part 54 continues to read as follows:

Authority: 7 U.S.C. 1621–1627.

§ 54.6 [Amended]

■ 23. Amend § 54.6 in paragraph (c)(2), in the first sentence, by removing the phrase ''as provided in § 54.27(b)'' and adding ''as provided in § 54.27'' in its place.

■ 24. Revise § 54.27 to read as follows:

§ 54.27 Fees and other charges for service.

(a) Fees and other charges equal as nearly as may be to the cost of the services rendered shall be assessed and collected from applicants in accordance with the following provisions unless otherwise provided in the cooperative agreement under which the services are furnished, or as provided in § 54.6 of this subpart. For each calendar year, AMS will calculate the rate for inspection, grading, or certification services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS grading, inspection, or certification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS grading, inspection, or certification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS grading, inspection, or certification program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b)(1) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS grading, inspection, or certification program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The total AMS grading, inspection, or certification program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total AMS grading, inspection, or certification program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(2) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

(c) *Fees for service on commitment basis.* Minimum fees for service performed under a commitment agreement or an agreement by memorandum shall be on the basis of 8 hours per day, Monday through Friday, excluding Federal legal holidays occurring Monday through Friday on which no grading and certification services are performed. Fees will be based on the formulas in this section. The Agency reserves the right under such a commitment agreement or agreement by memorandum to use any grader assigned to the plant on a commitment basis to perform service for other applicants, as provided in § 54.6(c), crediting the commitment applicant with the number of hours charged to the other applicant, provided the allowable credit hours plus hours actually worked for the applicants do not exceed 8 hours on any day, Monday through Friday, excluding legal holidays.

(d) *Fees for appeal service.* Fees for appeal service shall be determined on the basis of the time, of two official graders, required to render the service, including the time required for the preparation of certificates and travel of such graders in connection with the performance of the service. *Provided,* That when on appeal it is found that there was error in the original determination equal to or exceeding ten percent of the total number of similar units of the products involved, no charge will be made for the appeal service unless a special agreement therefor was made with the applicant in advance.

(e) *Fees for extra copies of certificates.* In addition to copies of certificates furnished under § 54.14, any financially interested person may obtain not to exceed three copies of any such certificate within one year from its date of issuance upon payment of a fee, and not to exceed three copies of any such certificate at any time thereafter, while a copy of such certificate is on file in the

Department. The fee for copies of certificates will be determined using the formulas in this section.

PART 56—VOLUNTARY GRADING OF SHELL EGGS

■ 25. The authority citation for part 56 continues to read as follows:

Authority: 7 U.S.C. 1621–1627.

■ 26. Revise § 56.46 to read as follows:

§ 56.46 On a fee basis.

(a) Unless otherwise provided in this part, the fees to be charged and collected for any service performed, in accordance with this part, on a fee basis shall be based on the applicable formulas specified in this section. For each calendar year or crop year, AMS will calculate the rate for grading or audit services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS grading or audit program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS grading or audit program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS grading or audit program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b)(1) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS grading or audit program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The total AMS grading or audit program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total AMS grading or audit program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(2) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

(c) Fees for grading services will be based on the time required to perform the services. The hourly charges shall include the time actually required to perform the grading, waiting time, travel time, and any clerical costs involved in issuing a certificate.

(d) Fees for audit services will be based on the time and expenses required to perform the audit. The hourly charge shall include the time actually required to perform the audit, waiting time, travel time, and any clerical costs involved in issuing an audit report.

■ 27. Amend § 56.52 by:

■ a. Revising the introductory text;

■ b. Revising the second sentence of paragraph (a)(1); and

■ c. Revising the first sentence of paragraph (a)(2) introductory text.

The revisions read as follows:

§ 56.52 Charges for continuous grading performed on a resident basis.

Fees to be charged and collected for any grading service, other than for an appeal grading, on a resident grading basis, shall be calculated as described in this part. The fees to be charged for any appeal grading shall be as provided in § 56.47.

(a) * * *

(1) * * * The costs for completing the plant survey shall be borne by the applicant on a fee basis as described in § 56.46. * * *

(2) Charges for the cost of each grader assigned to a plant will be calculated as described in section 56.46 of this part, except that no charge will be assessed when the assigned grader is temporarily reassigned by AMS to perform grading service for other than the applicant.

* * *

* * * * *

■ 28. Amend § 56.54 by revising the introductory text and paragraph (a)(1) introductory text to read as follows:

§ 56.54 Charges for continuous grading performed on a nonresident basis.

Fees to be charged and collected for grading service on a nonresident grading basis, shall be calculated as described in this part. The fees to be charged for any appeal grading shall be calculated as provided in § 56.47.

(a) * * *

(1) A charge for the salary and other costs, calculated as described in § 56.46 of this part, for each grader while assigned to a plant, except that no charge will be made when the assigned grader is temporarily reassigned by AMS to perform grading service for other than the applicant. Charges to plants are as follows:

* * * * *

PART 58—GRADING AND INSPECTION, GENERAL SPECIFICATIONS FOR APPROVED PLANTS AND STANDARDS FOR GRADES OF DAIRY PRODUCTS

■ 29. The authority citation for 7 CFR part 58 continues to read as follows:

Authority: 7 U.S.C. 1621–1627.

■ 30. Revise § 58.39 to read as follows:

§ 58.39 Fees for holiday or other nonworktime.

If an applicant requests that inspection or grading service be performed on a holiday, Saturday, or Sunday or in excess of each 8-hour shift Monday through Friday, the applicant shall be charged for such service at a rate determined using the formulas in § 58.43.

■ 31. Revise § 58.43 to read as follows:

§ 58.43 Fees for inspection, grading, sampling, and certification.

(a) Unless otherwise provided in this part, the fees to be charged and collected for any service performed, in accordance with this part, on a fee basis shall be based on the applicable formulas specified in this section. For each calendar year, AMS will calculate the rate for grading, certification, or inspection services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS grading, certification, or inspection program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS grading, certification, or inspection

program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS grading, certification, or inspection program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(1) *Benefits rate.* The total AMS grading, certification, or inspection program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(2) *Operating rate.* The total AMS grading, certification, or inspection program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(3) *Allowance for bad debt rate.* Total AMS grading, certification, or inspection program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(c) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

■ 32. Revise § 58.45 to read as follows:

§ 58.45 Fees for continuous resident services.

Charges for the inspector(s) and grader(s) assigned to a continuous resident program shall be calculated using the formulas in § 58.43 of this part.

PART 62—LIVESTOCK, MEAT AND OTHER AGRICULTURAL COMMODITIES (QUALITY SYSTEMS VERIFICATION PROGRAMS)

■ 33. The authority citation for part 62 continues to read as follows:

Authority: 7 U.S.C. 1621–1627.

■ 34. Revise § 62.300 to read as follows:

§ 62.300 Fees and other costs of service.

(a) For each calendar year, AMS will calculate the rate for quality systems verification services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS quality systems verification program (QSVP) personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS QSVP personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS QSVP personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b)(1) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS QSVP direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The total AMS QSVP operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total AMS QSVP allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(2) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

(c) *Transportation costs.* Applicants are responsible for paying actual travel costs incurred to provide QSVP services including but not limited to: Mileage charges for use of privately owned vehicles, rental vehicles and gas, parking, tolls, and public transportation costs such as airfare, train, and taxi service.

(d) *Per diem costs.* The applicant is responsible for paying per diem costs incurred to provide QSVP services away from the auditor's or USDA officials' official duty station(s). Per diem costs shall be calculated in accordance with existing travel regulations (41 CFR, subtitle F—Federal Travel Regulation System, chapter 301).

(e) *Other costs.* When costs, other than those costs specified in paragraphs (a), through (c) of this section, are involved in providing the QSVP services, the applicant shall be responsible for these costs. The amount of these costs shall be determined administratively by the Chief. However, the applicant will be notified of these costs before the service is rendered.

PART 70—VOLUNTARY GRADING OF POULTRY AND RABBIT PRODUCTS

■ 35. The authority citation for part 70 continues to read as follows:

Authority: 7 U.S.C. 1621–1627.

■ 36. Revise § 70.71 to read as follows:

§ 70.71 On a fee basis.

Unless otherwise provided in this part, the fees to be charged and collected for any grading or audit service performed in accordance with this part, on a fee basis shall be based on the applicable formulas specified in this section.

(a) For each calendar year, AMS will calculate the rate for grading and audit services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS grading or audit program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS grading or audit program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS grading or audit program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b)(1) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS grading or audit program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The AMS grading or audit program total operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total AMS grading or audit program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(2) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

(c) Fees for grading services will be based on the time required to perform the services. The hourly charges shall include the time actually required to perform the grading, waiting time, travel time, and any clerical costs involved in issuing a certificate.

(d) Fees for audit services will be based on the time and expenses required to perform the audit. The hourly charge shall include the time actually required to perform the audit, waiting time, travel time, and any clerical costs involved in issuing an audit report.

■ 37. Revise § 70.72 to read as follows:

§ 70.72 Fees for appeal grading or review of a grader's decision.

The costs of an appeal grading, or review of a grader's decision, shall be borne by the appellant on a fee basis at rates determined based on the formulas in § 70.71 of this part. If the appeal grading, or review of a grader's decision discloses that a material error was made in the original determination, no fee or expenses will be charged.

■ 38. Amend § 70.76 by revising the introductory text and the first sentence of paragraph (a)(1) introductory text to read as follows:

§ 70.76 Charges for continuous poultry grading performed on a nonresident basis.

Fees to be charged and collected for grading service on a nonresident grading basis shall be based on the formulas provided in this part. The fees to be charged for any appeal grading shall be as provided in § 70.72.

(a) * * *

(1) A charge for the salary and other costs, based on § 70.71 of this part, for each grader while assigned to a plant, except that no charge will be made when the assigned grader is temporarily reassigned by AMS to perform grading service for other than the applicant. * * *

* * * * *

■ 39. Amend § 70.77 by revising the introductory text and paragraphs (a)(1) and (2) to read as follows:

§ 70.77 Charges for continuous poultry or rabbit grading performed on a resident basis.

Fees to be charged and collected for any grading service on a resident grading basis and for an appeal grading shall be determined based on the formulas in section 70.71.

(a) * * *

(1) When a signed application for service has been received, the State supervisor or the supervisor's assistant shall complete a plant survey pursuant to § 70.34. The costs for completing the plant survey shall be borne by the applicant on a fee basis based on the formulas in § 70.71. No charges will be assessed when the application is required because of a change in name or ownership. If service is not installed within 6 months from the date the application is filed, or if service is inactive due to an approved request for removal of a grader(s) for a period of 6 months, the application will be considered terminated, but a new application may be filed at any time. In addition, there will be a charge of $300 if the application is terminated at the request of the applicant for reasons other than for a change in location within 12 months from the date of the inauguration of service.

(2) A charge for the salary and other costs, as specified in this part, for each grader while assigned to a plant, except that no charge will be made when the assigned grader is temporarily reassigned by AMS to perform grading service for other than the applicant.

* * * * *

PART 75—REGULATIONS FOR INSPECTION AND CERTIFICATION OF QUALITY OF AGRICULTURAL AND VEGETABLE SEEDS

■ 40. The authority citation for part 75 continues to read as follows:

Authority: 7 U.S.C. 1622, 1624.

■ 41. Revise § 75.41 to read as follows:

§ 75.41 General.

Fees and charges for inspection or certification services performed by Federal employees shall cover the cost of performing the service. Fees shall be for actual time required to render the service. For each calendar year, AMS will calculate the rate for inspection or certification services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS inspection or certification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS inspection or certification program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS inspection or certification program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(1) *Benefits rate.* The total AMS inspection or certification program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(2) *Operating rate.* The total AMS inspection or certification program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(3) *Allowance for bad debt rate.* Total AMS inspection or certification program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(c) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

■ 42. Amend § 75.42 by revising paragraph (b) to read as follows:

§ 75.42 Sampling and sealing.

* * * * *

(b) When onsite inspection services are performed by Federal employees at the request of the applicant charges will be based on the formulas in § 75.41 of this part.

■ 43. Amend § 75.43 by revising paragraphs (a) and (c) to read as follows:

§ 75.43 Laboratory testing.

* * * * *

(a) Fees assessed based on the formulas in section 75.41 of this part.

* * * * *

(c) The fee for a preliminary report issued prior to completion of testing shall be assessed in accordance with paragraph (a) of this section.

PART 91—SERVICES AND GENERAL INFORMATION (SCIENCE AND TECHNOLOGY)

■ 44. The authority citation for part 91 continues to read as follows:

Authority: 7 U.S.C. 1622, 1624.

■ 45. Amend § 91.37 by:

■ a. Revising paragraphs (a) and (b);

■ b. Removing paragraph (c); and

■ c. Redesignating paragraphs (d) and (e) as paragraphs (c) and (d), respectively.

The revisions read as follows:

§ 91.37 Standard hourly fee rate for laboratory testing, analysis, and other services.

(a) For each fiscal year, AMS will calculate the rate for laboratory testing, analysis, and other services, per hour per program employee using the following formulas:

(1) *Regular rate.* The total AMS laboratory service program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase, plus the benefits rate, plus the operating rate, plus the allowance for bad debt rate. If applicable, travel expenses may also be added to the cost of providing the service.

(2) *Overtime rate.* The total AMS laboratory service program personnel direct pay divided by direct hours, which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 1.5 plus the benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(3) *Holiday rate.* The total AMS laboratory service program personnel direct pay divided by direct hours which is then multiplied by the next year's percentage of cost of living increase and then multiplied by 2, plus benefits rate, plus the operating rate, plus an allowance for bad debt. If applicable, travel expenses may also be added to the cost of providing the service.

(b)(1) For each calendar year, based on previous fiscal year/historical actual costs, AMS will calculate the benefits, operating, and allowance for bad debt components of the regular, overtime and holiday rates as follows:

(i) *Benefits rate.* The total AMS laboratory service program direct benefits costs divided by the total hours (regular, overtime, and holiday) worked, which is then multiplied by the next calendar year's percentage cost of living increase. Some examples of direct benefits are health insurance, retirement, life insurance, and Thrift Savings Plan (TSP) retirement basic and matching contributions.

(ii) *Operating rate.* The total AMS laboratory service program operating costs divided by total hours (regular, overtime, and holiday) worked, which is then multiplied by the percentage of inflation.

(iii) *Allowance for bad debt rate.* Total AMS laboratory service program allowance for bad debt divided by total hours (regular, overtime, and holiday) worked.

(2) The calendar year cost of living expenses and percentage of inflation factors used in the formulas in this section are based on the most recent Office of Management and Budget's Presidential Economic Assumptions.

* * * * *

■ 46. Amend § 91.38 by revising paragraph (a) to read as follows:

§ 91.38 Additional fees for appeal of analysis.

(a) The applicant for appeal sample testing will be charged a fee based on the formulas in § 91.37 of this part.

* * * * *

■ 47. Amend § 91.39 by revising paragraph (a) to read as follows:

§ 91.39 Hourly fee rates for overtime and legal holiday service.

(a) When analytical testing in a Science and Technology facility requires the services of laboratory personnel beyond their regularly assigned tour of duty on any day or on a day outside the established schedule, such services are considered as overtime work. When analytical testing in a Science and Technology facility requires the services of laboratory personnel on a Federal holiday or a day designated in lieu of such a holiday, such services are considered holiday work. Laboratory analyses initiated at the request of the applicant to be rendered on Federal holidays, and on an overtime basis will be charged fees based on the formulas in § 91.37 of this part.

* * * * *

Dated: August 29, 2014.

Rex A. Barnes,

Associate Administrator, Agricultural Marketing Service.

[FR Doc. 2014–21188 Filed 9–9–14; 8:45 am]

BILLING CODE 3410–02–P

SMALL BUSINESS ADMINISTRATION

13 CFR Part 121

RIN 3245–AG51

Small Business Size Standards: Industries With Employee Based Size Standards Not Part of Manufacturing, Wholesale Trade, or Retail Trade

AGENCY: U.S. Small Business Administration.

ACTION: Proposed rule.

SUMMARY: The U.S. Small Business Administration (SBA) proposes to increase employee based small business

size standards for 30 industries and three sub-industries (i.e., exceptions in SBA's table of size standards) and decrease them for three industries that are not part of North American Industry Classification System (NAICS) Sector 31–33 (Manufacturing), Sector 42 (Wholesale Trade), or Sector 44–45 (Retail Trade). SBA also proposes to eliminate the Information Technology Value Added Resellers sub-industry or ''exception'' under NAICS 541519 (Other Computer Related Services) and its 150-employee size standard. Similarly, SBA proposes to eliminate the Offshore Marine Air Transportation Services sub-industry or ''exception'' under NAICS 481211 and 481212 and Offshore Marine Services sub-industry or ''exception'' under NAICS Subsector 483 and their $28 million receipts based size standard. This proposed change includes removing Footnote 15 and Footnote 18 from the table of size standards. As part of its ongoing comprehensive size standards review, SBA evaluated employee based size standards for 57 industries and five sub-industries that are not in NAICS Sectors 31–33, 42, or 44–45 to determine whether they should be retained or revised. This proposed rule is one of a series of proposed rules that will review size standards of industries grouped by NAICS Sector.

DATES: SBA must receive comments to this proposed rule on or before November 10, 2014.

ADDRESSES: Identify your comments by RIN 3245–AG51 and submit them by one of the following methods: (1) Federal eRulemaking Portal: *www.regulations.gov,* following the instructions for submitting comments; or (2) Mail/Hand Delivery/Courier: Khem R. Sharma, Ph.D., Chief, Size Standards Division, 409 Third Street SW., Mail Code 6530, Washington, DC 20416. SBA will not accept comments to this proposed rule submitted by email.

SBA will post all comments to this proposed rule on *www.regulations.gov.* If you wish to submit confidential business information (CBI) as defined in the User Notice at *www.regulations.gov,* you must submit such information to U.S. Small Business Administration, Khem R. Sharma, Ph.D., Chief, Size Standards Division, 409 Third Street SW., Mail Code 6530, Washington, DC 20416, or send an email to *sizestandards@sba.gov.* Highlight the information that you consider to be CBI and explain why you believe SBA should hold this information as confidential. SBA will review your information and determine whether it will make the information public.

FOR FURTHER INFORMATION CONTACT: Jorge Laboy-Bruno, Ph.D., Economist, Size Standards Division, (202) 205–6618 or *sizestandards@sba.gov.*

SUPPLEMENTARY INFORMATION:

Introduction

In an effort to remove possible public confusion, SBA would like to explain the changes made to the title of this rule. When SBA initially announced in the Fall 2012 Unified Agenda of Federal Regulatory and Deregulatory Actions, 78 FR 1636 at 1639 (January 8, 2013) (Item #393) that it intended to propose this rule, it was titled ''Small Business Size Standards for Other Industries With Employee Based Size Standards not Part of Manufacturing or Wholesale Trade.'' under Regulatory Information Number (RIN) 3245–AG51. SBA later realized that this proposed rule also does not address two industries with employee based size standards in Retail Trade (NAICS Sector 44–45). Those size standards will be addressed in a separate rule with industries in Wholesale Trade (NAICS Sector 42) under RIN 3245–AG49. As a result, the title of this proposed rule is changed to read ''Small Business Size Standards: Industries with Employee Based Size Standards Not Part of Manufacturing, Wholesale Trade, or Retail Trade.'' SBA believes that the title change of the rule will make it easier for affected parties to understand the scope of its coverage, and will engender more public comment and involvement.

To determine eligibility for Federal small business assistance, SBA establishes small business size definitions (referred to as size standards) for private sector industries in the United States. SBA uses two primary measures of business size—average annual receipts and average number of employees. SBA uses financial assets, electric output, and refining capacity to measure the size of a few specialized industries. In addition, SBA's Small Business Investment Company (SBIC), Certified Development Company (504), and 7(a) Loan Programs use either the industry based size standards or net worth and net income based alternative size standards to determine eligibility for those programs. At the start of the SBA's current comprehensive size standards review when the size standards were based on NAICS 2007, there were 41 different size standards covering 1,141 NAICS industries and 18 subindustry activities (''exceptions'' in SBA's table of size standards). Thirty-one of these size levels were based on average annual receipts, seven were based on average number of employees, and three were based on other measures. Presently, under NAICS 2012, there are 28 different size standards, covering 1,031 industries and 16 ''exceptions''. Of these, 533 are based on average annual receipts, 509 on number of employees (one of which also includes barrels per day total capacity), and five on average assets.

Over the years, SBA has received comments that its size standards have not kept up with changes in the economy, in particular the changes in the Federal contracting marketplace and industry structure. The last time SBA conducted a comprehensive size standards review was during the late 1970s and early 1980s. Since then, most reviews of size standards were limited to a few specific industries, mostly with receipts based size standards, in response to requests from the public and Federal agencies. SBA reviews all monetary based size standards (except for statutorily set size standards in NAICS Sector 11) for inflation at least once every five years. SBA's latest inflation adjustment to size standards was published in the **Federal Register** on June 12, 2014 (79 FR 33647). However, the vast majority of employee based size standards have not been reviewed since they were first established.

Because of changes in the Federal marketplace and industry structure since the last comprehensive size standards review, SBA recognizes that current data may no longer support some of its existing size standards. Accordingly, in 2007, SBA began a comprehensive review of all size standards to determine if they are consistent with current data, and to adjust them when necessary. In addition, on September 27, 2010, the President of the United States signed the Small Business Jobs Act of 2010 (Jobs Act). The Jobs Act directs SBA to conduct a detailed review of all size standards and to make appropriate adjustments to reflect market conditions. Specifically, the Jobs Act requires SBA to conduct a detailed review of at least one-third of all size standards during every 18-month period from the date of its enactment. In addition, the Jobs Act requires that SBA review all size standards not less frequently than once every five years thereafter. Reviewing existing small business size standards and making appropriate adjustments based on the latest available data are also consistent with Executive Order 13563 on improving regulation and regulatory review.

Rather than review all size standards at one time, SBA is reviewing size standards on a Sector by Sector basis. A NAICS Sector generally includes 25 to 75 industries, except for NAICS Sector 31–33, Manufacturing, which has considerably more industries. As stated above, this proposed rule covers industries with employee based size standards that are not part of NAICS Sector 31–33 (Manufacturing), Sector 42 (Wholesale Trade), or Sector 44–45 (Retail Trade). These include one industry each in NAICS Sector 11 (Agriculture, Forestry, Fishing and Hunting), Sector 22 (Utilities) and Sector 52 (Finance and Insurance), 25 industries in Sector 21 (Mining, Quarrying, and Oil and Gas Extraction), 15 industries in Sector 48–49 (Transportation and Warehousing), 12 industries in Sector 51 (Information), two industries and four sub-industries (''exceptions'') in Sector 54 (Professional, Scientific and Technical Services), and one sub-industry (''exception'') in Sector 56 (Administrative and Support, Waste Management and Remediation Services) that currently have employee based size standards. Once SBA completes its review of size standards for industries in a NAICS Sector, it issues a proposed rule to revise size standards for those industries based on latest industry and program data available and other relevant factors, such as current economic climate and SBA's and other government's programs and policies to help small businesses.

Below is a discussion of SBA's size standards methodology for establishing employee based size standards that the Agency applied to this proposed rule, including analyses of industry structure, Federal contracting factors, the impact of the proposed revisions to size standards on SBA's financial assistance to small businesses, and the evaluation of whether a revised size standard would exclude dominant firms from being considered small.

Size Standards Methodology

In conjunction with the current comprehensive size standards review, SBA developed a ''Size Standards Methodology'' (methodology) for developing, reviewing, and modifying size standards when necessary. SBA published the document on its Web site at *www.sba.gov/size* for public review and comments, and has also included it as a supporting document in the electronic docket of this proposed rule at *www.regulations.gov.* It should be noted that SBA does not apply all features of its methodology to all industries because not all features are appropriate for every industry. For example, since all industries that are being reviewed in this proposed rule have employee based size standards, the methodology described in this proposed rule relates only to establishing employee based size standards. However, the methodology is available in its entirety for parties who have an interest in SBA's overall approach to establishing, evaluating, and modifying small business size standards. SBA always explains its methodology and analysis in individual proposed and final rules relating to size standards for specific industries.

SBA welcomes comments from the public on a number of issues concerning its ''Size Standards Methodology,'' that the Agency has applied in this proposed rule, such as whether there are other approaches to establishing and modifying size standards; whether there are alternative or additional factors that SBA should consider; whether SBA's approach to small business size standards makes sense in the current economic environment; whether SBA's use of anchor size standards is appropriate; whether there are gaps in SBA's methodology because the data it uses are not current or sufficiently comprehensive; and whether there are other data, facts, and/or issues that SBA should consider. Comments on SBA's size standards methodology should be submitted via: (1) The Federal eRulemaking Portal: *www.regulations.gov,* following the instructions for submitting comments; the docket number is SBA–2009–0008, or (2) Mail/Hand Delivery/Courier: Khem R. Sharma, Ph.D., Chief, Size Standards Division, 409 Third Street SW., Mail Code 6530, Washington, DC 20416. As it will do with comments to this and other proposed rules, SBA will post all comments on its methodology on *www.regulations.gov.* As of April 30, 2014, SBA has received 17 comments to its ''Size Standards Methodology.'' The comments are available to the public at *www.regulations.gov.* SBA continues to welcome comments on its methodology from interested parties. SBA will not accept comments submitted by email.

Congress granted SBA's Administrator the discretion to establish detailed small business size standards. 15 U.S.C. 632(a)(2). Specifically, Section 3(a)(3) of the Small Business Act (15 U.S.C. 632(a)(3)) requires that ''. . . the [SBA] Administrator shall ensure that the size standard varies from industry to industry to the extent necessary to reflect the differing characteristics of the various industries and consider other factors deemed to be relevant by the Administrator.'' Accordingly, the economic structure of an industry is the basis for developing and modifying small business size standards. SBA identifies the small business segment of an industry by examining the latest available data on the economic characteristics defining the industry structure (as described below). In addition, SBA considers current economic conditions, its mission and program objectives, the Administration's current policies, suggestions from industry groups and Federal agencies, and public comments on proposed rules. SBA also examines whether a size standard based on industry and other relevant data successfully excludes businesses that are dominant in the industry.

This proposed rule includes information regarding the factors SBA evaluated and the criteria it used to propose adjustments, where necessary, to employee based size standards for 57 industries and five sub-industries (''exceptions'') covered by this rule. This proposed rule affords the public an opportunity to review and to comment on SBA's proposal to revise size standards for certain industries, as well as on the data and methodology it used to evaluate and revise the size standards.

Industry Analysis

For the current comprehensive size standards review, SBA has established three ''base'' or ''anchor'' size standards—$7.0 million in average annual receipts for industries that have receipts based size standards, 500 employees for manufacturing and other industries that have employee based size standards in nonmanufacturing sectors (except for Wholesale Trade and Retail Trade), and 100 employees for industries in the Wholesale Trade Sector. SBA established 500 employees as the anchor size standard for manufacturing industries at its inception in 1953. Shortly thereafter, SBA established $1 million in average annual receipts as the anchor size standard for nonmanufacturing industries. SBA has periodically increased the receipts based anchor size standard for inflation, and today it is $7 million. Since 1986, the size standard for all industries in the Wholesale Trade Sector for SBA's financial assistance and for most Federal programs has been 100 employees. Presently, SBA also has employee based size standards for two industries in Retail Trade, namely NAICS 441110, New Car Dealers (200 employees) and NAICS 454310, Fuel Dealers (50 employees). However, NAICS codes for the Wholesale and Retail Trade Sectors and their size

standards do not apply to Federal procurement programs. Rather, for Federal procurement the size standard for all industries in Wholesale Trade (NAICS Sector 42) and for all industries in Retail Trade (NAICS Sector 44–45) is 500 employees under the SBA's non-manufacturer rule (13 CFR 121.406(b)).

These long-standing anchor size standards have stood the test of time and gained legitimacy through practice and general public acceptance. An anchor is neither a minimum nor a maximum size standard. It is a common size standard for a large number of industries that have similar economic characteristics and serves as a reference point in evaluating size standards for individual industries. SBA uses the anchor in lieu of trying to establish precise small business size standards for each industry. Otherwise, theoretically, the number of size standards might be as high as the number of industries for which SBA establishes size standards (i.e., more than 1,000). Furthermore, the data SBA analyzes are static, while the U.S. economy is not. Hence, absolute precision is impossible. Similarly, because of the disclosure problem in getting the distribution of firms by more granular size classes, the 2007 Economic Census tabulation (the latest available when this proposed rule was prepared) that SBA received from the U.S. Census Bureau for current size standards review would not allow an accurate regulatory impact analysis of size standards changes if precise, separate size standards were established for each industry. SBA presumes an anchor size standard is appropriate for a particular industry unless that industry displays economic characteristics that are considerably different from other industries with the same anchor size standard.

When evaluating a size standard, SBA compares the economic characteristics of the industry under review to the average characteristics of industries with one of the three anchor size standards (referred to as the ''anchor comparison group''). This allows SBA to assess the industry structure and to determine whether the industry is appreciably different from the other industries in the anchor comparison group. If the characteristics of a specific industry under review are similar to the average characteristics of the anchor comparison group, the anchor size standard is generally appropriate for that industry. SBA may consider adopting a size standard below the anchor when: (1) All or most of the industry characteristics are significantly smaller than the average characteristics of the anchor comparison group; or (2) other industry considerations strongly suggest that the anchor size standard would be an unreasonably high size standard for the industry.

If the specific industry's characteristics are significantly higher than those of the anchor comparison group, then a size standard higher than the anchor size standard may be appropriate. The larger the differences are between the characteristics of the industry under review and those in the anchor comparison group, the larger will be the difference between the appropriate industry size standard and the anchor size standard. To determine a size standard above the anchor size standard, SBA analyzes the characteristics of a second comparison group.

For industries with employee based size standards reviewed in this proposed rule, SBA has developed a second comparison group consisting of industries that have the highest of employee based size standards. To determine a size standard above the 500-employee anchor size standard, SBA analyzes the characteristics of this second comparison group. The industries in this group have size standards of either 1,000 employees or 1,500 employees; the weighted average size standard for the group is 1,323 employees. SBA refers to this comparison group as the ''higher level employee based size standard group.''

To examine industry structure, SBA evaluates average firm size, startup costs and entry barriers, industry competition, and distribution of firms by size. SBA also evaluates the level and small business share of total Federal contracting dollars. These are, generally, the five primary factors SBA examines when establishing or revising a size standard for an industry. However, SBA will also consider and evaluate other information that it believes is relevant to a particular industry (such as technological changes, growth trends, SBA financial assistance, other program factors, etc.). SBA also considers possible impacts of size standard revisions on eligibility for Federal small business assistance, current economic conditions, the Administration's policies, and suggestions from industry groups and Federal agencies. Public comments on a proposed rule also provide important additional information. SBA thoroughly reviews all public comments before making a final decision on its proposed size standards.

Below are brief descriptions of each of the five primary factors that SBA has evaluated for each industry and sub-industry covered by this proposed rule. A more detailed description of these factors is provided in SBA's ''Size Standards Methodology,'' available at *http://www.sba.gov/size.*

1. *Average firm size.* SBA computes two measures of average firm size: Simple average and weighted average. For industries with employee based size standards, the simple average firm size is the total number of employees in an industry divided by the total number of firms in that industry. The weighted average firm size is the sum of weighted simple average firm sizes in different employee size classes, where weights are the shares of total industry employees for respective employee size classes. The simple average firm size weighs all firms within an industry equally regardless of their size. The weighted average firm size overcomes that limitation by giving more weight to larger firms.

If the average firm size of an industry is significantly higher than the average firm size of industries in the anchor comparison industry group, this will generally support a size standard higher than the anchor size standard. Conversely, if the industry's average firm size is similar to or significantly lower than that of the anchor comparison industry group, it will be a basis to adopt the anchor size standard, or, in rare cases, a standard lower than the anchor.

2. *Startup costs and entry barriers.* Startup costs reflect a firm's initial size in an industry. New entrants to an industry must have sufficient capital and other assets to start and maintain a viable business. If new firms entering a particular industry have greater capital requirements than firms in industries in the anchor comparison group, this can be a basis for establishing a size standard higher than the anchor size standard. In lieu of actual startup cost data, SBA uses average assets as a proxy to measure the capital requirements for new entrants to an industry.

To calculate average assets, SBA begins with the sales to total assets ratio for an industry from the Risk Management Association's Annual eStatement Studies. SBA then applies these ratios to the average receipts of firms in that industry. An industry with average assets that are significantly higher than those of the anchor comparison group is likely to have higher startup costs; this in turn will support a size standard higher than the anchor. Conversely, an industry with average assets that are similar to or lower than those of the anchor comparison group is likely to have lower startup costs; this will support the anchor standard or one lower than the anchor.

3. *Industry competition.* Industry competition is generally measured by the share of total industry receipts generated by the largest firms in an industry. SBA generally evaluates the share of industry receipts generated by the four largest firms in each industry. This is referred to as the ''four-firm concentration ratio,'' a commonly used economic measure of market competition. If a significant share of economic activity within the industry is concentrated among a few relatively large companies, all else being equal, SBA will establish a size standard higher than the anchor size standard. SBA does not consider the four-firm concentration ratio as an important factor in assessing a size standard if its share of economic activity of the largest four firms within the industry is less than 40 percent. For an industry with a four-firm concentration ratio of 40 percent or more, SBA compares the average employee size of the four largest firms in the industry with the four largest firms' average employee size for the anchor and higher level size comparison groups to determine an employee size standard for that industry.

4. *Distribution of firms by size.* For employee based size standards, SBA examines the shares of industry total receipts accounted for by firms of various employment size classes in an industry. This is an additional factor SBA examines in assessing industry competition. If most of an industry's economic activity is attributable to smaller firms, this generally indicates that small businesses are competitive in that industry. This can, generally, support adopting the anchor size standard. If most of an industry's economic activity is attributable to larger firms, this indicates that small businesses are not competitive in that industry. This can support adopting a size standard above the anchor.

Concentration is a measure of inequality of distribution. To determine the degree of inequality of distribution in an industry, SBA computes the Gini coefficient by constructing the Lorenz curve. The Lorenz curve presents the cumulative percentages of units (firms) in various employee size classes along the horizontal axis and the cumulative percentages of receipts (or other measures of size) in the same employee size classes along the vertical axis. (For further detail, please refer to SBA's ''Size Standards Methodology'' on its Web site at *www.sba.gov/size.*) Gini coefficient values vary from zero to one. If receipts are distributed equally among all the firms in an industry, the value of the Gini coefficient will equal zero. If an industry's total receipts are attributed to a single firm, the Gini coefficient will equal one.

SBA compares the Gini coefficient value for an industry with that for industries in the anchor comparison group. If the Gini coefficient value for an industry is higher than it is for industries in the anchor comparison industry group this may, all else being equal, warrant a size standard higher than the anchor. Conversely, if an industry's Gini coefficient is similar to or lower than that for the anchor group, the anchor standard, or in some cases a standard lower than the anchor, may be adopted.

5. *Impact on Federal contracting and SBA loan programs.* SBA examines the possible impact a size standard change may have on Federal small business assistance. This most often focuses on the level and small business share of total Federal contracting dollars in the industry in question. In general, if the small business share of total Federal contracting dollars in an industry with significant Federal contracting is appreciably less than the small business share of the industry's total receipts, this could justify considering a size standard higher than the existing size standard. If the small business share of an industry's total Federal contracting dollars is similar to or higher than the small business share of its total receipts, this would support the existing size standard for that industry. By comparing the small business share in the Federal market with the small business share in the industry-wide market, SBA accounts for conditions in the Federal market in its size standards analysis. The disparity between the small business Federal market share and small business industry-wide share may be due to various factors, such as extensive administrative and compliance requirements associated with Federal contracts, the different skill set required for Federal contracts as compared to typical commercial contracting work, and the size of Federal contracts. Data permitting, SBA will also examine these, as well as other factors that are likely to influence the type of firms within an industry that compete for Federal contracts.

SBA considers the Federal contracting factor in an industry's size standards analysis only if the industry's total Federal contracting dollars average $100 million or more annually during the latest three fiscal years. SBA believes that this threshold reflects a significant level of contracting where a revision to a size standard may have an impact on contracting opportunities to small businesses. For industries where total contracting dollars average $100 million or more annually, SBA establishes a size standard higher than the existing size standard if the small business share of total industry receipts is 10 percent or higher than the small business share of total industry receipts. If this difference is less than 10 percent, this would support the existing size standard.

Besides the impact on small business Federal contracting, SBA also evaluates the impact of a proposed size standard revision on SBA's loan programs. For this, SBA examines the data on volume and number of its guaranteed loans within an industry and the size of firms obtaining those loans. This allows SBA to assess whether the existing, proposed, or revised size standard for a particular industry may restrict the level of financial assistance to small firms. If existing size standards are found to have impeded financial assistance to small businesses, higher size standards may be justified. However, if small businesses under existing size standards have been receiving significant amounts of financial assistance through SBA's loan programs, or if the financial assistance has been provided mainly to businesses that are much smaller than the existing size standards, SBA does not consider this factor when determining the size standard.

Sources of Industry and Program Data

SBA's primary source of industry data used in this proposed rule is a special tabulation of the 2007 Economic Census (see *www.census.gov/econ/census07/*) prepared by the U.S. Bureau of the Census (Census Bureau) for SBA. The 2007 Economic Census data are the latest Economic Census data available at the time of drafting this proposed rule. SBA expects to receive the special tabulation from the 2012 Economic Census in 2016 for the next round of comprehensive size standards review. The special tabulation provides SBA with data on the number of firms, number of establishments, number of employees, annual payroll, and annual receipts of companies by Industry (6-digit level), Industry Group (4-digit level), Subsector (3-digit level), and Sector (2-digit level). These data are arrayed by various classes of firms' size based on the overall number of employees and receipts of the entire enterprise (all establishments and affiliated firms) from all industries. The special tabulation enables SBA to evaluate average firm size, the four-firm concentration ratio, and distribution of firms by various receipts and employment size classes. It should be noted that the Economic Census tabulation data on the number of firms,

number of establishments, number of employees, annual payroll, and annual receipts for a particular NAICS Industry category relate to establishments and firms that are primarily engaged in that Industry. To mitigate this limitation of the Economic Census tabulation data, SBA also examines the data from the System of Award Management (SAM) (formerly Central Contractor Registration (CCR)) and FPDS–NG which provides more recent data on Federal contract awards by NAICS code and the actual size of the concerns receiving the contract awards.

In some cases, where data are not available at the 6-digit industry level due to disclosure prohibitions in the Census Bureau's tabulation, SBA either estimates missing values using available relevant data or examines data at a higher level of industry aggregation, such as at the NAICS 2-digit (Sector), 3-digit (Subsector), or 4-digit (Industry Group) level. In some instances, SBA's analysis is based only on those factors for which data are available or estimates of missing values are possible.

The data from the Census Bureau's tabulation are limited to the 6-digit NAICS industry level and hence do not provide economic characteristics at the sub-industry level. Thus, when establishing, reviewing, or modifying size standards at the sub-industry level (that is, one of the ''exceptions'' in SBA's table of size standards), SBA evaluates the data from the U.S. General Service Administration's (GSA) Federal Procurement Data System—Next Generation (FPDS–NG) and SAM (CCR) databases, following a two-step procedure. First, using FPDS–NG, SBA identifies product service codes (PSCs) that correspond to specific sub-industry activities or ''exceptions'' within the applicable NAICS code and then identifies firms that received Federal contracts in those PSCs. Then SBA obtains those firms' revenue and employment data from the SAM/CCR database. SBA uses that data to evaluate the characteristics of businesses that FPDS–NG identifies for those procurements. In this proposed rule, SBA applied this approach to determine industry and Federal contracting factors for ''Information Technology Value Added Resellers,'' which is an exception under NAICS 541519, Other Computer Related Services, and for ''Environmental Remediation Services,'' which is an exception under NAICS 562910, Remediation Services.

Certain industries are not covered by Economic Census and not shown in the special tabulation. For those industries, SBA first identifies companies that are registered in SAM/CCR under those industry NAICS codes and then evaluates their employment and revenue data obtained from their SAM/CCR profiles. SBA applied this approach to evaluate industry factors for two industries in NAICS Sector 48–49 that are not covered by Economic Census, namely Line-Haul Railroads (NAICS 482111), and Short Line Railroads (NAICS 482112).

To calculate average assets, SBA used sales to total assets ratios from the Risk Management Association's Annual eStatement Studies, 2009–2011, available at *http://www.statementstudies.org.*

To evaluate the Federal contracting factor, SBA examined the data from FPDS–NG for fiscal years 2009–2011, available at *https://www.fpds.gov* and 2007 Economic Census tabulation, which is the latest available as stated elsewhere in the rule.

To assess the impact on financial assistance to small businesses, SBA examined its internal data on 7(a) and 504 loan programs for fiscal years 2010–2012.

Data sources and estimation procedures SBA uses in its size standards analysis are documented in detail in SBA's ''Size Standards Methodology'' White Paper, which is available at *www.sba.gov/size.*

Dominance in Field of Operation

Section 3(a) of the Small Business Act (15 U.S.C. 632(a)) defines a small business concern as one that: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) meets a specific small business definition or size standard established by SBA's Administrator. SBA considers as part of its evaluation whether a business concern at a proposed or revised size standard would be dominant in its field of operation. For this, SBA generally examines the industry's market share of firms at the proposed or revised standard. SBA also examines distribution of firms by size to ensure that a contemplated size standard derived from its size standards analysis excludes the largest firms within an industry. Market share, the size distribution and other factors may indicate whether a firm can exercise a major controlling influence on a national basis in an industry where a significant number of business concerns are engaged. If a contemplated size standard includes dominant or the largest firms in an industry, SBA will consider a lower size standard than the one suggested by the analytical results to exclude the dominant and largest firms from being defined as small.

Selection of Size Standards

Among the industries with employee based size standards not in NAICS Sector 31–33 (Manufacturing), Sector 42 (Wholesale Trade), or Sector 44–45 (Retail Trade), currently there are four size standards clusters: 500 employees, 750 employees, 1,000 employees, and 1,500 employees. In this proposed rule, SBA has applied its ''Size Standards Methodology'' for employee based size standards with two modifications. First, to be consistent with its policy of not lowering any size standards in all recent proposed and final rules on receipts based size standards, SBA is retaining the current 500-employee minimum and 1,500-employee maximum size standards for all industries in the Manufacturing Sector and other industries not in the Wholesale and Retail Trade Sectors that have employee based size standards. In its ''Size Standards Methodology,'' SBA had proposed setting the minimum employee based size standard for these industries at 250 employees and the maximum size standard at 1,000 employees. However, doing so would mean lowering existing size standards, thereby making currently small businesses ineligible to continue their participation in Federal small business programs. This would run counter to what SBA and the Administration are doing to help small businesses to create jobs and boost economic growth. Second, SBA is proposing a new 1,250-employee size standard between 1,000 employees and 1,500 employees. This new size standard level maintains the same 250-employee increment between the two successive levels that SBA has below 1,000 employees (500, 750, 1,000). SBA proposes, therefore, to apply one of these five employee based size standards to the analysis of employee based size standards for industries in the Manufacturing Sector and other industries not in the Wholesale and Retail Trade Sectors: 500 employees, 750 employees, 1,000 employees, 1,250 employees, and 1,500 employees.

To simplify size standards and for other reasons, SBA may propose a common size standard for closely related industries. Although the size standard analysis may support a separate size standard for each industry, SBA believes that establishing different size standards for closely related industries may not always be appropriate. For example, in cases where many of the same businesses operate in the same multiple industries, a common size standard for those industries might better reflect the

Federal marketplace. This might also make size standards among related industries more consistent than separate size standards for each of those industries. Whenever SBA proposes a common size standard for closely related industries it will provide its justification.

Evaluation of Industry Structure

In this proposed rule, SBA evaluated 57 industries and five sub-industries (''exceptions'') with employee based size standards that are not in NAICS Sectors 31–33, 42, or 44–45 to assess the appropriateness of their current size standards. As described above, SBA compared data on the economic characteristics of each of those industries and sub-industries to the average characteristics of industries in two comparison groups. The first comparison group consists of all industries in Manufacturing and industries not in Wholesale Trade or Retail Trade with 500-employee size standards. SBA refers this group of industries to as the ''employee based anchor comparison group.'' Because the goal of SBA's review is to assess whether a specific industry's size standard should be the same as or different from the anchor size standard, this is the most logical group of industries to analyze. In addition, this group includes a sufficient number of firms to provide a meaningful assessment and comparison of industry characteristics.

As stated previously, if the characteristics of an industry are similar to the average characteristics of industries in the anchor comparison group, the anchor size standard is generally appropriate for that industry. If an industry's structure is significantly different from industries in the anchor group, a size standard lower or higher than the anchor size standard might be appropriate. The proposed new size standard is based on the difference between the characteristics of the anchor comparison group and a second industry comparison group. As described above, the second comparison group for employee based standards consists of industries with either 1,000-employee or 1,500-employee size standards. The weighted average size standard for this group is 1,323 employees. SBA refers this group of industries to as the ''higher level employee based size standard comparison group.'' SBA determines differences in industry structure between an industry under review and the industries in the two comparison groups by comparing data on each of the industry factors, including average firm size, average assets size, the four-firm concentration ratio, and the Gini coefficient of distribution of firms by size. Table 1, Average Characteristics of Employee Based Comparison Groups, shows the average firm size (both simple and weighted), average assets size, four-firm concentration ratio, average employees of the four largest firms, and the Gini coefficient for both anchor level and higher level comparison groups for employee based size standards.

TABLE 1—AVERAGE CHARACTERISTICS OF EMPLOYEE BASED COMPARISON GROUPS

Employee based comparison group	Average firm size (number of employees)		Average assets size ($ million)	Four-firm concentration ratio (%)	Average employees of four largest firms *	Gini coefficient
	Simple average	Weighted average				
.						
Anchor Level	51	322	$6.4	35.9	1,267	0.765
Higher Level	136	602	37.0	64.3	2,033	0.808

* To be used for industries with a four-firm concentration ratio of 40% or greater.

Derivation of Size Standards Based on Industry Factors

For each industry factor in Table 1, Average Characteristics of Employee Based Comparison Groups, SBA derives a separate size standard based on the differences between the values for an industry under review and the values for the two comparison groups. If the industry value for a particular factor is near the corresponding factor for the anchor comparison group, the 500-employee anchor size standard is appropriate for that factor.

An industry factor significantly above or below the anchor comparison group will generally imply a size standard for that industry above or below the 500-employee anchor. The new size standard in these cases is based on the proportional difference between the industry value and the values for the two comparison groups.

For example, an industry's simple average firm size of 75 employees will support a 750-employee size standard. The 75-employee level is 28.2 percent between 51 employees for the anchor comparison group and 136 employees for the higher level comparison group ((75 employees − 51 employees) ÷ (136 employees − 51 employees) = 0.282 or 28.2%). This proportional difference is applied to the difference between the size standard of 500 employees for the anchor level size standard group and average size standard of 1,323 employees for the higher level size standard group and then added to 500 employees to estimate a size standard of 733 employees ([{1,323 employees − 500 employees} * 0.282] + 500 employees = 733 employees). The final step is to round the estimated 733-employee size standard to the nearest size standard level, which in this example is 750 employees.

SBA applies the above calculation to derive a size standard for each industry factor. Detailed formulas involved in these calculations are presented in SBA's ''Size Standards Methodology'' which is available on its Web site at *www.sba.gov/size.* As stated above, SBA has also included its ''Size Standards Methodology'' as a supporting document in the electronic docket of this proposed rule at *www.regulations.gov.* (However, it should be noted that figures in the ''Size Standards Methodology'' White Paper are based on 2002 Economic Census data and are different from those presented in this proposed rule. That is because when SBA prepared its ''Size Standards Methodology,'' the 2007 Economic Census data were not yet available). Table 2, Values of Industry Factors and Supported Size Standards, below, shows ranges of values for each industry factor and the levels of size standards supported by those values.

TABLE 2—VALUES OF INDUSTRY FACTORS AND SUPPORTED SIZE STANDARDS

If simple average firm size (number of employees)	*Or if* weighted average firm size (number of employees)	*Or if* average assets size ($ million)	*Or if* average number employees of largest four firms	*Or if* Gini coefficient	Then implied size standard is (number of employees)
< 63.9	< 364.5	< 11.1	< 1,383.3	< 0.772	500
63.9 to < 89.7	364.5 to < 449.6	11.1 to < 20.3	1,383.3 to < 1,616.0	0.772 to < 0.785	750
89.7 to < 115.6	449.6 to < 534.6	20.3 to < 29.6	1,616.0 to < 1,848.7	0.785 to < 0.798	1,000
115.6 to < 141.4	534.6 to < 619.7	29.6 to < 38.9	1,848.7 to < 2,081.4	0.798 to < 0.811	1,250
≥ 141.4	≥ 619.7	≥ 38.9	≥ 2,081.4	≥ 0.811	1,500

Derivation of Size Standard Based on Federal Contracting Factor

Besides industry structure, SBA also evaluates Federal contracting data to assess the success of small businesses in getting Federal contracts under the existing size standards. For industries where Federal contract dollars average $100 million or more annually and the small business share of total Federal contracting dollars is 10 to 30 percent lower than the small business share of total industry receipts, SBA has designated a size standard one level higher than their current size standard. For industries where the small business share of total Federal contracting dollars is more than 30 percent lower than the small business share of total industry receipts, SBA has designated a size standard two levels higher than the current size standard. For industries, where this difference is less than 10 percent, SBA applies the existing size standard for the Federal contracting factor.

Because of the complex relationships among several variables affecting small business participation in the Federal marketplace, SBA has chosen not to designate a size standard for the Federal contracting factor alone that is more than two levels above the current size standard. SBA believes that a larger adjustment to size standards based on Federal contracting activity should be based on a more detailed analysis of the impact of any subsequent revision to the current size standard. In limited situations, however, SBA may conduct a more extensive examination of Federal contracting experience. This may support a different size standard than indicated by this general rule and take into consideration significant and unique aspects of small business competitiveness in the Federal contract market. SBA welcomes comments on its methodology for incorporating the Federal contracting factor in its size standard analysis and suggestions for alternative methods and other relevant information on small business experience in the Federal contract market that SBA should consider.

Of the 57 industries reviewed in this proposed rule, 14 averaged $100 million or more annually in Federal contracting during fiscal years 2009–2011 and thus, the Federal contracting factor for those industries was significant. Of the 14 industries, the difference between the small business share of total industry receipts and small business share of Federal contracting dollars was less than 10 percent for seven industries and, in this proposed rule, SBA applied the existing size standard to each. The difference was between 10 and 30 percent for three industries for which a size standard one level higher than the existing size standard was applied. Finally, in four industries, this difference was more than 30 percent and a size standard that was two levels higher than the existing size standard was applied.

New Size Standards Based on Industry and Federal Contracting Factors

Table 3, Size Standards Supported by Each Factor for Each Industry (No. of Employees), below, shows the results of analyses of industry and Federal contracting factors for each industry covered by this proposed rule. Many NAICS industries in columns 2, 3, 4, 6, and 7 show two numbers. The upper number is the value for the industry factor shown on the top of the column and the lower number is the size standard supported by that factor. For the four-firm concentration ratio, SBA estimates a size standard only if its value is 40 percent or more. If the four-firm concentration ratio for an industry is less than 40 percent, SBA does not estimate a size standard for that factor. If the four-firm concentration ratio is 40 percent or more, SBA indicates in column 6 the average size of the industry's four largest firms together with a size standard based on that average. Column 9 shows a calculated new size standard for each industry. This is the average of the size standards supported by each factor, rounded to the nearest fixed size level. However, the size standards for the simple average and weighted average firm size are averaged together, and therefore receive a single weight. Analytical details involved in the averaging procedure are described in SBA's ''Size Standards Methodology.'' For comparison with the new standards, the current size standards are in column 10 of Table 3.

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NO. OF EMPLOYEES)

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS Code NAICS industry title	Simple average firm size (number of employees)	Weighted average firm size (number of employees)	Average assets size ($ million)	Four-firm ratio %	Four-firm average size (number of employees)	Gini coefficient	Federal contract factor (%)	Calculated size standard (number of employees)	Current size standard (number of employees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
113310 Logging	6	31	$0.5	.....	.....	0.332	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
211111 Crude Petroleum and Natural Gas Extraction	28	790	$70.5	31.1	.....	0.910	−3.3	.....	.....
	500	1,500	1,500	.....	.....	1,500	500	1,250	500
211112 Natural Gas Liquid Extraction	65	175	$234.1	50.7	588	0.702	.....	.....	.....
	750	500	1,500	.....	500	500	.....	750	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NO. OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS Code NAICS industry title	Simple average firm size (number of employees)	Weighted average firm size (number of employees)	Average assets size ($ million)	Four-firm ratio %	Four-firm average size (number of employees)	Gini coefficient	Federal contract factor (%)	Calculated size standard (number of employees)	Current size standard (number of employees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
212111 Bituminous Coal and Lignite Surface Mining	99	712	$34.6	36.5	.....	0.844	.....	.....	.....
	1,000	1,500	1,250	.....	.....	1,500	.....	1,250	500
212112 Bituminous Coal Underground Mining	163	1,062	$40.3	42.5	3,490	0.853	.....	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	.....	1,500	500
212113 Anthracite Mining	12	29	$4.5	54.2	46	0.429	.....	.....	.....
	500	500	500	.....	500	500	.....	500	500
212210 Iron Ore Mining	356	2,352	.....	99.1	1,220	0.716	.....	.....	.....
	1,500	1,500	.....	.....	500	500	.....	750	500
212221 Gold Ore Mining	114	2,207	.....	.....	.....	0.896	.....	.....	.....
	1,000	1,500	.....	.....	.....	1,500	.....	1,500	500
212222 Silver Ore Mining	69	124	.....	.....	.....	0.368	.....	.....	.....
	750	500	.....	.....	.....	500	.....	750	500
212231 Lead Ore and Zinc Ore Mining	251	457	.....	89.6	436	0.457	.....	.....	.....
	1,500	1,000	.....	.....	500	500	.....	750	500
212234 Copper Ore and Nickel Ore Mining	472	2,215	.....	93.0	2,369	0.818	.....	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	.....	1,500	500
212291 Uranium-Radium-Vanadium Ore Mining	20	62	.....	92.7	85	0.603	.....	.....	.....
	500	500	.....		500	500	.....	500	500
212299 All Other Metal Ore Mining	218	569	.....	91.8	913	0.680	.....	.....	.....
	1,500	1,250	.....	.....	500	500	.....	750	500
212311 Dimension Stone Mining and Quarrying	15	44	.....	12.3	.....	0.463	.....	.....	.....
	500	500	.....	.....	.....	500	.....	500	500
212312 Crushed and Broken Limestone Mining and Quarrying	53	398	$15.7	37.1	.....	0.789	.....	.....	.....
	500	750	750	.....	.....	1,000	.....	750	500
212313 Crushed and Broken Granite Mining and Quarrying	50	361	.....	62.1	1,026	0.822	.....	.....	.....
	500	500	.....	.....	500	1,500	.....	750	500
212319 Other Crushed and Broken Stone Mining and Quarrying	24	94	$6.1	28.5	.....	0.693	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
212321 Construction Sand and Gravel Mining	19	96	$4.1	25.5	.....	0.683	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
212322 Industrial Sand Mining	36	183	.....	66.5	425	0.652	.....	.....	.....
	500	500	.....	.....	500	500	.....	500	500
212324 Kaolin and Ball Clay Mining	126	258	.....	80.5	499	0.435	.....	.....	.....
	1,250	500	.....	.....	500	500	.....	750	500
212325 Clay and Ceramic and Refractory Minerals Mining	34	218	.....	48.2	286	0.637	.....	.....	.....
	500	500	.....	.....	500	500	.....	500	500
212391 Potash, Soda, and Borate Mineral Mining	245	410	.....	76.0	537	0.295	.....	.....	.....
	1,500	750	.....	.....	500	500	.....	750	500
212392 Phosphate Rock Mining	283	389	.....	.....	.....	0.370	.....	.....	.....
	1,500	750	.....	.....	.....	500	.....	1,000	500
212393 Other Chemical and Fertilizer Mineral Mining	47	170	.....	.....	.....	0.721	.....	.....	.....
	500	500	.....	.....	.....	500	.....	.....	500
212399 All Other Nonmetallic Mineral Mining	21	59	.....	29.0	.....	0.558	.....	.....	.....
	500	500	.....	.....	.....	500	.....	500	500
213111 Drilling Oil and Gas Wells	59	1,559	$9.6	28.4	.....	0.883	.....	.....	.....
	500	1,500	500	.....	.....	1,500	.....	1,000	500
221210 Natural Gas Distribution	187	1,260	$192.6	24.6	.....	0.771	-0.1	.....	.....
	1,500	1,500	1,500	.....	.....	500	500	1,000	500
481111 Scheduled Passenger Air Transportation	1,197	18,348	$188.6	52.3	51,290	0.923	.....	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	.....	1,500	1,500
481112 Scheduled Freight Air Transportation	43	311	.....	53.2	671	0.778	−50.3	.....	.....
	500	500	.....	.....	500	750	1,500	750	1,500
481211 Nonscheduled Chartered Passenger Air Transportation	18	130	$4.0	38.9	.....	0.731	−52.2	.....	.....
	500	500	500	.....	.....	500	1,500	750	1,500
481212 Nonscheduled Chartered Freight Air Transportation	25	535	.....	49.7	568	0.820	−81.8	.....	.....
	500	1,000	.....		500	1,500	1,500	1,000	1,500
482111 Line-Haul Railroads	2,046	36,622	.....	54.4	111,250	0.898	.....	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	.....	1,500	1,500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NO. OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS Code NAICS industry title	Simple average firm size (number of employees)	Weighted average firm size (number of employees)	Average assets size ($ million)	Four-firm ratio %	Four-firm average size (number of employees)	Gini coefficient	Federal contract factor (%)	Calculated size standard (number of employees)	Current size standard (number of employees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
482112 Short Line Railroads	1,777	38,435	.....	49.6	102,744	0.850	.....	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	.....	1,500	500
483111 Deep Sea Freight Transportation	55	270	.....	40.0	654	0.738	−14.8	.....	.....
	500	500	.....	.....	500	500	750	500	500
483112 Deep Sea Passenger Transportation	379	3,322	.....	92.8	4,276	0.869	.....	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	.....	1,500	500
483113 Coastal and Great Lakes Freight Transportation	58	302	$42.1	28.3	.....	0.750	.....	.....	.....
	500	500	1,500	.....	.....	500	.....	750	500
483114 Coastal and Great Lakes Passenger Transportation	20	140	.....	39.6	.....	0.679	.....	.....	.....
	500	500	.....	.....	.....	500	.....	500	500
483211 Inland Water Freight Transportation	53	284	$17.6	46.1	1,187	0.815	.....	.....	.....
	500	500	750	.....	500	1,500	.....	750	500
483212 Inland Water Passenger Transportation	12	57	.....	28.1	.....	0.604	.....	.....	.....
	500	500	.....	.....	.....	500	.....	500	500
486110 Pipeline Transportation of Crude Oil	146	324	$41.9	55.1	917	0.360	.....	.....	.....
	1,500	500	1,500	.....	500	500	.....	1,000	1,500
486910 Pipeline Transportation of Refined Petroleum Products	113	292	.....	53.3	764	0.198	.....	.....	.....
	1,000	500	.....	.....	500	500	.....	500	1,500
492110 Couriers and Express Delivery Services	149	63,035	$4.5	94.0	119,867	0.973	7.8	.....	.....
	1,500	1,500	500	.....	1,500	1,500	1,500	1,250	1,500
511110 Newspaper Publishers	67	3,938	$5.5	29.4	.....	0.929	.....	.....	.....
	750	1,500	500	.....	.....	1,500	.....	1,000	500
511120 Periodical Publishers	25	373	$3.7	26.7	.....	0.861	−14.0	.....	.....
	500	750	500	.....	.....	1,500	750	1,000	500
511130 Book Publishers	37	1,230	$6.6	33.4	.....	0.898	.....	.....	.....
	500	1,500	500	.....	.....	1,500	.....	1,000	500
511140 Directory and Mailing List Publishers	55	1,583	$7.0	73.8	8,777	0.915	.....	.....	.....
	500	1,500	500	.....	1,500	1,500	.....	1,250	500
511191 Greeting Card Publishers	138	2,981	.....	90.9	2,512	0.947	.....	.....	.....
	1,250	1,500	.....	.....	1,500	1,500	.....	1,500	500
511199 All Other Publishers	15	254	$1.3	33.7	.....	0.726	−5.2	.....	.....
	500	500	500	.....	.....	500	500	500	500
512220 Integrated Record Production/Distribution	25	1,451	.....	90.4	1,888	0.947	.....	.....	.....
	500	1,500	.....	.....	1,250	1,500	.....	1,250	750
512230 Music Publishers	9	135	.....	57.1	386	0.862	.....	.....	.....
	500	500	.....	.....	500	1,500	.....	750	500
517110 Wired Telecommunications Carriers	255	16,436	$69.8	56.8	137,817	0.961	20.2	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	1,500	1,500	1,500
517210 Wireless Telecommunications Carriers (except Satellite)	172	10,785	$50.9	80.2	55,047	0.976	10.0	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	1,500	1,500	1,500
517911 Telecommunications Resellers	14	117	$2.4	30.2	.....	0.731	−69.5	.....	.....
	500	500	500	.....	.....	500	1,500	750	1,500
519130 Internet Publishing and Broadcasting and Web Search Portals	23	375	$4.0	51.6	5,407	0.889	.....	.....	.....
	500	750	500	.....	1,500	1,500	.....	1,000	500
524126 Direct Property and Casualty Insurance Carriers	241	5,593	$358.1	31.9	.....	0.934	.....	.....	.....
	1,500	1,500	1,500	.....	.....	1,500	.....	1,500	1,500
541711 Research and Development in Biotechnology	43	413	.....	35.8	.....	0.802	−16.4	.....	.....
	500	750	.....	.....	.....	1,250	750	1,000	500
541712 Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	61	942	$4.4	21.5	.....	0.814	−2.2	.....	.....
	500	1,500	500	.....	.....	1,500	500	1,000	500

Special Considerations

The Information Technology Value Added Resellers Sub-Industry (''Exception'') Under NAICS 541519, Other Computer Related Services

For Federal contracts that combine substantial services with the acquisition of computer hardware and software, in 2002, SBA proposed to establish a new industry category ''Information Technology Value Added Resellers (ITVAR)'' under NAICS 541519, Other Computer Related Services, with a size standard of 500 employees (67 FR 48419 (July 24, 2002)). In the final rule, SBA adopted the ITVAR industry category, as proposed, with a size standard of 150 employees (68 FR 74833 (December 29, 2003)). Presently, the size standard for rest of NAICS 541519 and other industries in NAICS Industry Group 5415, Computer Systems Design and Related Services, is $25.5 million in average annual receipts.

As stated in Footnote 18 to SBA's table of size standards, for a Federal contract to be classified under the ITVAR sub-industry or ''exception'' and its 150-employee size standard, it must consist of at least 15 percent but not more than 50 percent of value added services as measured by the total price less cost of computer hardware and software, and profit. If the contract consists of less than 15 percent of value added services, it must be classified under the appropriate manufacturing industry. If the contract consists of more than 50 percent of value added services, it must be classified under the NAICS industry that best describes the principal nature of service being procured.

SBA is proposing to eliminate the ITVAR 150-employee size standard exception under NAICS 541519 because it has created some inconsistencies, confusion, and misuse. First, contracting officers are not able to identify size standard exceptions in the FPDS–NG. Thus, the public often believes that a firm that received a contract as a small business under NAICS 541519 and has revenue in excess of the $25.5 million receipts based size standard was not eligible for the award, when in fact the firm may have been eligible if the contracting officer used the 150-employee size standard of the ITVAR exception. This leads to misunderstandings and questions concerning the small business goaling report that SBA must issue every year. Second, SBA's evaluation of FPDS–NG data and solicitations shows many cases where Federal agencies have applied the 150-employee size standard, instead of the receipts based size standard, for contracts that were predominantly for services. This may have benefited more successful, mid-size companies at the expense of those below the receipts based size standard. Additionally, as stated elsewhere in this proposed rule, the data from the Census Bureau's tabulation are limited to the 6-digit NAICS industry level and hence do not provide economic characteristics of firms that are involved in the ITVAR activities. Furthermore, data are not available on Federal ITVAR contracts, as there is no ITVAR PSC in FPDS–NG. The lack of data on characteristics of firms involved in ITVAR activities to evaluate the current 150-employee size standard also justifies SBA's proposal to eliminate the ITVAR sub-industry category.

Moreover, the use of the ITVAR exception size standard is also purely discretionary. Under the terms of the exception as stated in Footnote 18 in SBA's table of size standards, it is clear that the majority of the cost of the contract that qualify under the ITVAR 150-employee size standard will be incurred for supplies. Thus, instead of using the ITVAR 150-employee size standard under NAICS 541519, a contracting officer could use a manufacturing NAICS code and size standard, such as NAICS 334111 (Electronic Computer Manufacturing) with 1,000-employee size standard, to which the non-manufacturer size standard of 500 employees would also apply. Thus, firms may or may not be eligible as a small business for the exact same purchase simply based on the contracting officer's selection of the NAICS code and size standard. This is inconsistent with SBA's small business regulations that the contracting officer must select the NAICS code that best describes the principal purpose of the acquisition (see 13 CFR 121.402(b)). The selection of a NAICS code should never be based on the contracting officer's desire for a particular size standard or firm size.

In addition, the combination of services and supplies in an acquisition is not unique to the information technology industry. Acquisitions across many industries combine supplies and services, yet SBA has not created exceptions to the size standards for these industries. The general principle is that agencies classify procurements based on the principal purpose of the acquisition. Based on the analysis of available industry and Federal contracting data for NAICS Industry Group 5415 and comments to the proposed rule (76 FR 14323 (March 16, 2011)), in 2012, SBA established the appropriate size standard for that industry group, including NAICS 541519, at $25.5 million in average annual receipts (77 FR 7490 (February 10, 2012)). Moreover, it is also unclear from the terms of exception itself whether a contract using the ITVAR 150-employee size standard should be classified as a service contract or a supply contract. This is important because if the contract is a service contract, the offeror must perform at least 50 percent of the cost of the contract incurred for personnel with its own employees, whereas if it is a supply contract the firm must perform at least 50 percent of the cost of manufacturing the supplies, or supply the product of a small manufacturer, unless a waiver is granted under the non-manufacturer rule.

For these reasons, SBA proposes to eliminate the ITVAR sub-industry category (''exception'') under NAICS 541519 and its 150-employee size standard and apply only the $25.5 million receipts based size standard to NAICS 541519. Elimination of the exception will provide clarity to small businesses, contracting officers and the public. If a procuring agency seeks to acquire computer integration, maintenance and other computer related services as well as some computer hardware and it determines that the principal nature of procurement is for services, the agency can classify the contract as a service contract under an appropriate service NAICS code. Similarly, if an agency seeks to procure computer hardware as well as computer integration, maintenance and other computer related services and it determines that the principal nature of procurement is for supplies, the agency can classify the contract as a supply contract under an appropriate manufacturing NAICS code, and the non-manufacturer rule will apply.

SBA's analysis of 2007 Economic Census data shows that 150 employees is more or less equivalent to $25.5 million receipts in NAICS 541519 and that more than 99 percent of firms below the 150-employee level will continue to qualify as small under the $25.5 million receipts based size standard. Thus, the proposed elimination of the ITVAR sub-industry category and its 150-employee size standard, if adopted, will have very minimal impact on businesses below 150 employees. Moreover, these firms would continue to qualify as small businesses for supply contracts for computer hardware and equipment under the manufacturing size standard or under the 500-employee size standard under the non-manufacturer rule.

In view of the proposed elimination of the ITVAR exception under NAICS 541519, SBA also proposes to eliminate Footnote 18 in its entirety from SBA's table of size standards.

Exceptions Under NAICS 541712, Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)

NAICS 541712, Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology), has three sub-industries or ''exceptions''. As stated in Footnote 11 to SBA's table of size standards, for research and development (R&D) contracts requiring the delivery of a manufactured product, the appropriate size standard is that of the corresponding manufacturing industry. The three ''exceptions'' under NAICS 541712 and their corresponding manufacturing industry counterparts and their size standards are shown in Table 4, NAICS 541712 Exceptions and Corresponding Manufacturing Industries and Size Standards, below.

TABLE 4—NAICS 541712 EXCEPTIONS AND CORRESPONDING MANUFACTURING INDUSTRIES AND SIZE STANDARDS

Exception	NAICS code and industry title	Current size standard (number of employees)	Calculated size standard (number of employees) [1]
Aircraft	336411 Aircraft Manufacturing	1,500	1,500
Aircraft Parts and Auxiliary Equipment, and Aircraft Engine Parts.	336412 Aircraft Engine and Engine Parts Manufacturing.	1,000	1,500
	336413 Other Aircraft Part and Auxiliary Equipment.	1,000	1,250
Space Vehicles and Guided Missiles, Their Propulsion Units Parts, and Their Auxiliary Equipment and Parts.	336414 Guided Missile and Space Vehicle Manufacturing.	1,000	1,250
	336415 Guided Missile and Space Vehicle Propulsion Unit and Propulsion Parts Manufacturing.	1,000	1,250
	336419 Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing.	1,000	1,000

[1] From Table 3 of the proposed rule ''Small Business Size Standards for Manufacturing'' (RIN 3245–AG50), published concurrently in the current issue of the **Federal Register**.

To better match the exceptions to the corresponding calculated industry specific size standards in manufacturing, SBA proposes to modify the three exceptions as shown in Table 5, Modified Exceptions and Their Proposed Size Standards, below.

TABLE 5—MODIFIED EXCEPTIONS AND THEIR PROPOSED SIZE STANDARDS

Current		Proposed	
Exception	Size standard (number of employees)	Exception	Size standard (number of employees)
Aircraft	1,500	Aircraft, Aircraft Engine, and Engine Parts	1,500
Aircraft Parts and Auxiliary Equipment, and Aircraft Engine Parts.	1,000	Other Aircraft Parts and Auxiliary Equipment	1,250
Space Vehicles and Guided Missiles, Their Propulsion Units Parts, and Their Auxiliary Equipment and Parts.	1,000	Guided Missiles and Space Vehicles, Their Propulsion Units and Propulsion Parts.	1,250

Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment category has been dropped from the third exception because the proposed size standard for the corresponding manufacturing industry (NAICS 336419) is the same as the calculated size standard for rest of NAICS 541712.

Footnote 11 to SBA's table of size standards concerning NAICS codes 541711and 541712 consists of an introductory paragraph and three sub-paragraphs numbered as (a), (b), and (c). The introductory paragraph states that for research and development contracts requiring the delivery of a manufactured product, the appropriate size standard is that of the manufacturing industry. Sub-paragraph (a) concerns with what SBA generally means by ''Research and Development'' (R&D) under NAICS codes 541712 and 541712, while sub-paragraph (b) and (c) relate to the R&D definitions for Small Business Innovation Research program and ''guided missiles and space vehicles'', respectively. SBA has received some public inquiries on whether the requirement under the introductory paragraph is independent or it also applies to the three sub-paragraphs. While the introductory paragraph only applies to R&D contracts requiring the delivery of a manufactured product, the three sub-paragraphs can include R&D contracts that do not require the delivery of the manufactured product. However, to eliminate possible confusion and provide more clarity, SBA proposes to amend Footnote 11 by converting the introductory paragraph to a new sub-paragraph (b) and renaming existing sub-paragraphs (b) and (c) to sub-paragraphs (c) and (d), respectively, as follows:

[11] NAICS code 541711 and 541712:

(a) ''Research and Development'' means laboratory or other physical research and development. It does not include economic, educational,

engineering, operations, systems, or other nonphysical research; or computer programming, data processing, commercial and/or medical laboratory testing.

(b) For research and development contracts requiring the delivery of a manufactured product, the appropriate size standard is that of the manufacturing industry.

(c) For purposes of the Small Business Innovation Research (SBIR) program only, a different definition has been established by law. See § 121.701 of these regulations.

(d) ''Research and Development'' for guided missiles and space vehicles includes evaluations and simulation, and other services requiring thorough knowledge of complete missiles and spacecraft.

The Environmental Remediation Services Sub-Industry (''Exception'') Under NAICS 562910, Remediation Services

In 1994, SBA established a 500-employee based size standard for Environmental Remediation Services (ERS) for Federal procurements involving three or more services related to restoring a contaminated environment, such as preliminary assessment, site inspection, testing, remedial investigation, remedial action, containment, and removal and storage of contaminated materials (FR 59 47236 (September 15, 1994)). At that time, ERS was designated as a sub-industry category or ''exception'' under the Standard Industrial Classification (SIC) code 8744, Facilities Support Management Services. Currently, it is a sub-industry or ''exception'' under NAICS code 562910, Remediation Services. The requirements that apply to the ERS exception and its 500-employee size standard for Federal procurement and SBA's assistance are defined in Footnote 14 to SBA's table of size standards (13 CFR 121.201).

As explained previously in the Sources of Industry and Program Data section, the data from the Census Bureau's tabulation are limited to the 6-digit NAICS industry level and hence do not provide economic characteristics for the ERS sub-industry. Thus, SBA evaluated the data from FPDS–NG and the SAM/CCR databases. First, using FPDS–NG data for fiscal years 2009 to 2011, SBA identified product service codes (PSCs) within NAICS 562910 that correspond to the ERS activity or exception and firms that participated in Federal contracts under those PSCs. Then, SBA obtained those firms' revenue and employment data from the SAM/CCR database.

The ERS contracts were predominantly classified under the three PSCs as shown in Table 6, PSCs for ERS Contracts, below.

TABLE 6—PSCS FOR ERS CONTRACTS

PSC	PSC Description
F108	Environmental Systems Protection—Environmental Remediation Includes: Toxic and Hazardous Substance Removal, Cleanup, and Disposal; Asbestos and Lead Abatement. Excludes: Remediation of Oil Spills (PSC F112).
F112	Environmental Systems Protection—Oil Spill Response Includes: Cleanup, Removal, Disposal and Operational Support.
F999	Other Environmental Services.

Among these three PSCs, F108 and F999 accounted for about 98 percent of nearly $1.9 billion in total contracts dollars awarded annually under these three PSCs during fiscal years 2009–2011. Thus, for this proposed rule, SBA's analysis focused only on firms that received contracts in PSCs F108 and F999. Based on FPDS–NG data for fiscal years 2009–2011, SBA identified 783 businesses receiving Federal contracts under those two PSCs. Of these, 18 identified themselves as manufacturers in SAM/CCR and were excluded from the analysis. Of the remainder, SBA was able to match about 670 firms in SAM/CCR database and obtain the data on their annual receipts and employees. The matched firms accounted for 96 percent of total contract dollars awarded in the two PSCs. The data on those firms were analyzed to evaluate industry and Federal contracting factors of the ERS sub-industry. These results and size standards supported by each of those factors are shown in Table 7, Size Standards Supported by Each Factor for the ERS Sub-industry (No. of Employees), below.

TABLE 7—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR THE ERS SUB-INDUSTRY (NO. OF EMPLOYEES)

	Simple average firm size (number of employees)	Weighted average firm size (number of employees)	Average assets size ($ million)	Four-firm ratio %	Four-firm average size (number of employees)	Gini coefficient	Federal contract factor (%)	Calculated size standard (number of employees)
Factor	832	20,583	NA	47	48,022	0.9298	37.5	
Size standard	1,500	1,500	.....	.....	1,500	1,500	500	1,250

NA = data not available.

Based on the above results, SBA is proposing to increase the size standard for the ERS sub-industry or exception under NAICS 562910 from the current 500 employees to 1,250 employees.

Offshore Marine Air Transportation Services and Offshore Marine Services

Offshore Marine Air Transportation Services is a sub-industry or ''exception'' under both NAICS 481211, Nonscheduled Chartered Passenger Air Transportation and NAICS 481212, Nonscheduled Chartered Freight Air Transportation. The size standards are 1,500 employees for both NAICS codes 481211 and 481212 and $28 million in average annual receipts for the Offshore Marine Air Transportation Services sub-industry or ''exception. Similarly, as

indicated in Footnote 15 to SBA's table of size standards, Offshore Marine Services is a sub-industry or ''exception'' to all industries under NAICS Subsector 483, Water Transportation, with the size standard of $28 million in average annual receipts. All industries within Subsector 483 currently have a 500-employee size standard. SBA did not review the $28 million receipts exception size standard when it reviewed receipts based size standards in NAICS Sector 48–49.

As mentioned earlier, the data from the Census Bureau's tabulation are limited to the 6-digit NAICS industry level and do not provide economic characteristics of firms at the sub-industry level. For sub-industry or exception size standards, SBA generally evaluates the characteristics of firms receiving Federal contracts under product service codes (PSCs) that correspond to specific sub-industry activities or ''exceptions'' within the applicable NAICS code. However, the review of data from FPDS–NG shows no specific PSC associated with either the Offshore Marine Air Transportation Services or Offshore Marine Services sub-industries. Therefore, SBA cannot review the $28 million revenue size standard for these sub-industries to determine whether it should be retained at the current level or adjusted.

The sub-industry or ''exception'' size standards are primarily used for Federal government procurements of very specific products or services within a 6-digit NAICS industry and many of them account for a significant share of contract dollars within the industry. However, evaluations of data from FPDS–NG and a sample of solicitations from the Federal Business Opportunities Web site at *www.fbo.gov* show almost no federal contract awards to small businesses under the $28 million size standard exception to NAICS 481211 and 481212 and NAICS Subsector 483. SBA believes that contracting officers strongly favor a relatively much larger 1,500- or 500-employee size standard instead of the $28 million receipts based size standard.

For the above reasons, SBA proposes to eliminate these sub-industries or ''exceptions'' and their $28 million receipts based size standard under NAICS 481211 and 481212 and NAICS Subsector 483. SBA proposes to apply the applicable employee based size standard. SBA also proposes to eliminate Footnote 15 from SBA's table of size standards. This will not affect the eligibility of firms that are small under the $28 million receipts based size standard because they will continue to be eligible under the employee based size standard.

Proposed Changes to Size Standards

Table 8, Summary of Size Standards Analysis, below, summarizes the results of SBA's analyses from Table 3, Size Standards Supported by Each Factor for Each Industry (No. of employees). The results might support increases in size standards for 31 industries, decreases for seven industries and no change for 19 industries.

TABLE 8—SUMMARY OF SIZE STANDARDS ANALYSIS

NAICS Code	NAICS Industry title	Current size standard (number of employees)	Calculated size standard (number of employees)
113310	Logging	500	500
211111	Crude Petroleum and Natural Gas Extraction	500	1,250
211112	Natural Gas Liquid Extraction	500	750
212111	Bituminous Coal and Lignite Surface Mining	500	1,250
212112	Bituminous Coal Underground Mining	500	1,500
212113	Anthracite Mining	500	500
212210	Iron Ore Mining	500	750
212221	Gold Ore Mining	500	1,500
212222	Silver Ore Mining	500	750
212231	Lead Ore and Zinc Ore Mining	500	750
212234	Copper Ore and Nickel Ore Mining	500	1,500
212291	Uranium-Radium-Vanadium Ore Mining	500	500
212299	All Other Metal Ore Mining	500	750
212311	Dimension Stone Mining and Quarrying	500	500
212312	Crushed and Broken Limestone Mining and Quarrying	500	750
212313	Crushed and Broken Granite Mining and Quarrying	500	750
212319	Other Crushed and Broken Stone Mining and Quarrying	500	500
212321	Construction Sand and Gravel Mining	500	500
212322	Industrial Sand Mining	500	500
212324	Kaolin and Ball Clay Mining	500	750
212325	Clay and Ceramic and Refractory Minerals Mining	500	500
212391	Potash, Soda, and Borate Mineral Mining	500	750
212392	Phosphate Rock Mining	500	1,000
212393	Other Chemical and Fertilizer Mineral Mining	500	500
212399	All Other Nonmetallic Mineral Mining	500	500
213111	Drilling Oil and Gas Wells	500	1,000
221210	Natural Gas Distribution	500	1,000
481111	Scheduled Passenger Air Transportation	1,500	1,500
481112	Scheduled Freight Air Transportation	1,500	750
481211	Nonscheduled Chartered Passenger Air Transportation	1,500	750
481212	Nonscheduled Chartered Freight Air Transportation	1,500	1,000
482111	Line-Haul Railroads	1,500	1,500
482112	Short Line Railroads	500	1,500
483111	Deep Sea Freight Transportation	500	500
483112	Deep Sea Passenger Transportation	500	1,500
483113	Coastal and Great Lakes Freight Transportation	500	750
483114	Coastal and Great Lakes Passenger Transportation	500	500
483211	Inland Water Freight Transportation	500	750

TABLE 8—SUMMARY OF SIZE STANDARDS ANALYSIS—Continued

NAICS Code	NAICS Industry title	Current size standard (number of employees)	Calculated size standard (number of employees)
483212	Inland Water Passenger Transportation	500	500
486110	Pipeline Transportation of Crude Oil	1,500	1,000
486910	Pipeline Transportation of Refined Petroleum Products	1,500	500
492110	Couriers and Express Delivery Services	1,500	1,250
511110	Newspaper Publishers	500	1,000
511120	Periodical Publishers	500	1,000
511130	Book Publishers	500	1,000
511140	Directory and Mailing List Publishers	500	1,250
511191	Greeting Card Publishers	500	1,500
511199	All Other Publishers	500	500
512220	Integrated Record Production/Distribution	750	1,250
512230	Music Publishers	500	750
517110	Wired Telecommunications Carriers	1,500	1,500
517210	Wireless Telecommunications Carriers (except Satellite)	1,500	1,500
517911	Telecommunications Resellers	1,500	750
519130	Internet Publishing and Broadcasting and Web Search Portals	500	1,000
524126	Direct Property and Casualty Insurance Carriers	1,500	1,500
541711	Research and Development in Biotechnology	500	1,000
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology).	500	1,000

Similarly, the results discussed under the Special Considerations section, above, support increasing the size standard for the second and third exceptions and retaining it for the first exception under NAICS 541712 and increasing the Environmental Remediation Services exception under NAICS 562910. SBA is proposing to eliminate the Information Technology Value Added Resellers exception and its 150-employee size standard under NAICS 541519. SBA is also proposing to eliminate the Offshore Marine Air Transportation Services sub-industry or ''exception'' under NAICS 481211 and 481212 and Offshore Marine Services sub-industry or ''exception'' under NAICS Subsector 483 and their $28 million receipts based size standard.

To ensure that neither an existing nor a calculated size standard includes the largest or dominant firms in any industry, besides the calculation of the Gini coefficient, SBA further assessed the distribution of firms in each industry by employee size. The analytical results in Table 3 might appear to support retaining the existing size standard of 500 employees for NAICS codes 212113 and 212291 and increasing it to 750 employees for NAICS 212222. However, the firm size distribution showed that these levels would include all firms, including the largest and possibly dominant ones, as small in each of those industries. Moreover, these levels are almost the same as or higher than the total employees for the entire industry. Accordingly, SBA is proposing to set the size standard for each of these three NAICS codes at 250 employees. This would affect only the one or two largest firms in each of those industries.

Except for lowering size standards to exclude the dominant firms, SBA believes that lowering size standards is not in the best interest of small businesses in the current economic environment. The U.S. economy was in recession from December 2007 to June 2009, the longest and deepest of any recessions since before World War II. The economy lost more than eight million non-farm jobs during 2008–2009. In response, Congress passed and the President signed into law the American Recovery and Reinvestment Act of 2009 (Recovery Act) to promote economic recovery and to preserve and create jobs. Although the recession officially ended in June 2009, the unemployment rate is still high at 6.2 percent in July 2014 (*www.bls.gov*) and is forecast to remain around this level at least through the end of 2014 (*http://www.federalreserve.gov/monetarypolicy/mpr_20140211_part3.htm*).

In 2010, Congress passed and the President signed the Jobs Act to promote small business job creation. The Jobs Act puts more capital into the hands of entrepreneurs and small business owners; strengthens small businesses' ability to compete for contracts; includes recommendations from the President's Task Force on Federal Contracting Opportunities for Small Business; creates a better playing field for small businesses; promotes small business exporting, building on the President's National Export Initiative; expands training and counseling; and provides $12 billion in tax relief to help small businesses invest in their firms and create jobs. A proposal to reduce size standards will have an immediate impact on jobs, and it would be contrary to the expressed will of the President and the Congress.

Lowering size standards would decrease the number of firms that participate in Federal financial and procurement assistance programs for small businesses. It would also affect small businesses that are now exempt or receive some form of relief from other Federal regulations that use SBA's size standards. That impact could take the form of increased fees, paperwork, or other compliance requirements for small businesses. Furthermore, size standards based solely on analytical results without any other considerations can cut off currently eligible small firms from those programs and benefits. In the seven industries for which analytical results might have supported lowering their size standards, about 40 businesses would lose their small business eligibility if their size standards were lowered based solely on the analytical results. That would run counter to what SBA and the Federal government are doing to help small businesses and create jobs. Reducing size eligibility for Federal procurement opportunities, especially under current economic conditions, would not preserve or create more jobs; rather, it would have the opposite effect. Therefore, in this proposed rule, except for three industries for which SBA is proposing to lower their size standards to exclude

the largest and possibly the dominant firms from being small, SBA does not intend to reduce size standards for any industries. Accordingly, for seven industries where analyses might seem to support lowering size standards, SBA proposes to retain the current size standards.

Furthermore, as stated previously, the Small Business Act requires the SBA's Administrator to ''. . . consider other factors deemed to be relevant . . .'' to establishing small business size standards. The current economic conditions and the impact on job creation are quite relevant factors when establishing small business size standards. SBA nevertheless invites comments and suggestions on whether it should lower size standards as suggested by analyses of industry and program data or retain the current standards for those industries in view of current economic conditions.

As discussed above, except to exclude the largest or dominant firms, lowering size standards is inconsistent with what the Federal government is doing to stimulate the economy and would discourage job growth for which Congress established the Recovery Act and Jobs Act. In addition, it would be inconsistent with the Small Business Act requiring the Administrator to establish size standards based on industry analysis and other relevant factors such as current economic conditions. Thus, of the 57 industries and five sub-industries reviewed in this rule, SBA proposes to increase size standards for 30 industries and three sub-industries, retain the current size standards for 24 industries and one sub-industry and lower size standards for three industries to exclude the largest or dominant firms from being considered small. SBA also proposes to eliminate the Information Technology Value Added Resellers sub-industry or exception under NAICS 541519 (Other Computer Related Services) and its 150-employee size standard. SBA also proposes to eliminate the Offshore Marine Air Transportation Services sub-industry or ''exception'' under NAICS 481211 and 481212 and Offshore Marine Services sub-industry or ''exception'' under NAICS Subsector 483 and their $28 million receipts based size standard. The SBA's proposed changes are in Table 9, Summary of Proposed Size Standards Revisions, below.

TABLE 9—SUMMARY OF PROPOSED SIZE STANDARDS REVISIONS

NAICS Code	NAICS Industry title	Current size standard (millions of dollars)	Current size standard (number of employees)	Proposed size standard (number of employees)
211111	Crude Petroleum and Natural Gas Extraction		500	1,250
211112	Natural Gas Liquid Extraction		500	750
212111	Bituminous Coal and Lignite Surface Mining		500	1,250
212112	Bituminous Coal Underground Mining		500	1,500
212113	Anthracite Mining		500	250
212210	Iron Ore Mining		500	750
212221	Gold Ore Mining		500	1,500
212222	Silver Ore Mining		500	250
212231	Lead Ore and Zinc Ore Mining		500	750
212234	Copper Ore and Nickel Ore Mining		500	1,500
212291	Uranium-Radium-Vanadium Ore Mining		500	250
212299	All Other Metal Ore Mining		500	750
212312	Crushed and Broken Limestone Mining and Quarrying		500	750
212313	Crushed and Broken Granite Mining and Quarrying		500	750
212324	Kaolin and Ball Clay Mining		500	750
212391	Potash, Soda, and Borate Mineral Mining		500	750
212392	Phosphate Rock Mining		500	1,000
213111	Drilling Oil and Gas Wells		500	1,000
221210	Natural Gas Distribution		500	1,000
481211 Except		$30.5		Eliminate
481212 Except		$30.5		Eliminate
482112	Short Line Railroads		500	1,500
483112	Deep Sea Passenger Transportation		500	1,500
483113	Coastal and Great Lakes Freight Transportation		500	750
483211	Inland Water Freight Transportation		500	750
511110	Newspaper Publishers		500	1,000
511120	Periodical Publishers		500	1,000
511130	Book Publishers		500	1,000
511140	Directory and Mailing List Publishers		500	1,250
511191	Greeting Card Publishers		500	1,500
512220	Integrated Record Production/Distribution		750	1,250
512230	Music Publishers		500	750
519130	Internet Publishing and Broadcasting and Web Search Portals.		500	1,000
541519 Except	Information Value Added Resellers		150	Eliminate
541711	Research and Development in Biotechnology		500	1,000
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology).		500	1,000
Except	Aircraft Engine and Engine Parts		1,000	1,500
Except	Other Aircraft Parts and Auxiliary Equipment		1,000	1,250
Except	Guided Missiles and Space Vehicles, Their Propulsion Units and Propulsion Parts.		1,000	1,250
562910 Except	Environmental Remediation Services		500	1,250

Maintaining current size standards when the analytical results suggested lowering them is consistent with SBA's recent final rules on NAICS Sector 44–45, Retail Trade (75 FR 61597 (October 6, 2010)); NAICS Sector 72, Accommodation and Food Services (75 FR 61604 (October 6, 2010)); NAICS Sector 81, Other Services (75 FR 61591 (October 6, 2010)); NAICS Sector 54, Professional, Scientific and Technical Services (77 FR 7490 (February 10, 2012)); NAICS Sector 48 49, Transportation and Warehousing (77 FR 10943 (February 24, 2012)); NAICS Sector 51, Information (77 FR 72702 (December 6, 2012)); NAICS Sector 53, Real Estate and Rental and Leasing (77 FR 88747 (September 24, 2012)); NAICS Sector 56, Administrative and Support, Waste Management and Remediation Services (77 FR 72691 (December 6, 2012)); NAICS Sector 61, Educational Services (77 FR 58739 (September 24, 2012)); NAICS Sector 62, Health Care and Social Assistance (77 FR 58755 (September 24, 2012)); NAICS Sector 11, Agriculture, Forestry, Fishing and Hunting (78 FR 37398 (June 20, 2013)); NAICS Subsector 213, Support Activities for Mining (78 FR 37404 (June 20, 2013)); NAICS Sector 52, Finance and Insurance and Sector 55, Management of Companies and Enterprises (78 FR 37409 (June 20, 2013)); NAICS Sector 71, Arts, Entertainment and Recreation (78 FR 37417 (June 20, 2013)), and NAICS Sector 23, Construction (78 FR 77334 (December 23, 2013)). In each of those final rules, SBA retained the existing size standards for those that it could have reduced.

Evaluation of Dominance in Field of Operation

SBA has determined that for the industries for which it has proposed revising size standards in this rule, no individual firm at or below the proposed size standard will be large enough to dominate its field of operation. At the proposed size standards, if adopted, the small business share of total industry receipts among those industries is, in average, 3.4 percent, with an interval showing a minimum of less than 0.01 percent to a maximum of 20.0 percent. These market shares effectively preclude a firm at or below the proposed size standards from exerting control over any of the industries.

Request for Comments

SBA invites public comments on this proposed rule, especially on the following issues:

1. SBA proposes five levels of employee based size standards for industries in Manufacturing and industries in other Sectors except for Wholesale Trade and Retail Trade that have employee based size standards: 500 employees, 750 employees, 1,000 employees, 1,250 employees, and 1,500 employees. SBA invites comments on whether these proposed size levels are appropriate and suggestions on alternative levels, if they would be more appropriate.

2. To be consistent with its policy of not lowering any size standards in all recent proposed and final rules on receipts based size standards in view of current economic conditions, SBA is retaining the current 500-employee minimum and 1,500-employee maximum size standards for all industries in the Manufacturing Sector and other industries not in the Wholesale and Retail Trade Sectors that have employee based size standards. In its ''Size Standards Methodology,'' available at *www.sba.gov/size,* SBA had proposed setting the minimum size standard for these industries at 250 employees and the maximum size standard at 1,000 employees. This would have resulted in lowering the existing employee based size standards for some industries. SBA invites comments on whether should SBA maintain the minimum employee based size standard at 500 employees and the maximum at 1,500 employees or should it lower them to 250 employees and 1,000 employees, respectively, as proposed in ''Size Standards Methodology'', and suggestions on alternative minimum and maximum levels, if they would be more appropriate. SBA also seeks feedback on whether it should adjust employee based size standards for labor productivity growth.

3. SBA seeks feedback on whether SBA's proposal to increase size standards for 30 industries and three sub-industries, reduce size standards for three industries to exclude the largest firms, and retain current size standards for 24 industries and one sub-industry is appropriate, given the economic characteristics of each industry and sub-industry reviewed in this proposed rule. SBA also seeks feedback and suggestions on alternative size standards, if they would be more appropriate, including whether the average annual revenue is a more suitable measure of size for certain industries and what that revenue level should be.

4. SBA invites comments on its proposal to eliminate the Information Technology Value Added Resellers sub-industry or exception under NAICS 541519 (Other Computer Related Services) and its 150-employee size standard and apply the $25.5 million receipts based size standard that is current in place for the rest of the industry.

5. SBA invites comments on its proposal to eliminate the Offshore Marine Air Transportation Services sub-industry or exception under NAICS 481211 (Nonscheduled Chartered Passenger Air Transportation) and under NAICS 481212 (Nonscheduled Chartered Freight Air Transportation) and its $28 million receipts size standard and apply the same 1,500 employee size standard that is current in place for each of those industry. Similarly, SBA seeks comments on its proposal to eliminate the Offshore Marine Services sub-industry or ''exception'' under NAICS Subsector 483, and its $28 million receipts size standard and apply the applicable employee size standard that for each industry within that Subsector. If those exceptions are to be retained, SBA invites comments on whether the current $28 million revenue size standard is appropriate, and suggestions on an alternative level with supporting data and analysis.

6. SBA has proposed to retain the current size standards for seven industries for which its analysis would support lowering them. SBA seeks comments on whether SBA should lower them solely based on its analysis or retain them at their current levels in view of current economic conditions.

7. SBA's proposed size standards are based on five primary factors—average firm size, average assets size (as a proxy of startup costs and entry barriers), four-firm concentration ratio, distribution of firms by size and, the level and small business share of Federal contracting dollars of the evaluated industries and sub-industries. SBA welcomes comments on these factors and/or suggestions on other factors that it should consider when evaluating or revising employee based size standards. SBA also seeks information on relevant data sources, other than what it uses, if available.

8. SBA gives equal weight to each of the five primary factors in all industries. SBA seeks feedback on whether it should continue giving equal weight to each factor or whether it should give more or less weight to one or more factors for certain industries. Recommendations to weigh some factors more than others should include suggested weights for each factor along with supporting information.

9. For analytical simplicity and efficiency, in this proposed rule, SBA has refined its size standard methodology to obtain a single value as a proposed size standard instead of a range of values, as in its past size regulations. SBA welcomes any comments on this procedure and suggestions on alternative methods.

Public comments on the above issues are very valuable to SBA for validating its size standard methodology and its proposed size standards revisions in this proposed rule. This will help SBA to ensure that size standards reflect industry structure and Federal market conditions. Commenters addressing SBA's proposed size standard revisions for a specific industry or a group of industries should include relevant data and/or other information supporting their comments. If comments relate to using size standards for Federal procurement programs, SBA suggests that commenters provide information on the size of contracts in their industries, the size of businesses that can undertake the contracts, startup costs, equipment and other asset requirements, the amount of subcontracting, other direct and indirect costs associated with the contracts, the use of mandatory sources of supply for products and services, and the degree to which contractors can mark up those costs.

Compliance With Executive Orders 12866, 13563, 12988 and 13132, the Paperwork Reduction Act (44 U.S.C. Ch. 35) and the Regulatory Flexibility Act (5 U.S.C. 601–612)

Executive Order 12866

The Office of Management and Budget (OMB) has determined that this proposed rule is a significant regulatory action for purposes of Executive Order 12866. Accordingly, in the next section, SBA provides a Regulatory Impact Analysis of this proposed rule. However, this rule is not a ''major rule'' under the Congressional Review Act, 5 U.S.C. 800.

Regulatory Impact Analysis

1. Is there a need for the regulatory action?

SBA believes that proposed size standards revisions in this proposed rule will better reflect the economic characteristics of small businesses in the affected industries and the Federal government marketplace. SBA's mission is to aid and assist small businesses through a variety of financial, procurement, business development, and advocacy programs. To determine the intended beneficiaries of these programs, SBA establishes distinct definitions of which businesses are deemed small businesses. The Small Business Act (15 U.S.C. 632(a)) delegates to SBA's Administrator the responsibility for establishing small business definitions. The Act also requires that small business definitions vary to reflect industry differences. The Jobs Act also requires SBA to review all size standards and make necessary adjustments to reflect market conditions. The supplementary information section of this proposed rule explains SBA's methodology for analyzing a size standard for a particular industry.

2. What are the potential benefits and costs of this regulatory action?

The most significant benefit to businesses obtaining small business status because of this proposed rule is gaining or retaining eligibility for Federal small business assistance programs. These include SBA's financial assistance programs, economic injury disaster loans, and Federal procurement programs intended for small businesses. Federal procurement programs provide targeted opportunities for small businesses under SBA's business development programs, such as 8(a), Small Disadvantaged Businesses (SDB), small businesses located in Historically Underutilized Business Zones (HUBZone), women-owned small businesses (WOSB), economically disadvantaged women-owned small businesses (EDWOSB), and service-disabled veteran-owned small businesses (SDVOSB). Federal agencies may also use SBA's size standards for a variety of other regulatory and program purposes. These programs assist small businesses to become more knowledgeable, stable, and competitive. SBA estimates that in 30 industries and three sub-industries (''exceptions'') for which it has proposed to increase size standards more than 380 firms, not small under the existing size standards, will become small under the proposed size standards, if adopted, and therefore become eligible for these programs. That is about 0.6 percent of all firms classified as small under the current size standards in all industries and sub-industries reviewed in this proposed rule. If adopted as proposed, this will increase the small business share of total receipts in those industries from 18.3 percent to 21.3 percent. In three industries for which SBA has proposed to reduce their size standards, only the one or two largest firms will be impacted in each of those industries.

Three groups will benefit from the proposed size standards revisions in this rule, if they are adopted as proposed: (1) Some businesses that are above the current size standards may gain small business status under the higher size standards, thereby enabling them to participate in Federal small business assistance programs; (2) growing small businesses that are close to exceeding the current size standards will be able to retain their small business status under the higher size standards, thereby enabling them to continue their participation in the programs; and (3) Federal agencies will have a larger pool of small businesses from which to draw for their small business procurement programs.

SBA estimates that firms gaining small business status under the proposed size standards could receive Federal contracts totaling $165 million to $175 million annually under SBA's small business, 8(a), SDB, HUBZone, WOSB, EDWOSB, and SDVOSB Programs, and other unrestricted procurements. The added competition for many of these procurements can also result in lower prices to the Government for procurements reserved for small businesses, but SBA cannot quantify this benefit.

Under SBA's 7(a) and 504 Loan Programs, based on the fiscal years 2010–2012 data, SBA estimates up to about five SBA's 7(a) and 504 loans totaling about $1.0 million could be made to these newly defined small businesses under the proposed size standards. Increasing the size standards will likely result in more small business guaranteed loans to businesses in these industries, but it is be impractical to try to estimate exactly the number and total amount of loans. There are two reasons for this: (1) Under the Jobs Act, SBA can now guarantee substantially larger loans than in the past; and (2) as described above, the Jobs Act established a higher alternative size standard ($15 million in tangible net worth and $5 million in net income after income taxes) for business concerns that do not meet the size standards for their industry. Therefore, SBA finds it difficult to quantify the actual impact of these proposed size standards on its 7(a) and 504 Loan Programs.

Newly defined small businesses will also benefit from SBA's Economic Injury Disaster Loan (EIDL) Program. Since this program is contingent on the occurrence and severity of a disaster in the future, SBA cannot make a meaningful estimate of this impact.

In addition, newly defined small businesses will also benefit through reduced fees, less paperwork, and fewer compliance requirements that are available to small businesses through Federal government.

To the extent that those 380 newly defined additional small firms could become active in Federal procurement programs, the proposed changes to size standards, if adopted, may entail some additional administrative costs to the government as a result of more businesses being eligible for Federal small business programs. For example, there will be more firms seeking SBA's guaranteed loans, more firms eligible for enrollment in the System of Award Management (SAM) database, and more firms seeking certification as 8(a) or HUBZone firms or qualifying for small business, WOSB, EDWOSB, SDVOSB, and SDB status. Among those newly defined small businesses seeking SBA's assistance, there could be some additional costs associated with compliance and verification of small business status and protests of small business status. However, SBA believes that these added administrative costs will be minimal because mechanisms are already in place to handle these requirements.

Additionally, Federal government contracts may have higher costs. With a greater number of businesses defined as small, Federal agencies may choose to set aside more contracts for competition among small businesses only rather than using full and open competition. The movement from unrestricted to small business set-aside contracting might result in competition among fewer total bidders, although there will be more small businesses eligible to submit offers. However, the additional costs associated with fewer bidders are expected to be minor since, by law, procurements may be set aside for small businesses or reserved for the 8(a), HUBZone, WOSB, EDWOSB, or SDVOSB Programs only if awards are expected to be made at fair and reasonable prices. In addition, there may be higher costs when more full and open contracts are awarded to HUBZone businesses that receive price evaluation preferences.

The proposed size standards revisions, if adopted, may have some distributional effects among large and small businesses. Although SBA cannot estimate with certainty the actual outcome of the gains and losses among small and large businesses, it can identify several probable impacts. There may be a transfer of some Federal contracts to small businesses from large businesses. Large businesses may have fewer Federal contract opportunities as Federal agencies decide to set aside more contracts for small businesses. In addition, some Federal contracts may be awarded to HUBZone concerns instead of large businesses since these firms may be eligible for a price evaluation preference for contracts when they compete on a full and open basis.

Similarly, some businesses defined small under the current size standards may obtain fewer Federal contracts due to the increased competition from more businesses defined as small under the proposed size standards. This transfer may be offset by a greater number of Federal procurements set aside for all small businesses. The number of newly defined and expanding small businesses that are willing and able to sell to the Federal Government will limit the potential transfer of contracts from large and currently defined small businesses. SBA cannot estimate the potential distributional impacts of these transfers with any degree of precision.

The proposed revisions to the existing employee based size standards for 33 industries and three sub-industries are consistent with SBA's statutory mandate to assist small business. This regulatory action promotes the Administration's objectives. One of SBA's goals in support of the Administration's objectives is to help individual small businesses succeed through fair and equitable access to capital and credit, Government contracts, and management and technical assistance. Reviewing and modifying size standards, when appropriate, ensures that intended beneficiaries have access to small business programs designed to assist them.

Executive Order 13563

Descriptions of the need for this regulatory action and benefits and costs associated with this action including possible distributional impacts that relate to Executive Order 13563 are included above in the Regulatory Impact Analysis under Executive Order 12866.

In an effort to engage interested parties in this action, SBA has presented its size standards methodology (discussed above under Supplementary Information) to various industry associations and trade groups. SBA also met with a number of industry groups and individual businesses to get their feedback on its methodology and other size standards issues. In addition, SBA presented its size standards methodology to businesses in 13 cities in the U.S. and sought their input as part of Jobs Act tours. The presentation also included information on the latest status of the comprehensive size standards review and on how interested parties can provide SBA with input and feedback on size standards review.

Additionally, SBA sent letters to the Directors of the Offices of Small and Disadvantaged Business Utilization (OSDBU) at several Federal agencies with considerable procurement responsibilities requesting their feedback on how the agencies use SBA's size standards and whether current size standards meet their programmatic needs (both procurement and non-procurement). SBA gave appropriate consideration to all input, suggestions, recommendations, and relevant information obtained from industry groups, individual businesses, and Federal agencies in preparing this proposed rule.

The review of size standards in industries and sub-industries covered in this proposed rule is consistent with Executive Order 13563, Section 6, calling for retrospective analyses of existing rules. The last comprehensive review of size standards occurred during the late 1970s and early 1980s. Since then, except for periodic adjustments for monetary based size standards, most reviews of size standards were limited to a few specific industries in response to requests from the public and Federal agencies. The majority of employee based size standards have not been reviewed since they were first established. SBA recognizes that changes in industry structure and the Federal marketplace over time have rendered existing size standards for some industries no longer supportable by current data. Accordingly, in 2007, SBA began a comprehensive review of its size standards to ensure that existing size standards have supportable bases and to revise them when necessary. In addition, the Jobs Act requires SBA to conduct a detailed review of all size standards and to make appropriate adjustments to reflect market conditions. Specifically, the Jobs Act requires SBA to conduct a detailed review of at least one-third of all size standards during every 18-month period from the date of its enactment and do a complete review of all size standards not less frequently than once every 5 years thereafter.

Executive Order 12988

This action meets applicable standards set forth in Sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden. The action does not have retroactive or preemptive effect.

Executive Order 13132

For purposes of Executive Order 13132, SBA has determined that this proposed rule will not have substantial, direct effects on the States, on the relationship between the national

government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, SBA has determined that this proposed rule has no federalism implications warranting preparation of a federalism assessment.

Paperwork Reduction Act

For the purpose of the Paperwork Reduction Act, 44 U.S.C. Ch. 35, SBA has determined that this proposed rule will not impose any new reporting or record keeping requirements.

Initial Regulatory Flexibility Analysis

Under the Regulatory Flexibility Act (RFA), this proposed rule, if adopted, may have a significant impact on a substantial number of small businesses in the industries and sub-industries covered by this rule. As described above, this rule may affect small businesses seeking Federal contracts, loans under SBA's 7(a), 504 and Economic Injury Disaster Loan Programs, and assistance under other Federal small business programs.

Immediately below, SBA sets forth an initial regulatory flexibility analysis (IRFA) of this proposed rule addressing the following questions: (1) What are the need for and objective of the rule? (2) What are SBA's description and estimate of the number of small businesses to which the rule will apply? (3) What are the projected reporting, record keeping, and other compliance requirements of the rule? (4) What are the relevant Federal rules that may duplicate, overlap, or conflict with the rule? and (5) What alternatives will allow the Agency to accomplish its regulatory objectives while minimizing the impact on small businesses?

1. What are the need for and objective of the rule?

Changes in industry structure, technological changes, productivity growth, mergers and acquisitions, and updated industry definitions have changed the structure of many industries reviewed in this proposed rule. Such changes can be sufficient to support revisions to current size standards for some industries. Based on the analysis of the latest data available, SBA believes that the revised standards in this proposed rule more appropriately reflect the size of businesses that need Federal assistance. The Jobs Act also requires SBA to review all size standards and make necessary adjustments to reflect market conditions.

2. What are SBA's description and estimate of the number of small businesses to which the rule will apply?

If the proposed rule is adopted in its present form, SBA estimates that about 380 additional firms will become small because of increased size standards for 30 industries and three sub-industries not in NAICS Sectors 31–33, 42 and 44–45. That represents 0.6 percent of total firms that are small under current size standards in all industries reviewed by SBA in this proposed rule. This will result in an increase in the small business share of total industry receipts for those industries from 18.3 percent under the current size standards to 21.3 percent under the proposed size standards. In the three industries for which SBA has proposed to reduce their size standards, only the one or two largest firms will be impacted in each of those industries. The proposed size standards, if adopted, will enable more small businesses to retain their small business status for a longer period. Many firms may have lost their eligibility and find it difficult to compete at current size standards with companies that are significantly larger than they are. SBA believes the competitive impact will be positive for existing small businesses and for those that exceed the size standards but are on the very low end of those that are not small. They might otherwise be called or referred to as mid-sized businesses, although SBA only defines what is small; other entities are other than small.

3. What are the projected reporting, record keeping and other compliance requirements of the rule?

The proposed size standard changes impose no additional reporting or record keeping requirements on small businesses. However, qualifying for Federal procurement and a number of other programs requires that businesses register in the SAM database and certify in SAM that they are small at least once annually. Therefore, businesses opting to participate in those programs must comply with SAM requirements. However, there are no costs associated with SAM registration or certification. Changing size standards alters the access to SBA's programs that assist small businesses, but does not impose a regulatory burden because they neither regulate nor control business behavior.

4. What are the relevant Federal rules, which may duplicate, overlap or conflict with the rule?

Under § 3(a)(2)(C) of the Small Business Act, 15 U.S.C. 632(a)(2)(c), Federal agencies must use SBA's size standards to define a small business, unless specifically authorized by statute to do otherwise. In 1995, SBA published in the **Federal Register** a list of statutory and regulatory size standards that identified the application of SBA's size standards as well as other size standards used by Federal agencies (60 FR 57988 (November 24, 1995)). SBA is not aware of any Federal rule that would duplicate or conflict with establishing size standards.

However, the Small Business Act and SBA's regulations allow Federal agencies to develop different size standards if they believe that SBA's size standards are not appropriate for their programs, with the approval of SBA's Administrator (13 CFR 121.903). The Regulatory Flexibility Act authorizes an Agency to establish an alternative small business definition, after consultation with the Office of Advocacy of the U.S. Small Business Administration (5 U.S.C. 601(3)).

5. What alternatives will allow the Agency to accomplish its regulatory objectives while minimizing the impact on small entities?

By law, SBA is required to develop numerical size standards for establishing eligibility for Federal small business assistance programs. Other than varying size standards by industry and changing the size measures, no practical alternative exists to the systems of numerical size standards.

List of Subjects in 13 CFR Part 121

Administrative practice and procedure, Government procurement, Government property, Grant programs—business, Individuals with disabilities, Loan programs—business, Reporting and recordkeeping requirements, Small businesses.

For the reasons set forth in the preamble, SBA proposes to amend part 13 CFR part 121 as follows:

PART 121—SMALL BUSINESS SIZE REGULATIONS

■ 1. The authority citation for Part 121 continues to read as follows:

Authority: 15 U.S.C. 632, 634(b)(6), 662, and 694a(9).

■ 2. In § 121.201, amend the table ''Small Business Size Standards by NAICS Industry'' as follows:

■ a. Revise the entries for ''211111'', ''211112'', ''212111'', ''212112'', ''212113'', ''212210'', ''212221'', ''212222'', ''212231'', ''212234'', ''212291'', ''212299'', ''212312'', ''212313'', ''212324'', ''212391'', ''212392'', ''213111'', ''221210'',

''482112'', ''483112'', ''483113'', ''483211'', ''511110'', ''511120'', ''511130'', ''511140'', ''511191'', ''512220'', ''512230'', ''519130'', ''541711'', ''541712 introductory entry and first, second and third sub-entry, and ''562910 sub-entry''.

■ b. Amend the entry for ''481211'' by removing its sub-entry ''Except,'' ''Offshore Marine Air Transportation Services'' ''$30.5''.

■ c. Amend the entry for ''481212'' by removing the sub-entry ''Except,'' ''Offshore Marine Air Transportation Services'' ''$30.5''.

■ d. Amend the entry for ''541519'' by removing the subentry ''Except,'' ''Value Added Resellers [18]'', ''150 [18]''.

■ e. Revise Footnote 11.

■ f. Remove and reserve Footnote 15.

■ g. Remove and reserve Footnote 18.

■ h. Footnote 14 is republished.

The revisions read as follows:

§ 121.201 What size standards has SBA identified by North American Industry Classification System codes?

* * * * *

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY

NAICS Codes	NAICS U.S. Industry title	Size standards in millions of dollars	Size standards in number of employees
* *	* * *	*	*
211111	Crude Petroleum and Natural Gas Extraction		1,250
211112	Natural Gas Liquid Extraction		750
* *	* * *	*	*
212111	Bituminous Coal and Lignite Surface Mining		1,250
212112	Bituminous Coal Underground Mining		1,500
212113	Anthracite Mining		250
212210	Iron Ore Mining		750
212221	Gold Ore Mining		1,500
212222	Silver Ore Mining		250
212231	Lead Ore and Zinc Ore Mining		750
212234	Copper Ore and Nickel Ore Mining		1,500
212291	Uranium-Radium-Vanadium Ore Mining		250
212299	All Other Metal Ore Mining		750
* *	* * *	*	*
212312	Crushed and Broken Limestone Mining and Quarrying		750
212313	Crushed and Broken Granite Mining and Quarrying		750
* *	* * *	*	*
212324	Kaolin and Ball Clay Mining		750
* *	* * *	*	*
212391	Potash, Soda, and Borate Mineral Mining		750
212392	Phosphate Rock Mining		1,000
* *	* * *	*	*
213111	Drilling Oil and Gas Wells		1,000
* *	* * *	*	*
221210	Natural Gas Distribution		1,000
* *	* * *	*	*
481211	Nonscheduled Chartered Passenger Air Transportation		1,500
481212	Nonscheduled Chartered Freight Air Transportation		1,500
* *	* * *	*	*
482112	Short Line Railroads		1,500
Subsector 483—Water Transportation			
* *	* * *	*	*
483112	Deep Sea Passenger Transportation		1,500
483113	Coastal and Great Lakes Freight Transportation		750
* *	* * *	*	*
483211	Inland Water Freight Transportation		750
* *	* * *	*	*
511110	Newspaper Publishers		1,000
511120	Periodical Publishers		1,000
511130	Book Publishers		1,000
511140	Directory and Mailing List Publishers		1,250
511191	Greeting Card Publishers		1,500

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY—Continued

NAICS Codes	NAICS U.S. Industry title	Size standards in millions of dollars	Size standards in number of employees
* *	* * *	*	*
512220	Integrated Record Production/Distribution		1,250
512230	Music Publishers		750
* *	* * *	*	*
519130	Internet Publishing and Broadcasting and Web Search Portals		1,000
* *	* * *	*	*
541711	Research and Development in Biotechnology [11]		[11] 1,000
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology) [11].		[11] 1,000
Except	Aircraft, Aircraft Engine, and Engine Parts		1,500
Except	Other Aircraft Parts and Auxiliary Equipment		1,250
Except	Guided Missiles and Space Vehicles, Their Propulsion Units and Propulsion Parts.		1,250
* *	* * *	*	*
562910	Remediation Services	$19.0	
Except	Environmental Remediation Services [14]		[14] 1,250
* *	* * *	*	*

Footnotes

* * * * *

11. NAICS code 541711 and 541712:

(a) ''Research and Development'' means laboratory or other physical research and development. It does not include economic, educational, engineering, operations, systems, or other nonphysical research; or computer programming, data processing, commercial and/or medical laboratory testing.

(b) For research and development contracts requiring the delivery of a manufactured product, the appropriate size standard is that of the manufacturing industry.

(c) For purposes of the Small Business Innovation Research (SBIR) program only, a different definition has been established by law. See § 121.701 of these regulations.

(d) ''Research and Development'' for guided missiles and space vehicles includes evaluations and simulation, and other services requiring thorough knowledge of complete missiles and spacecraft.

* * * * *

14. NAICS 562910—Environmental Remediation Services:

(a) For SBA assistance as a small business concern in the industry of Environmental Remediation Services, other than for Government procurement, a concern must be engaged primarily in furnishing a range of services for the remediation of a contaminated environment to an acceptable condition including, but not limited to, preliminary assessment, site inspection, testing, remedial investigation, feasibility studies, remedial design, containment, remedial action, removal of contaminated materials, storage of contaminated materials and security and site closeouts. If one of such activities accounts for 50 percent or more of a concern's total revenues, employees, or other related factors, the concern's primary industry is that of the particular industry and not the Environmental Remediation Services Industry.

(b) For purposes of classifying a Government procurement as Environmental Remediation Services, the general purpose of the procurement must be to restore or directly support the restoration of a contaminated environment. This includes activities such as preliminary assessment, site inspection, testing, remedial investigation, feasibility studies, remedial design, remediation services, containment, and removal of contaminated materials or security and site closeouts. The general purpose of the procurement need not necessarily include remedial actions. Also, the procurement must be composed of activities in three or more separate industries with separate NAICS codes or, in some instances (e.g., engineering), smaller sub-components of NAICS codes with separate and distinct size standards. These activities may include, but are not limited to, separate activities in industries such as: Heavy Construction; Special Trade Contractors; Engineering Services; Architectural Services; Management Consulting Services; Hazardous and Other Waste Collection; Remediation Services; Testing Laboratories; and Research and Development in the Physical, Engineering, and Life Sciences. If any activity in the procurement can be identified with a separate NAICS code, or component of a code with a separate distinct size standard, and that industry accounts for 50 percent or more of the value of the entire procurement, then the proper size standard is the one for that particular industry, and not the Environmental Remediation Service size standard.

* * * * *

Dated: August 25, 2014.

Maria Contreras-Sweet,

Administrator.

[FR Doc. 2014–20838 Filed 9–9–14; 8:45 am]

BILLING CODE 8025–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2014–0416; Airspace Docket No. 14–ASO–7]

Proposed Establishment of Class D Airspace and Amendment of Class E Airspace; Selma, AL

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This action proposes to establish Class D airspace and amend Class E airspace at Selma, AL, to accommodate the new air traffic control tower at Craig Field Airport. Controlled airspace is necessary for the safety and management of instrument flight rules (IFR) operations at the airport.

DATES: 0901 UTC. Comments must be received on or before October 27, 2014. The Director of the Federal Register approves this incorporation by reference action under title 1, Code of Federal Regulations, part 51, subject to the annual revision of FAA, Order 7400.9 and publication of conforming amendments.

ADDRESSES: Send comments on this rule to: U.S. Department of Transportation, Docket Operations, West Building Ground Floor, Room W12–140, 1200 New Jersey SE., Washington, DC 20590–0001; Telephone: 1–800–647–5527; Fax: 202–493–2251. You must identify the Docket Number FAA–2014–0416; Airspace Docket No. 14–ASO–7, at the beginning of your comments. You may also submit and review received comments through the Internet at *http://www.regulations.gov.*

You may review the public docket containing the rule, any comments received, and any final disposition in person in the Dockets Office (see **ADDRESSES** section for address and phone number) between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.

An informal docket may also be examined during normal business hours at the office of the Eastern Service Center, Federal Aviation Administration, Room 350, 1701 Columbia Avenue, College Park, Georgia 30337.

FOR FURTHER INFORMATION CONTACT: John Fornito, Airspace Specialist, Operations Support Group, Eastern Service Center, Air Traffic Organization, Federal Aviation Administration, P.O. Box 20636, Atlanta, Georgia 30320; telephone (404) 305–6364.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to comment on this rulemaking by submitting such written data, views, or arguments, as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal. Communications should identify both docket numbers (FAA docket number. FAA–2014–0416; Airspace Docket No. 14–ASO–7) and be submitted in triplicate to the Docket Management System (see **ADDRESSES** section for address and phone number). You may also submit comments through the Internet at *http://www.regulations.gov.* Those wishing the FAA to acknowledge receipt of their comments on this document must submit with those comments a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket No. The postcard will be date/time stamped and returned to the commenter. All communications received before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this document may be changed in light of the comments received. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRMs

An electronic copy of this document may be downloaded from and comments submitted through *http://www.regulations.gov.* Recently published rulemaking documents can also be accessed through the FAA's Web page *at http://www.faa.gov/air_traffic/publications/airspace_amendments/.* Additionally, any person may obtain a copy of this document by submitting a request to the Federal Aviation Administration (FAA), Office of Air Traffic Airspace Management, ATA–400, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267–8783. Communications must identify both docket numbers for this document. Persons interested in being placed on a mailing list for future NPRM's should contact the FAA's Office of Rulemaking, (202) 267–9677, to request a copy of Advisory Circular No. 11–2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

The Proposal

The FAA is considering an amendment to Title 14, Code of Federal Regulations (14 CFR) part 71 to establish Class D airspace within a 4.5-mile radius of Craig Field Airport, Selma, AL, and amend existing Class E airspace extending upward from 700 feet above the surface to within a 7-mile radius of the airport, with a segment from the 7-mile radius to 12.4 miles southeast of the airport. Controlled airspace is necessary to support the operation of the new air traffic control tower, and would enhance the safety and management of IFR operations.

Class D and E airspace designations are published in Paragraphs 5000 and 6005 respectively, of FAA Order 7400.9X, dated August 7, 2013, and effective September 15, 2013, which is incorporated by reference in 14 CFR 71.1. The Class D and E airspace designations listed in this document will be published subsequently in the Order.

The FAA has determined that this proposed regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore, (1) is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a Regulatory Evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this proposed rule, when promulgated, would not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This proposed rulemaking is promulgated under the authority described in Subtitle VII, Part, A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This proposed regulation is within the scope of that authority as it would establish Class D and amend Class E airspace at Craig Field Airport, Selma, AL.

This proposal will be subject to an environmental analysis in accordance with FAA Order 1050.1E, ''Environmental Impacts: Policies and Procedures'' prior to any FAA final regulatory action.

Lists of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for Part 71 will continue to read as follows:

Authority: 49 U.S.C. 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of Federal Aviation

Administration Order 7400.9X, Airspace Designations and Reporting Points, dated August 7, 2013, and effective September 15, 2013, is amended as follows:

Paragraph 5000 Class D Airspace

* * * * *

ASO AL D Selma, AL [NEW]

Craig Field Airport, AL
(Lat. 32°20′38″ N., long. 86°59′16″ W.)

That airspace extending upward from the surface up to and including 2,500 feet MSL within a 4.5-mile radius of Craig Field Airport. This Class D airspace area is effective during specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Directory.

Paragraph 6005 Class E Airspace Areas Extending Upward from 700 feet or More Above the Surface of the Earth.

* * * * *

ASO AL E5 Selma, AL [AMENDED]

Craig Field Airport, AL
(Lat. 32°20′38″ N., long. 86°59′16″ W.)

That airspace extending upward from 700 feet above the surface within a 7-mile radius of. Craig Field Airport, and within 2.6 miles each side of the 145° bearing from the airport, extending from the 7-mile radius to 12.4 miles southeast of the airport.

Issued in College Park, Georgia, on September 2, 2014.

Myron A. Jenkins,

Manager, Operations Support Group, Eastern Service Center, Air Traffic Organization.

[FR Doc. 2014–21578 Filed 9–9–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2014–0014; Airspace Docket No. 13–ASO–27]

Proposed Establishment of Class D Airspace and Amendment of Class E Airspace; Dallas, GA

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This action proposes to establish Class D airspace and amend Class E airspace at Dallas, GA, to accommodate the proposed temporary air traffic control tower at Paulding Northwest Atlanta Airport. Controlled airspace is necessary for the safety and management of instrument flight rules (IFR) operations at the airport. This action also would recognize the airport's name change.

DATES: 0901 UTC. Comments must be received on or before October 27, 2014. The Director of the Federal Register approves this incorporation by reference action under title 1, Code of Federal Regulations, part 51, subject to the annual revision of FAA, Order 7400.9 and publication of conforming amendments.

ADDRESSES: Send comments on this rulemaking to: U. S. Department of Transportation, Docket Operations, West Building Ground Floor, Room W12–140, 1200 New Jersey SE., Washington, DC 20590–0001; Telephone: 1–800–647–5527; Fax: 202–493–2251. You must identify the Docket Number FAA–2014–0014; Airspace Docket No. 13–ASO–27, at the beginning of your comments. You may also submit and review received comments through the Internet at *http://www.regulations.gov.*

You may review the public docket containing the rule, any comments received, and any final disposition in person in the Dockets Office (see **ADDRESSES** section for address and phone number) between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.

An informal docket may also be examined during normal business hours at the office of the Eastern Service Center, Federal Aviation Administration, Room 350, 1701 Columbia Avenue, College Park, Georgia 30337.

FOR FURTHER INFORMATION CONTACT: John Fornito, Airspace Specialist, Operations Support Group, Eastern Service Center, Air Traffic Organization, Federal Aviation Administration, P.O. Box 20636, Atlanta, Georgia 30320; telephone (404) 305–6364.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to comment on this rulemaking by submitting such written data, views, or arguments, as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal. Communications should identify both docket numbers (FAA docket number. FAA–2014–0014; Airspace Docket No. 13–ASO–27) and be submitted in triplicate to the Docket Management System (see **ADDRESSES** section for address and phone number). You may also submit comments through the Internet at *http://www.regulations.gov.* Those wishing the FAA to acknowledge receipt of their comments on this rulemaking must submit with those comments a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket No. The postcard will be date/time stamped and returned to the commenter. All communications received before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this document may be changed in light of the comments received. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRMs

An electronic copy of this document may be downloaded from and comments submitted through *http://www.regulations.gov.* Recently published rulemaking documents can also be accessed through the FAA's Web page *at http://www.faa.gov/air_traffic/publications/airspace_amendments/.* Additionally, any person may obtain a copy of this document by submitting a request to the Federal Aviation Administration (FAA), Office of Air Traffic Airspace Management, ATA–400, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267–8783. Communications must identify both docket numbers for this document. Persons interested in being placed on a mailing list for future NPRM's should contact the FAA's Office of Rulemaking, (202) 267–9677, to request a copy of Advisory Circular No. 11–2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

The Proposal

The FAA is considering an amendment to Title 14, Code of Federal Regulations (14 CFR) part 71 to establish Class D airspace within a 4.2-mile radius of Paulding Northwest Atlanta Airport, Dallas, GA, formerly Paulding County Regional Airport; and amend existing Class E airspace extending upward from 700 feet above the surface to within a 6.7-mile radius of the airport. Controlled airspace is necessary to support the operation of the proposed temporary air traffic control tower, and would enhance the safety and management of IFR operations.

Class D and E airspace designations are published in Paragraphs 5000 and

6005 respectively, of FAA Order 7400.9X, dated August 7, 2013, and effective September 15, 2013, which is incorporated by reference in 14 CFR 71.1. The Class D and E airspace designations listed in this document will be published subsequently in the Order.

The FAA has determined that this proposed regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore, (1) is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a Regulatory Evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this proposed rule, when promulgated, would not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This proposed rulemaking is promulgated under the authority described in Subtitle VII, Part, A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This proposed regulation is within the scope of that authority as it would establish Class D and amend existing Class E airspace at Paulding Northwest Atlanta Airport, Dallas, GA.

This proposal will be subject to an environmental analysis in accordance with FAA Order 1050.1E, ''Environmental Impacts: Policies and Procedures'' prior to any FAA final regulatory action. It is anticipated that this environmental analysis will be incorporated into the environmental document described in more detail at 79 FR 22177 (May 21, 2014).

Lists of Subjects in 14 CFR Part 71:

Airspace, Incorporation by reference, Navigation (Air).

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for Part 71 will continue to read as follows:

Authority: 49 U.S.C. 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of Federal Aviation Administration Order 7400.9X, Airspace Designations and Reporting Points, dated August 7, 2013, and effective September 15, 2013, is amended as follows:

Paragraph 5000 Class D Airspace

* * * * *

ASO GA D Dallas, GA [New]

Paulding Northwest Atlanta Airport, GA
(Lat. 33°54′43″ N., long. 84°56′26″ W.)

That airspace extending upward from the surface up to and including 2,500 feet MSL within a 4.2-mile radius of Paulding Northwest Atlanta Airport. This Class D airspace area is effective during specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Directory.

Paragraph 6005. Class E Airspace Areas Extending Upward From 700 Feet or More Above the Surface of the Earth.

* * * * *

ASO GA E5 Dallas, GA [Amended]

Paulding Northwest Atlanta Airport, GA
(Lat. 33°54′43″ N., long. 84°56′26″ W.)

That airspace extending upward from 700 feet above the surface within a 6.7-mile radius of. Paulding Northwest Atlanta Airport.

Issued in College Park, Georgia, on September 2, 2014.

Myron A. Jenkins,

Manager, Operations Support Group, Eastern Service Center, Air Traffic Organization.

[FR Doc. 2014–21582 Filed 9–9–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Parts 610 and 680

[Docket No. FDA–2014–N–1110]

Revocation of General Safety Test Regulations That Are Duplicative of Requirements in Biologics License Applications; Correction

AGENCY: Food and Drug Administration, HHS.

ACTION: Proposed rule; correction.

SUMMARY: The Food and Drug Administration is correcting a proposed rule entitled ''Revocation of General Safety Test Regulations That Are Duplicative of Requirements in Biological License Applications'' that appeared in the **Federal Register** of August, 22, 2014. The document proposed to amend the biologics regulations by removing the general safety test requirements for biological products. The document published with the incorrect title. This document corrects that error.

FOR FURTHER INFORMATION CONTACT: Lori J. Churchyard, Center for Biologics Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 71, Rm. 7301, Silver Spring, MD 20993–0002, 240–402–7911.

SUPPLEMENTARY INFORMATION: In the **Federal Register** of August 22, 2014, in FR Doc. 2014–19888, on page 49727, the following correction is made:

1. On page 49727, in the third column, in the heading of the document, ''Revocation of General Safety Test Regulations That Are Duplicative of Requirements in Biological License Applications'' is corrected to read ''Revocation of General Safety Test Regulations That Are Duplicative of Requirements in Biologics License Applications''.

Dated: September 3, 2014.

Leslie Kux,

Assistant Commissioner for Policy.

[FR Doc. 2014–21481 Filed 9–9–14; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 100

[Docket Number USCG–2014–0657]

RIN 1625–AA08

Special Local Regulation; Clearwater Super Boat National Championship; Gulf of Mexico, Clearwater Beach, FL

AGENCY: Coast Guard, DHS.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Coast Guard is proposing to establish a special local regulation on the waters of the Gulf of Mexico in the vicinity of Clearwater Beach, Florida during the Clearwater Super Boat National Championship. The race is scheduled to take place annually from approximately 10 a.m. to 5 p.m. daily during the last Saturday and Sunday of September. The proposed special local regulation is necessary to protect the safety of race participants, participant vessels, spectators, and the general public on the navigable waters of the United States during the event. The special local regulation would restrict vessel traffic in the waters of the Gulf of Mexico in the vicinity of Clearwater, Florida. It would establish the following three areas: a race area, where all persons and vessels, except those persons and vessels participating in the high speed boat races, are prohibited from entering, transiting through, anchoring in, or remaining within; a spectator area, where all vessels must be anchored or operate at No Wake Speed; and an enforcement area where designated representatives may control vessel traffic as determined by the prevailing conditions.

DATES: Comments and related material must be received by the Coast Guard on or before October 10, 2014.

ADDRESSES: You may submit comments identified by docket number using any one of the following methods:

(1) *Federal eRulemaking Portal: http://www.regulations.gov.*

(2) *Fax:* (202) 493–2251.

(3) *Mail or Delivery:* Docket Management Facility (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001. Deliveries accepted between 9 a.m. and 5 p.m., Monday through Friday, except federal holidays. The telephone number is (202) 366–9329.

See the ''Public Participation and Request for Comments'' portion of the **SUPPLEMENTARY INFORMATION** section below for further instructions on submitting comments. To avoid duplication, please use only one of these three methods.

FOR FURTHER INFORMATION CONTACT: If you have questions on this rule, call or email Marine Science Technician First Class Hector I. Fuentes, Sector St. Petersburg Prevention Department, Coast Guard; telephone (813) 228–2191, email *D07-SMB-Tampa-WWM@uscg.mil.* If you have questions on viewing or submitting material to the docket, call Cheryl Collins, Program Manager, Docket Operations, telephone (202) 366–9826.

SUPPLEMENTARY INFORMATION:

Table of Acronyms

DHS Department of Homeland Security
FR **Federal Register**
NPRM Notice of Proposed Rulemaking

A. Public Participation and Request for Comments

We encourage you to participate in this rulemaking by submitting comments and related materials. All comments received will be posted without change to *http://www.regulations.gov* and will include any personal information you have provided.

1. Submitting Comments

If you submit a comment, please include the docket number for this rulemaking, indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation. You may submit your comments and material online at *http://www.regulations.gov,* or by fax, mail, or hand delivery, but please use only one of these means. If you submit a comment online, it will be considered received by the Coast Guard when you successfully transmit the comment. If you fax, hand deliver, or mail your comment, it will be considered as having been received by the Coast Guard when it is received at the Docket Management Facility. We recommend that you include your name and a mailing address, an email address, or a telephone number in the body of your document so that we can contact you if we have questions regarding your submission.

To submit your comment online, go to *http://www.regulations.gov,* type the docket number USCG–2014–0657 in the ''SEARCH'' box and click ''SEARCH.'' Click on ''Submit a Comment'' on the line associated with this rulemaking.

If you submit your comments by mail or hand delivery, submit them in an unbound format, no larger than 8½ by 11 inches, suitable for copying and electronic filing. If you submit comments by mail and would like to know that they reached the Facility, please enclose a stamped, self-addressed postcard or envelope. We will consider all comments and material received during the comment period and may change the rule based on your comments.

2. Viewing Comments and Documents

To view comments, as well as documents mentioned in this preamble as being available in the docket, go to *http://www.regulations.gov,* type the docket number USCG–2014–0657 in the ''SEARCH'' box and click ''SEARCH.'' Click on Open Docket Folder on the line associated with this rulemaking. You may also visit the Docket Management Facility in Room W12–140 on the ground floor of the Department of Transportation West Building, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except federal holidays.

3. Privacy Act

Anyone can search the electronic form of comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review a Privacy Act notice regarding our public dockets in the January 17, 2008, issue of the **Federal Register** (73 FR 3316).

4. Public Meeting

We do not plan to hold a public meeting. But you may submit a request for one, using one of the methods specified under **ADDRESSES**. Please explain why you believe a public meeting would be beneficial. If we determine that one would aid this rulemaking, we will hold one at a time and place announced by a later notice in the **Federal Register**.

B. Regulatory History and Information

The Coast Guard is proposing to establish this special local regulation on the waters of the Gulf of Mexico in the vicinity of Clearwater Beach, Florida during the Clearwater Super Boat National Championship. The race is scheduled to take place annually from approximately 10 a.m. to 5 p.m. during the last Saturday and Sunday of September. This proposed rule is necessary to protect the safety of race participants, participant vessels, spectators, and the general public on the

navigable waters of the United States during the event.

C. Basis and Purpose

The legal basis for the proposed rule is the Coast Guard's authority to establish special local regulations: 33 U.S.C. 1233, 33 CFR 1.05–1.

The purpose of the proposed rule is to provide for the safety of life on navigable waters of the United States during the Clearwater Super Boat National Championship.

D. Discussion of Proposed Rule

This proposed rule is necessary to establish a special local regulation that will encompass certain waters of the Gulf of Mexico in Clearwater Beach, Florida. The proposed special local regulations will be enforced from approximately 10 a.m. to 5 p.m. normally occurring annually during the last Saturday and Sunday of September. The proposed special local regulations will establish the following three areas: (1) A race area, where all persons and vessels, except those persons and vessels participating in the high speed boat races, are prohibited from entering, transiting through, anchoring in, or remaining within; (2) a spectator area, where all vessels must be anchored or operate at No Wake Speed; and (3) an enforcement area where designated representatives may control vessel traffic as determined by the prevailing conditions.

Persons and vessels may request authorization to enter, transit through, anchor in, or remain within the race area or buffer zone by contacting the Captain of the Port St. Petersburg by telephone at (727) 824–7506, or a designated representative via VHF radio on channel 16. If authorization to enter, transit through, anchor in, or remain within the race area or buffer zone is granted by the Captain of the Port St. Petersburg or a designated representative, all persons and vessels receiving such authorization must comply with the instructions of the Captain of the Port St. Petersburg or a designated representative.

E. Regulatory Analyses

We developed this proposed rule after considering numerous statutes and executive orders related to rulemaking. Below we summarize our analyses based on a number of these statutes or executive orders.

1. Regulatory Planning and Review

This proposed rule is not a significant regulatory action under section 3(f) of Executive Order 12866, Regulatory Planning and Review, as supplemented by Executive Order 13563, Improving Regulation and Regulatory Review, and does not require an assessment of potential costs and benefits under section 6(a)(3) of Executive Order 12866 or under section 1 of Executive Order 13563. The Office of Management and Budget has not reviewed it under those Orders.

The economic impact of this proposed rule is not significant for the following reasons: (1) The special local regulations would be enforced for only seven hours a day for two days; (2) although persons and vessels are prohibited to enter, transit through, anchor in, or remain within the race area or buffer zone without authorization from the Captain of the Port St. Petersburg or a designated representative, they may operate in the surrounding area during the enforcement period; (3) persons and vessels may still enter, transit through, anchor in, or remain within the race area and buffer zone, or anchor in the spectator area, during the enforcement period if authorized by the Captain of the Port St. Petersburg or a designated representative; and (4) the Coast Guard would provide advance notification of the special local regulations to the local maritime community by Local Notice to Mariners, Broadcast Notice to Mariners and/or on-scene designate representatives.

2. Impact on Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we have considered the impact of this proposed rule on small entities. The Coast Guard certifies under 5 U.S.C. 605(b) that this proposed rule will not have a significant economic impact on a substantial number of small entities.

If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and that this rule would have a significant economic impact on it, please submit a comment (see **ADDRESSES**) explaining why you think it qualifies and how and to what degree this rule would economically affect it.

3. Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this proposed rule. If the rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section above. The Coast Guard will not retaliate against small entities that question or complain about this proposed rule or any policy or action of the Coast Guard.

4. Collection of Information

This proposed rule will not call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520.).

5. Federalism

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this proposed rule under that Order and determined that this rule does not have implications for federalism.

6. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places or vessels.

7. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Though this proposed rule would not result in such expenditure, we do discuss the effects of this rule elsewhere in this preamble.

8. Taking of Private Property

This proposed rule would not cause a taking of private property or otherwise have taking implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

9. Civil Justice Reform

This proposed rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

10. Protection of Children From Environmental Health Risks

We have analyzed this proposed rule under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. This rule is not an economically significant rule and would not create an environmental risk to health or risk to safety that might disproportionately affect children.

11. Indian Tribal Governments

This proposed rule does not have tribal implications under Executive Order 13175, Consultation and Coordination With Indian Tribal Governments, because it would not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

12. Energy Effects

This proposed rule is not a ''significant energy action'' under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use.

13. Technical Standards

This proposed rule does not use technical standards. Therefore, we did not consider the use of voluntary consensus standards.

14. Environment

We have analyzed this proposed rule under Department of Homeland Security Management Directive 023–01 and Commandant Instruction M16475.lD, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321–4370f), and have made a preliminary determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. This proposed rule is categorically excluded from further review under paragraph 34(g) of Figure 2–1 of the Commandant Instruction. A preliminary environmental analysis checklist supporting this determination is available in the docket where indicated under **ADDRESSES**. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

F. List of Subjects in 33 CFR Part 100

Marine safety, Navigation (water), Reporting and recordkeeping requirements, Waterways.

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR part 100 as follows:

PART 100—SAFETY OF LIFE ON NAVIGABLE WATERS

■ 1. The authority citation for part 100 continues to read as follows:

Authority: 33 U.S.C. 1233.

■ 2. Add a Special Local Regulation § 100.721 to read as follows:

§ 100.721 Special Local Regulations; Clearwater Super Boat National Championship, Gulf of Mexico; Clearwater Beach, FL.

(a) *Regulated Areas.* The following regulated areas are established as special local regulations. All coordinates are North American Datum 1983.

(1) *Race Area.* All waters of the Gulf of Mexico contained within the following points: 27°58.67′ N, 82°50.32′ W, thence to position 27°58.60′ N, 82°49.98′ W, thence to position 28°00.88′ N, 82°50.35′ W, thence to position 28°00.80′ N, 82°49.90′ W, thence back to the original position, 28°58.67′ N, 82°50.32′ W.

(2) *Spectator Area.* All waters of Gulf of Mexico seaward no less than 150 yards from the race area and as agreed upon by the Coast Guard and race officials.

(3) *Enforcement Area.* All waters of the Gulf of Mexico encompassed within the following points: 28°58.67′ N, 82°50.62′ W, thence to position 28°00.95′ N, 82°49.75′ W, thence to position 27°58.53′ N, 82°50.53′ W, thence to position 27°58.38′ N, 82°49.88′ W, thence back to position 28°58.67′ N, 82°50.62′ W.

(b) *Definition.* The term ''designated representative'' means Coast Guard Patrol Commanders, including Coast Guard coxswains, petty officers, and other officers operating Coast Guard vessels, and Federal, state, and local officers designated by or assisting the Captain of the Port St. Petersburg in the enforcement of the regulated areas.

(c) *Regulations.*

(1) All persons and vessels are prohibited from entering, transiting through, anchoring in, or remaining within the Race Area unless an authorized race participant.

(2) Designated representatives may control vessel traffic throughout the enforcement area as determined by the prevailing conditions.

(3) All vessels are to be anchored and/or operate at a No Wake Speed in the spectator area. On-scene designated representatives will direct spectator vessels to the spectator area.

(4) Persons and vessels may request authorization to enter, transit through, anchor in, or remain within the regulated areas by contacting the Captain of the Port St. Petersburg by telephone at (727) 824–7506, or a designated representative via VHF radio on channel 16. If authorization is granted by the Captain of the Port St. Petersburg or a designated representative, all persons and vessels receiving such authorization must comply with the instructions of the Captain of the Port St. Petersburg or a designated representative.

(d) *Effective Date.* This section is effective annually from approximately 10 a.m. to 5 p.m. EDT daily during the last Saturday and Sunday of September.

Dated: August 13, 2014.

G.D. Case,

Captain, U.S. Coast Guard, Captain of the Port Saint Petersburg.

[FR Doc. 2014–21463 Filed 9–9–14; 8:45 am]

BILLING CODE 9110–04–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

23 CFR Parts 450 and 771

Federal Transit Administration

49 CFR Parts 613 and 622

[Docket No. FHWA–2014–0031; FHWA RIN 2125–AF66; FTA RIN 2132–AB21]

Additional Authorities for Planning and Environmental Linkages

AGENCY: Federal Highway Administration, Federal Transit Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This NPRM provides interested parties with the opportunity to comment on proposed revisions to the Federal Highway Administration (FHWA) and the Federal Transit Administration's (FTA) statewide and nonmetropolitan and metropolitan transportation planning regulations related to the use of and reliance on planning products developed during the transportation planning process for project development and the environmental review process. The revisions are prompted by the enactment of the *Moving Ahead for*

Progress in the 21st Century Act (MAP–21). Specifically, through this rulemaking FHWA and FTA would interpret and implement MAP–21's additional authority for FHWA and FTA to use planning products developed by States, Metropolitan Planning Organizations (MPO), and other agencies during the transportation planning process in the environmental review process for a project.

DATES: Comments must be received on or before November 10, 2014.

ADDRESSES: To ensure that you do not duplicate your docket submissions, please submit them by only one of the following means:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov* and follow the online instructions for submitting comments.
- *Mail:* Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Ave., SE., West Building Ground Floor Room W12–140, Washington, DC 20590–0001;
- *Hand Delivery:* West Building Ground Floor, Room W12–140, 1200 New Jersey Ave. SE., between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is (202) 366–9329;
- *Instructions:* You must include the agency name and docket number or the Regulatory Identification Number (RIN) for the rulemaking at the beginning of your comments. All comments received will be posted without change to *http://www.regulations.gov,* including any personal information provided.

FOR FURTHER INFORMATION CONTACT: For the FHWA: Mr. Harlan W. Miller, Planning Oversight and Stewardship Team (HEPP–10), (202) 366–0847; or Mr. Jomar Maldonado, Office of the Chief Counsel (HCC–30), (202) 366–1373. For the FTA: Ms. Elizabeth Patel, Office of Planning and Environment, (202) 366–0244; or Ms. Nancy-Ellen Zusman, Office of Chief Counsel, (312) 353–2577. Both agencies are located at 1200 New Jersey Avenue SE., Washington, DC 20590. Office hours are from 8:00 a.m. to 4:30 p.m., Eastern Time for FHWA, and 9 a.m. to 5:30 p.m., Eastern Time for FTA, Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION:

Background

On July 6, 2012, President Obama signed into law MAP–21 (Pub. L. 112–141, 126 Stat. 405); section 1310 codifies in 23 U.S.C. 168 an additional authority for the use of planning products in the environmental review process required under the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*). This NPRM proposes amendments to 23 CFR parts 450 and 771, as well as amendments to the authorities in 49 CFR parts 613 and 622, to reflect this additional authority. The FHWA and FTA, hereafter referred to as the ''Agencies,'' are carrying out this rulemaking on behalf of the Secretary.

General Discussion of the Proposal

The transportation planning process—established in 23 U.S.C. 134–135, 49 U.S.C. 5303–5304, and through implementing regulations at 23 CFR part 450—create the Statewide and Nonmetropolitan Transportation Planning and the Metropolitan Transportation Planning programs. These programs provide funding to support cooperative, continuous, and comprehensive planning for making transportation investment decisions throughout each State—both in metropolitan and nonmetropolitan areas.

The Statewide and Nonmetropolitan Transportation Planning Process

States must undertake a statewide planning process to develop a multimodal, long-range statewide transportation plan and a statewide transportation improvement program (STIP) (23 U.S.C. 135; 49 U.S.C. 5304; 23 CFR part 450, subpart B). The long-range statewide transportation plan must provide for the development of transportation facilities that function as an intermodal State transportation system and must cover at least a 20-year planning horizon at the time of adoption by the State (23 CFR 450.214). When developing a plan, States need to cooperate with MPOs in the metropolitan areas (23 CFR 450.208). In nonmetropolitan areas, States must cooperate with local elected officials who have the responsibility for transportation (23 CFR 450.208). Some States may have regional planning organizations to help support the planning process in nonmetropolitan areas. States also must provide an opportunity for public comment on the long-range statewide transportation plan (23 CFR 450.214).

In addition, States must develop a federally approved STIP at least once every 4 years (23 CFR 450.216). The STIP contains a 4-year program of projects, and must be consistent with the long-range statewide and metropolitan transportation plans. The STIP must identify the sources of funding that is reasonably expected to be available to support the program of projects in the STIP (23 CFR 450.216). When the State submits the STIP to the Agencies for approval, the State must certify that the metropolitan and statewide and nonmetropolitan transportation planning processes are in compliance with applicable requirements. The Agencies will approve the STIP if they jointly determine that the STIP substantially meets the statewide and nonmetropolitan transportation planning requirements (23 CFR 450.218).

The Statewide transportation planning process provides an opportunity for States, in cooperation with local elected officials and MPOs, as appropriate, to develop studies and analyses. The STIP identifies the projects or program of projects resulting from these studies and analyses. Examples of these studies and analyses may include corridor planning studies, evaluations of alternatives, traffic analyses and forecasts, growth studies, land use analyses, and population growth forecasts. It also provides an opportunity for States, in cooperation with local elected officials and MPOs, as appropriate, to make decisions that would affect transportation project proposals such as decisions on transportation mode choice (e.g., transit, highway, rail), financing (e.g., tolling, use of public-private partnerships), and general travel corridor location.

The Metropolitan Transportation Planning Process

Metropolitan transportation planning occurs in urbanized areas with a population of 50,000 or greater (23 U.S.C. 134; 49 U.S.C. 5303; 23 CFR part 450, subpart C). An MPO is the policy board of the organization created and designated by the Governor and local officials to carry out the metropolitan planning process in an urbanized area. The boundary of the metropolitan planning area covered by the MPO planning process is established by agreement between the Governor and the MPO and, in general, encompasses the current urbanized area and the area to be urbanized during a 20-year forecast period. Certain urbanized areas—generally those over 200,000 in population—are designated as transportation management areas (TMA).

An MPO establishes the investment priorities of Federal transportation funds in its metropolitan area through the metropolitan transportation plan and transportation improvement program (TIP). Each MPO, regardless of size, must prepare a metropolitan transportation plan and update it every 4 or 5 years (23 CFR 450.322). The plan must cover at least a 20-year planning

horizon at the time of adoption by the MPO. Before it adopts its plan, the MPO must provide a reasonable opportunity for public comment on the plan's content (23 CFR 450.322).

The MPO, in cooperation with the State and providers of public transportation, must also develop a TIP (23 CFR 450.324). The TIP is a prioritized listing/program of transportation projects covering a period of 4 years, and must include a financial plan that describes the sources of funding that would reasonably be expected to be available to support the projects in the TIP. The MPO must update and approve the TIP at least once every 4 years. Prior to approving the TIP, the MPO must provide a reasonable opportunity for public comment on the TIP. The TIP also is subject to approval by the Governor. When the MPO submits the TIP to the State, the MPO must certify that the metropolitan transportation planning process is in compliance with applicable requirements (23 CFR 450.334).

The Agencies must certify the transportation planning process in TMAs at least once every 4 years. During that certification process, the Agencies will review whether the process complies with the metropolitan transportation planning requirements (23 CFR 450.334).

Similar to the statewide transportation planning process, the metropolitan transportation planning process provides opportunities for agencies to develop analyses and studies, and to make decisions that may affect the proposals for projects.

NPRM on 23 CFR Part 450 and 49 CFR Part 613 Published June 2, 2014

The Agencies jointly issued another NPRM for 23 CFR part 450 and 49 CFR part 613 to reflect other changes made by MAP–21 on statewide and metropolitan planning processes (79 FR 31784, June 2, 2014). The proposed rule would make the regulations consistent with current statutory requirements and propose the following: A new mandate for States and MPOs to take a performance-based approach to planning and programming; a new emphasis on the nonmetropolitan transportation planning processes, by requiring State to have a higher level of involvement with nonmetropolitan local officials and providing a process for the creation of regional transportation planning organizations; a structural change to the membership of the larger MPOs; a new framework for voluntary scenario planning; and a process for optional programmatic mitigation plans. Depending on timing, the Agencies may combine the proposed rules and issue a single final rule.

Other Planning Processes Pursuant to Federal Law

The statewide and metropolitan transportation planning processes are not the only planning processes that are conducted pursuant to Federal law. There are other planning processes that may occur during, but independent of the transportation planning process and that could produce planning products that should be considered in the environmental review of a project. For example, 23 U.S.C. 119(e) (section 1106 of MAP–21) requires States to develop risk-based asset management plans to improve or preserve the condition of assets in the National Highway System and to improve its performance. Another process outside the statewide and metropolitan transportation planning process is the process established by MAP–21's section 1315(b), requiring the evaluations of reasonable alternatives for roads, highways, or bridges that repeatedly require repair and reconstruction activities. The results of both of these types of planning activities could be useful to States and MPOs when making decisions about transportation needs and investments.

The FTA is required by law to evaluate and rate transit capital projects seeking funding under the discretionary Capital Investment Grant program (known more commonly as the New Starts, Small Starts, and Core Capacity program) authorized by 49 U.S.C. 5309. Additionally, proposed projects must proceed through several formal steps outlined in law before they can receive construction funding from FTA. Prior to the enactment of MAP–21, the law required that a project seeking Capital Investment Grant funding first complete a formal Alternatives Analysis study to evaluate the mode and alignment options for the project corridor. The Alternatives Analysis informed local officials and community members of the benefits, costs, and impacts of transportation options at a greater level of detail than is typically undertaken during the metropolitan transportation planning process. Although MAP–21 eliminated the requirement for a formal Alternatives Analysis study separate from the metropolitan transportation planning process and the environmental review process, some project sponsors may choose to complete the studies they already had underway when the law went into effect or initiate new Alternatives Analysis studies as a method to better inform local decisionmaking.

In addition, there are many planning processes conducted pursuant to Federal law that occur outside of the surface transportation context that could also produce planning products to assist in the environmental review of surface transportation projects. Examples include the development of State and local hazard mitigation plans (under Federal Emergency Management Agency's requirements), the Natural Resources Conservation Service's conservation plans, Federal Aviation Administration's airport layout plans, U.S. Fish and Wildlife Service habitat conservation plans, and U.S. Forest Service land management plans.

Planning and Environmental Linkages

The FHWA and FTA use the term Planning and Environment Linkages (PEL) to refer to the process of using and relying on planning analyses, studies, decisions, or other information for the project development and environmental review of transportation projects. With PEL, the Agencies could, for example: establish a project's purpose and need by relying on the goal and objective developed during the planning process; eliminate the need to further consider alternatives deemed to be unreasonable by relying on alternatives analyses conducted during planning; rely on future land use plans as a source of information for the cumulative impacts analysis required under NEPA; or rely on the modal choice selection as a method of establishing the criteria for the consideration of reasonable alternatives to address the identified need—provided such strategies are consistent with NEPA for the particular project.

States, MPOs, and local agencies can achieve significant benefits by incorporating environmental and community values into transportation decisions during early planning and carrying these considerations through project development and delivery. Through its focus on building interagency relationships, the PEL approach enables non-transportation Federal, State, and local government resource agencies and tribal governments to be more effective players in the transportation decisionmaking process. Federal, State, and local government resource agencies and tribal governments have an opportunity to help shape transportation projects by getting involved in the early stages of planning. In addition, improvements to interagency relationships may help resolve differences on key issues as

transportation programs and projects move from planning to design and implementation.

Since 1998, the Agencies have undertaken several initiatives to promote PEL. In February 2005, the Agencies disseminated a legal analysis and program guidance document, ''*Linking the Transportation Planning and NEPA Process*'' (*http://www.fhwa.dot.gov/hep/guidance/plannepalegal050222.cfm*), articulating how information, analyses, and products from the transportation planning process could be incorporated into and relied upon during the NEPA review process. In 2007, the Agencies developed the regulatory authorities in 23 CFR 450.212 and 450.318, taking into account the guiding principles from the 2005 legal analysis and program guidance. In addition, the Agencies developed and incorporated as Appendix A to 23 CFR part 450 more detailed guidance that described how information, analysis, and products from transportation planning can be incorporated into and relied upon in NEPA documents. Courts have upheld the PEL concept as a valid process for informing the project development process and the environmental review process.[1]

Congress established additional authority for PEL in 23 U.S.C. 168. This additional authority is not meant to displace or repeal other authorities that may be available for PEL, including the existing authority available in 23 CFR 450.212 and 450.318. Rather, it provides an additional avenue for pursuing PEL. See 23 U.S.C. 168(f)(3). This NPRM proposes to amend 23 CFR parts 450 and 771 to reflect the additional authority under 23 U.S.C. 168. It also amends the authorities in 49 CFR parts 613 and 622.

Section-by-Section Discussion of the Proposal

Subpart B—Statewide Transportation Planning and Programming

Section 450.212

The term ''environmental review process'' is used throughout 23 U.S.C. 168 and is defined in the section as ''the process for preparing for a project an environmental impact statement, environmental assessment, categorical exclusion, or other document prepared'' under NEPA. However, using this term throughout the regulation would create confusion with the term ''environmental review process'' defined under 23 U.S.C. 139(a)(3)(A), which ''includes the process for and completion of any environmental permit, approval, review, or study required for a project under any Federal law other than'' NEPA. To avoid this confusion, the Agencies propose to refer in the regulation to the NEPA classes of action (categorical exclusions (CE), environmental assessments (EA), or environmental impact statements (EIS)) and to other documents prepared under NEPA instead of relying on the term ''environmental review process.'' Proposed paragraph (d) contains the first instance.

Section 168 uses the term ''Federal lead agencies'' throughout. The Agencies propose to use the term throughout the proposed regulation to identify when the Federal agency is the responsible entity for a task. The term refers to the Federal agency that has the lead role in the NEPA process or the Federal agencies serving as joint leads when more than one Federal agency is involved. The term ''Federal lead agency'' is narrower than the term ''NEPA lead agencies'' used in 23 CFR 450.212(b)–(c) and 450.318(b)–(c) because it excludes non-Federal agencies that have been designated as joint lead agencies under 23 U.S.C. 139(c)(3). Section 168 makes clear that the Federal agency leading the NEPA review process bears the responsibility for taking some of the steps in the PEL adoption process pursuant to this authority. The use of ''Federal lead agency'' is also meant to capture States that have assumed the environmental review responsibilities of the Agencies under 23 U.S.C. 326 or 327. These sections establish programs that allow State agencies to assume the Agencies' NEPA responsibilities and responsibilities under other environmental requirements for highway and public transportation projects. The Agencies note that section 327(c)(2)(B)(iv) prohibits the assignment of responsibilities related to 23 U.S.C. 134 and 135 or 49 U.S.C. 5303 and 5304. However, this prohibition does not prohibit the assignment of responsibilities related to PEL under the authority of 23 U.S.C. 168 since this authority would be used during the NEPA review process and is a provision separate from 23 U.S.C. 134 and 135.

The Agencies propose to add a new paragraph (d) that interprets the new PEL authority under 23 U.S.C. 168. The introduction would make it clear that the authority granted in section 168 is a PEL authority in addition to other existing authorities for PEL such as 23 CFR sections 450.212(b) and 450.318(b), and 40 CFR 1502.21 (incorporation by reference). See 23 U.S.C. 168(f)(3). The introduction would establish the effect of the adoption process under section 168, which is to allow a planning product to be incorporated directly into an environmental review process document or other environmental document. See 23 U.S.C. 168(e). The introduction also emphasizes that the Agencies may adopt a planning product in its entirety or may choose to only adopt and use portions of these planning products. See 23 U.S.C. 168(b)(3). The introduction establishes that the timing of adoption could be at the time the Agencies and other joint lead agencies (like non-Federal lead agencies) are deciding the appropriate NEPA class of action or later when the Agencies are developing the NEPA documents. See 23 U.S.C. 168(b)(4). Finally, the introduction establishes that subparagraphs (d)(1) thru (d)(4) are pre-conditions prior to the adoption and use of planning products in the NEPA process under 23 U.S.C. 168.

The first condition, established through proposed paragraph (d)(1), is based on the definition of planning products found in 23 U.S.C. 168(a)(2) with three notable differences. First, the term ''timely'' used in the statute is not used in the rule. The Agencies believe that a timely planning product is a planning product that was approved no later than 5 years prior to the date on which the information will be adopted. See 23 U.S.C. 168(d)(10). The Agencies found that there was no need to introduce the term in the condition since this time restriction is a pre-requisite to adoption.

Second, in providing examples for detailed corridor or transportation plans, the statute makes specific reference only to those developed

[1] See *HonoluluTraffic.com* v. *Federal Transit Administration,* 742 F.3d 1222, 1230–32 (9th Cir. 2014) (using transportation planning process to define the project's purpose and need was reasonable, and reliance on a State-prepared alternatives analysis to eliminate alternatives was appropriate); *Building a Better Bellevue* v. *U.S. Dept. of Transp.,* 2013 WL 865843 (W.D. Wash. 2013) (Sound Transit's reliance in the transportation planning process to confine the purpose of the East Link to expanding light rail was reasonable, and the EIS was not required to study alternatives that did not meet that purpose); *Sierra Club* v. *U.S. Dept. of Transp.,* 310 F.Supp.2d 1168, 1193 (D. Nevada 2004) (a Federal agency does not violate NEPA by relying on prior studies and analyses performed by local and State agencies, and FHWA's reliance on the major investment study to eliminate alternatives was not arbitrary and capricious); *Laguna Greenbelt, Inc.* v. *U.S. Dept. of Transp.,* 42 F.3d 517, n. 6 (9th Cir. 1994) (the mere absence of a more thorough discussion in the EIS of alternatives that were discussed in and rejected as a result of prior State studies does not violate NEPA); *North Buckhead Civic Association* v. *Skinner,* 903 F.2d 1533, 1542–43 (11th Cir. 1990) (Federal, State, and local officials complied with federally mandated regional planning procedures to develop the purpose and need section of the EIS, and it was not necessary for the EIS to restate the conclusions of all the experts, or to engage in a rethinking of the regional and citywide transportation plans).

through the metropolitan planning process in 23 U.S.C. 134. The Agencies understand that the statute provides this reference as an example and believe that adding references to 23 U.S.C. 135 and 49 U.S.C. 5303–5304 would clarify that detailed corridor or transportation plans developed under those authorities are also covered by the section 168 authority.

Third, the Agencies are proposing a process for obtaining approvals for the planning products. Section 168(a)(2)(C) establishes that those planning products intended to be adopted and relied on during the environmental review process in accordance with the new section 168 authority must be approved by the State, all local and tribal governments where the project is located, and by any appropriate MPO. This approval requirement is a departure from current practice since approval is typically reserved for the overall plan and not required for the underlying analyses and studies that support the plan. Proposed paragraph (d)(1)(iii) puts the preparers of planning products on notice of this unique statutory requirement. The Agencies propose an approval process where the preparer of the planning product provides the planning product to the State, all local and tribal governments where the project is located, and appropriate MPO and allows them at least 60 days for its review and approval unless additional time is needed for good cause. The required approvals could occur through explicit approvals or through implicit approval if the State, local, or tribal government, or MPO remains silent, fails to object, or fails to explicitly disapprove the planning product within the 60 day period. The Agencies believe that 60 days is an appropriate time period that allows enough time for entities such as MPOs to meet to execute the required approval.

The second condition, established through proposed paragraph (d)(2), states that the planning product must be a planning decision or planning analysis. Planning decisions and planning analyses are described through the list of illustrative examples in section 168(c)(1)–(2). The Agencies note that this is not an exhaustive list of what could be considered a planning decision or planning analysis, but provides an illustration of the types of decisions or analyses that may be considered under this authority.

Proposed paragraph (d)(3) establishes that the preparer of the planning product must provide Federal, State, and local agencies that may have an interest in the project, tribal governments that may have an interest in the project, and the public with an opportunity to participate in the planning process that leads to the development of the planning product. The Agencies propose that this opportunity be announced through a notice, by publication or other means, during the planning process. The notification should identify the planning products that could be produced by the planning process and that could be used and relied upon during the NEPA process. This condition derives from 23 U.S.C. 168(d)(4). The Agencies decided to place this condition as a stand-alone prerequisite prior to the ''determination'' required from the Agencies in order to emphasize that it must be met at the planning stage instead of the NEPA stage, and that it must be met by the preparer of the planning product (i.e., State, MPO, or local agency) instead of the Federal lead agency. The Agencies believe that this difference between the location of the condition in the statutory and regulatory processes does not represent a substantial deviation from the statutory structure, and that this approach would retain the purpose of the statutory requirement while making it consistent with the planning process. The Agencies expect that this notification would be made during the agency consultation and public involvement process required for the plans.

Proposed paragraph (d)(4) establishes that the Federal lead agency must make a determination that the conditions in paragraphs (d)(4)(i)(A)–(H) have been met, secure the concurrence from all participating agencies in this determination, and make the determination and documentation relating to the planning product available for public review and comment before drafting, adopting and using the planning product for the NEPA process.

The list of conditions in proposed paragraphs (d)(4)(i)(A)–(H) is based on the list of conditions in 23 U.S.C. 168(d). Proposed paragraph (d)(4)(i)(A) mirrors section 168(d)(1) establishing that the planning product must be developed through a planning process conducted pursuant to applicable Federal law. Proposed paragraph (d)(4)(i)(B) reflects section 168(d)(2), which establishes that the planning product must have been developed through active consultation with appropriate Federal and State resource agencies and Indian tribes. It also adds a requirement that the Agencies must identify those agencies that participated in the development of the planning product if the planning product does not specifically mention them. This additional sentence is based on section 168(b)(2), which requires the Federal lead agency to identify the agencies that participated in the development of the planning product.

Proposed paragraph (d)(4)(i)(C) mirrors section 168(d)(3) which requires that the planning process must have included consideration of systems-level or corridor-wide transportation needs. Proposed paragraph (d)(4)(i)(D) mirrors section 168(d)(6) which establishes that no significant new information or new circumstances have occurred since the approval of the planning product. Proposed paragraph (d)(4)(i)(E) mirrors section 168(d)(7) which requires that the planning product be based on a rational basis and on reliable and reasonably current data and scientifically acceptable methodologies.

Proposed paragraph (d)(4)(i)(F) mirrors section 168(d)(8), which requires that the planning product be documented in sufficient detail to support the decision or the results of the analysis. Proposed paragraph (d)(4)(i)(G) mirrors section 168(d)(9), which requires the Federal lead agency to determine that the planning product is appropriate for adoption and use in the NEPA review. Finally, except for a correction due to a drafting error with the statute, the proposed paragraph (d)(4)(i)(H) mirrors section 168(d)(10), which the Agencies believe was intended to establish a 5-year limit on the validity of an approved planning product for purposes of the section 168 adoption process. Pursuant to the proposed regulatory language, for purposes of adoption and use of planning products under the authority of section 168, the date of approval of the planning products must not be earlier than 5 years from the date of its adoption and use in the NEPA process.

Proposed paragraph (d)(4)(ii) indicates that the lead agency must secure the concurrence on this determination from all participating agencies with relevant expertise. The lead agency should also secure the concurrence from project proponents as appropriate. Participating agencies are Federal and non-Federal agencies that have an interest in the project and have been invited to participate in the environmental review process for a project. See 23 U.S.C. 139(d)(1). The request for concurrence in the determination must include the planning products for review or indicate where the planning products may be found for review. The Agencies propose a process where the preparer of the planning product sends each

participating agency the determination and documentation relating to the planning product with a written request for concurrence. Once the participating agency acknowledges receipt of the material and the participating agency would have at least 60 days for its review and concurrence unless additional time is needed for good cause. The participating agency's acknowledgment of receipt may be done in a variety of ways such as oral communication (e.g., phone conversation or in person meeting), electronic (e.g., email), or regular mail (e.g., return receipt or letter acknowledging receipt). Each participating agency has the option of concurring or nonconcurring in the determination. The needed concurrence could occur through explicit concurrence or through implicit concurrence if the participating agency remains silent, fails to object, or fails to explicitly nonconcur with the determination within the 60-day period. Concurrence of the determination would be a concurrence with the Federal lead agency's determination that a planning product meets the conditions for use and adoption pursuant to section 168. Concurrence would not mean that the participating agency endorses the findings or conclusions of the planning product, nor that the data or methodologies are the only acceptable and reasonable ones available.

If one or more participating agencies do not concur, the statutory prerequisites for the use and adoption of the planning product through section 168 would not be met and the planning product cannot be used and adopted pursuant to the section 168 authority.

Proposed paragraph (d)(4)(iii) requires a public comment process for the determination. This comment process should also make available the documentation associated with the planning product that will be adopted and used. Ideally, this public review process will be coordinated with other public review processes required under NEPA, the environmental review process outlined in 23 U.S.C. 139, and the Agencies' environmental procedures. For example, the NEPA scoping process for an EIS provides an opportunity to share this determination with the public. Section 139(e) requires the Agencies to provide an opportunity for involvement by the participating agencies and the public in the definition of the purpose and need, and determining the range of alternatives. The public review process under this paragraph may be coordinated with these public involvement opportunities. The Agencies note that there may be situations where the public review and comment opportunity that must be provided under this authority would go above and beyond the public involvement required by NEPA, 23 U.S.C. 139, or the Agencies procedures. One example is when the FHWA or FTA would seek to adopt and rely on a planning product under this authority to support a CE determination.

Proposed paragraph (e) discusses the effect that the Agencies' adoption and use of a planning product pursuant to this authority may have on other Federal agencies. Section 168(e) establishes that any other Federal agency may use and rely on a planning product for their own reviews as long as the planning product and adoption meets the conditions outlined in section 168. The Agencies interpret ''reviews'' in this provision to mean the reviews other Federal agencies would need to undertake for environmental permits, licenses, and other approvals associated with the project, which also includes the NEPA responsibilities associated with those approvals. The provision in paragraph (e), like the statutory provision in section 168(e), is permissive and leaves it up to the reviewing Federal agency's discretion whether to rely on the planning product in its review.

Proposed paragraph (f) paraphrases the rules of construction established in section 168(f). The Agencies believe that the section applies to the incorporation by reference process outlined in paragraph (b), as well as the proposed section (d). These authorities should not be construed to (1) make NEPA applicable to the transportation planning process conducted under 23 U.S.C. and chapter 53 of 49 U.S.C.; (2) subject transportation plans and programs to NEPA if a CE determination, EA, or EIS process, or preparation of a document under NEPA is initiated for a project as a part of, or concurrently with, transportation planning activities; or (3) affect the use of planning products in the CE determination, EA, or EIS process, or document prepared under NEPA pursuant to other authorities under any other provision of law or to restrict the initiation of their development during the transportation planning process. Proposed paragraph (f)(3) is a savings clause that establishes that the authorities in sections 23 CFR 450.212 and 450.318, and section 168 do not prevent the reliance or use of planning products if another law exists that allows such reliance or use. It also establishes that nothing in these sections would prevent an entity from voluntarily initiating the start of the NEPA process during the transportation planning process.

Subpart C—Metropolitan Transportation Planning and Programming

Section 450.318

The Agencies propose to add a paragraph (f) to mirror the proposed section 450.212(d) but apply it to the metropolitan transportation planning process. The Agencies propose to add a section 450.318(g) that would mirror the proposed section 450.212(e) but apply it to the metropolitan transportation planning process. Finally, the Agencies propose to add a section 450.318(h) that would mirror the proposed section 450.212(f) but apply it to the metropolitan transportation planning process. The same discussion and analysis provided for the proposed paragraphs in section 450.212 applies to this section and is, therefore, incorporated by reference.

Part 771—Environmental Impact and Related Procedures

Section 771.111

The Agencies propose an amendment to paragraph (a)(2) of this section to reflect the new authority made available in 23 U.S.C. 168 and the proposed regulations in part 450.

Rulemaking Analyses and Notices

All comments received before the close of business on the comment closing date indicated above will be considered and will be available for examination in the docket at the above address. Comments received after the comment closing date will be filed in the docket and will be considered to the extent practicable. In addition to late comments, the Agencies will also continue to file relevant information in the docket as it becomes available after the comment period closing date, and interested persons should continue to examine the docket for new material.

Executive Orders 12866 and 13563 (Regulatory Planning and Review) and DOT Regulatory Policies and Procedures

Executive Orders 12866 and 13563 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). The Agencies have determined preliminarily that this action would not be a significant regulatory action under

Executive Order 12866 nor would it be significant within the meaning of U.S. Department of Transportation regulatory policies and procedures (44 FR 11032). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. It is anticipated that the economic impact of this rulemaking would be minimal. The changes that this rule proposes are intended to streamline environmental review.

These provisions are optional and would not have a significant cost impact for MPOs, States, or local providers of public transportation. It is anticipated that these optional provisions, if implemented, could potentially result in cost savings for the States, MPOs, and local providers of public transportation by minimizing the potential duplication of planning and environmental processes and by improved project delivery timeframes.

The Agencies do not have specific data to assess the monetary value of the benefits to the proposed changes to the planning process made by this rule because such data does not exist and would be difficult to develop. There are several other benefits of the proposal including the potential to enable agencies to be more effective players in the transportation decisionmaking process through its focus on building interagency relationships. By encouraging resource and regulatory agencies to get involved in the early stages of planning, agencies have an opportunity to help shape transportation projects.

Regulatory Flexibility Act

In compliance with the Regulatory Flexibility Act (Pub. L. 96–354, 5 U.S.C. 601–612), the Agencies have evaluated the effects of this proposed rule on small entities and anticipate that this action would not have a significant economic impact on a substantial number of small entities.

States and metropolitan planning organizations are not included in the definition of a small entity set forth in 5 U.S.C. 601. Small governmental jurisdictions are limited to representations of populations of less than 50,000. The MPOs, by definition, represent urbanized areas having a minimum population of 50,000. Because the regulations are primarily intended for States and MPOs, the Agencies have determined that the action would not have a significant economic impact on a substantial number of small entities.

Unfunded Mandates Reform Act of 1995

This proposed rule would not impose unfunded mandates as defined by the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 109 Stat. 48). This proposed rule will not result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $148.1 million or more in any one year (2 U.S.C. 1532). Further, in compliance with the Unfunded Mandates Reform Act of 1995, the Agencies will evaluate any regulatory action that might be proposed in subsequent stages of the proceeding to assess the effects on State, local, and tribal governments and the private sector. Additionally, the definition of ''Federal Mandate'' in the Unfunded Mandates Reform Act excludes financial assistance of the type in which State, local, or tribal governments have authority to adjust their participation in accordance with changes made in the program by the Federal Government. The Federal-aid highway program permits this type of flexibility.

Executive Order 13132 (Federalism Assessment)

Executive Order 13132 requires agencies to ensure meaningful and timely input by State and local officials in the development of regulatory policies that may have a substantial, direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. The Agencies have analyzed this proposed action in accordance with the principles and criteria contained in Executive Order 13132 and determined that it would not have sufficient federalism implications to warrant the preparation of a federalism assessment. The Agencies have also determined that this proposed action would not preempt any State law or State regulation or affect the States' ability to discharge traditional State governmental functions. We invite State and local governments with an interest in this rulemaking to comment on the effect that adoption of specific proposals may have on State or local governments.

Executive Order 13175 (Tribal Consultation)

States and MPOs are required through the transportation planning process to develop plans in consultation with Indian Tribal government. The proposed action would not substantively change how Indian Tribal governments are involved in the transportation planning process. The Agencies have analyzed this action under Executive Order 13175, and believe that it would not have substantial direct effects on one or more Indian Tribes; would not impose substantial direct compliance costs on Indian Tribal governments; and would not preempt Tribal law. Therefore, a Tribal summary impact statement is not required.

Executive Order 13211 (Energy Effects)

The Agencies have analyzed this action under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. The Agencies have determined that this action is not a significant energy action under that order because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Therefore, a Statement of Energy Effects under Executive Order 13211 is not required.

Executive Order 12372 (Intergovernmental Review)

The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program. Accordingly, the Agencies solicit comments on this issue.

Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501, *et seq.*), Federal agencies must obtain approval from the Office of Management and Budget for each collection of information they conduct, sponsor, or require through regulations. The Agencies have determined that this proposal does not contain collection of information requirements for the purposes of the PRA.

Executive Order 12988 (Civil Justice Reform)

This action meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

Executive Order 12898 (Environmental Justice)

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and DOT Order 5610.2(a), 91 FR 27534, May 10, 2012 (available online at *www.fhwa.dot.gov/enviornment/environmental_justice/ej_at_dot/order_56102a/index.cfm*), require DOT agencies to achieve environmental justice (EJ) as part of their mission by

identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects, of their programs, policies, and activities on minority populations and low-income populations in the United States. The DOT Order requires DOT agencies to address compliance with the Executive Order and the DOT Order in all rulemaking activities. In addition, both Agencies have issued additional documents relating to administration of the Executive Order and the DOT Order. On June 14, 2012, the FHWA issued an update to its EJ order, FHWA Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low Income Populations* (available online at *www.fhwa.dot.gov/legsregs/directives/orders/664023a.htm*). The FTA also issued an update to its EJ policy, *FTA Policy Guidance for Federal Transit Recipients,* 77 FR 42077, July 17, 2012 (available online at *www.fta.dot.gov/legislation_law/12349_14740.html*).

The Agencies have evaluated this proposed rule under the Executive Order, the DOT Order, the FHWA Order, and the FTA Circular. The EJ principles, in the context of planning, should be considered when the planning process is being implemented at the State and local level. As part of their stewardship and oversight of the federally aided transportation planning process of the States, transit agencies, and MPOs, FHWA, and FTA encourage these entities to incorporate EJ principles into the statewide and metropolitan planning processes and documents as appropriate consistent with the applicable Orders and the FTA Circular. When the Agencies make a future funding or other approval decision on a project basis, they consider EJ at that point.

Nothing inherent in these proposed regulations would disproportionately impact minority or low income populations. The proposed regulations would establish procedures and other requirements to guide future State and local decisionmaking on programs and projects. Neither the regulations nor 23 U.S.C. 134 and 135 dictate the outcome of those decisions. The Agencies have determined that these proposed regulations, if finalized as proposed, would not cause disproportionately high and adverse human health and environmental effects on minority or low income populations.

Executive Order 13045 (Protection of Children)

The Agencies have analyzed this action under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. The Agencies certify that this action would not concern an environmental risk to health or safety that may disproportionately affect children.

Executive Order 12630 (Taking of Private Property)

The Agencies do not anticipate that this action would affect a taking of private property or otherwise have taking implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

National Environmental Policy Act

Agencies are required to adopt implementing procedures for NEPA that establish specific criteria for, and identification of, three classes of actions: Those that normally require preparation of an EIS; those that normally require preparation of an EA; and those that are categorically excluded from further NEPA review (40 CFR 1507.3(b)). This proposed action qualifies for categorical exclusions under 23 CFR 771.117(c)(20) (promulgation of rules, regulations, and directives) and 771.117(c)(1) (activities that do not lead directly to construction) for FHWA, and 23 CFR 771.118(c)(4) (planning and administrative activities which do not involve or lead directly to construction) for FTA. The Agencies have evaluated whether the proposed action would involve unusual circumstances or extraordinary circumstances and have determined that this proposed action would not involve such circumstances.

The proposed rule provides the policies and requirements for statewide and metropolitan transportation plans and transportation improvement programs. The proposed rule follows closely the requirements in 23 U.S.C. 134 and 135 and 49 U.S.C. 5303 and 5304. In addition, 23 U.S.C. 134(q), 135(k), and 168(f)(1), and 49 U.S.C. 5303(q) and 5304(j) establish that NEPA does not apply to decisions by the Secretary concerning a metropolitan or statewide transportation plan or transportation improvement programs under those sections.

Regulation Identification Number

An RIN is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross reference this action with the Unified Agenda.

List of Subjects

23 CFR Part 450

Grant programs—transportation, Highway and roads, Mass transportation, Reporting and recordkeeping requirements.

23 CFR Part 771

Environmental protection, Grant programs—transportation, Highways and roads, Historic preservation, Public lands, Recreation areas, Reporting and recordkeeping requirements.

49 CFR Part 613

Grant programs—transportation, Highways and roads, Mass transportation.

49 CFR Part 622

Environmental impact statements, Grant programs—transportation, Public transit, Recreation areas, Reporting and recordkeeping requirements.

In consideration of the foregoing, the FHWA and FTA propose to amend 23 CFR parts 450 and 771, and 49 CFR parts 613 and 622, as set forth below:

Title 23

PART 450—PLANNING ASSISTANCE AND STANDARDS

■ 1. The authority citation for part 450 is revised to read as follows:

Authority: 23 U.S.C. 134, 135, and 168; 42 U.S.C. 7410 et seq.; 49 U.S.C. 5303 and 5304; 49 CFR 1.85 and 1.90.

§ 450.212 [Amended]

■ 2. Amend § 450.212 by adding paragraphs (d), (e), and (f) to read as follows:

§ 450.212 Transportation planning studies and project development.

* * * * *

(d) In addition to the process for incorporation directly or by reference outlined in paragraph (b) of this section, a Federal lead agency may follow the process in this paragraph to adopt and use planning products in support of a determination that a project qualifies for a categorical exclusion, in the preparation of an environmental assessment or environmental impact statement, or in the development of other documents prepared under NEPA. The Federal lead agency may incorporate the planning product directly into a document prepared under NEPA. The Federal lead agency

may adopt a planning product in its entirety or may select portions for adoption. The determination with respect to adoption of a planning product may be made at the time the Federal lead agency and other joint lead agencies decide the appropriate scope of the class of action, as defined in 23 CFR 771.115, or later during the preparation of materials for compliance with NEPA requirements. To adopt and use planning products pursuant to this paragraph:

(1) The planning product must be a detailed decision, analysis, study, or other documented information that:

(i) Is the result of an evaluation or decisionmaking process carried out during transportation planning, including a detailed corridor plan or a transportation plan developed under 23 U.S.C. 134 or 135 (or 49 U.S.C. 5303–5304) that fully analyzes impacts on mobility, adjacent communities, and the environment;

(ii) Is intended to be carried into the transportation project development process; and

(iii) Has been approved by the State, all local and tribal governments where the project is located, and by any relevant metropolitan planning organization. Approved means that the preparer of the planning product provided the planning product to these entities with at least 60 days for review and approval, unless an extension is needed for good cause, and the entities:

(A) Explicitly approved the planning product; or

(B) Implicitly approved the planning product by remaining silent, failing to object, or failing to explicitly disapprove the planning product within the specified time.

(2) The planning product must be either a planning decision or a planning analysis.

(i) Planning decisions that may be adopted under this process include:

(A) Whether tolling, private financial assistance, or other special financial measures are necessary to implement the project;

(B) A decision with respect to modal choice, including a decision to implement corridor or subarea study recommendations to advance different modal solutions as separate projects with independent utility;

(C) A basic description of the environmental setting;

(D) A decision with respect to methodologies for analysis; and

(E) An identification of programmatic level mitigation for potential impacts that the Federal lead agency, in consultation with Federal, State, local, and tribal resource agencies, determines are most effectively addressed at a regional or national program level, including: System-level measures to avoid, minimize, or mitigate impacts of proposed transportation investments on environmental resources, including regional ecosystem and water resources; and potential mitigation activities, locations, and investments.

(ii) Planning analyses that may be adopted under this process include studies with respect to:

(A) Travel demands;

(B) Regional development and growth;

(C) Local land use, growth management, and development;

(D) Population and employment;

(E) Natural and built environmental conditions;

(F) Environmental resources and environmentally sensitive areas;

(G) Potential environmental effects, including the identification of resources of concern and potential cumulative effects on those resources, identified as a result of a statewide or regional cumulative effects assessment; and

(H) Mitigation needs for a proposed action, or for programmatic level mitigation, for potential effects that the Federal lead agency determines are most effectively addressed at a regional or national program level.

(3) The preparer of the planning product must provide Federal, State, and local agencies that may have interest in the proposed project, tribal governments that may have interest in the proposed project, and the general public with an opportunity to participate in the planning process leading to the development of the planning product. This opportunity must be offered through a notice, by publication or other means, during the planning process that identifies the planning products that the planning process would produce and that would be relied on during any subsequent NEPA review of the project.

(4) Prior to its determination that a project qualifies for a categorical exclusion, during the environmental impact statement, or environmental assessment process, or prior to the completion of other documents prepared under NEPA, the Federal lead agency must:

(i) Determine that all of the following conditions are met:

(A) The planning product was developed through a planning process conducted pursuant to applicable Federal law.

(B) The planning product was developed by engaging in active consultation with appropriate Federal and State resource agencies and Indian tribes. The determination must identify those agencies that participated in the development of the planning product if the planning product does not specifically mention the agencies.

(C) The planning process included broad, multidisciplinary consideration of systems-level or corridor-wide transportation needs and potential effects, including effects on the human and natural environment.

(D) There is no significant new information or new circumstance that has a reasonable likelihood of affecting the continued validity or appropriateness of the planning product.

(E) The planning product has a rational basis and is based on reliable and reasonably current data and reasonable and scientifically acceptable methodologies.

(F) The planning product is documented in sufficient detail to support the decision or the results of the analysis and to meet requirements for use of the information in the categorical exclusion determination, environmental assessment, or environmental impact statement process, or other documents prepared under NEPA.

(G) The planning product is appropriate for adoption and use in the categorical exclusion determination, environmental assessment, or environmental impact statement process, or other documents prepared under NEPA for the project.

(H) The planning product was approved, as established in paragraph (d)(1)(iii) of this section, not earlier than 5 years prior to the date on which the information is adopted.

(ii) Obtain the concurrence on this determination from other participating agencies with relevant expertise and, when appropriate, from project sponsors, and make the documentation relating to the planning product available for their review. Concurrence under this subsection means that the Federal lead agency provided the proposed determination and the documentation relating to the planning product to, and received acknowledgment of receipt by, each of these entities with at least 60 days for review and concurrence, unless an extension was needed for good cause, and each of these entities:

(A) Explicitly concurred with the determination; or

(B) Implicitly concurred with the determination by remaining silent, failing to object, or failing to explicitly nonconcur with the determination within the specified time.

(iii) Make this determination and the documentation relating to the planning product available for public comment,

and consider the comments received in its decision whether to adopt and use the planning product.

(e) Any other Federal agency may rely upon and use any planning product adopted by a Federal lead agency through this process in carrying out reviews of the project.

(f) This section shall not be construed to:

(1) Make NEPA applicable to the transportation planning process conducted under 23 U.S.C. and chapter 53 of 49 U.S.C.

(2) Subject transportation plans and programs to NEPA if a categorical exclusion determination, environmental assessment, or environmental impact statement process, or preparation of a document under NEPA is initiated as a part of, or concurrently with, transportation planning activities.

(3) Affect the use of planning products in the categorical exclusion determination, environmental assessment, or environmental impact statement process, or a document prepared under NEPA pursuant to other authorities under any other provision of law or to restrict the initiation of their development during the transportation planning process.

§ 450.318 [Amended]

■ 3. Amend § 450.318 by adding paragraph (f), (g), and (h) to read as follows:

§ 450.318 Transportation planning studies and project development.

* * * * *

(f) In addition to the process for incorporation directly or by reference outlined in paragraph (b) of this section, a Federal lead agency may follow the process in this paragraph to adopt and use planning products in support of a determination that a project qualifies for a categorical exclusion, in the preparation of an environmental assessment or environmental impact statement, or in the development of other documents prepared under NEPA. The Federal lead agency may incorporate the planning product directly into a document prepared under NEPA. The Federal lead agency may adopt a planning product in its entirety or may select portions for adoption. The determination with respect to adoption of a planning product may be made at the time the Federal lead agency and other joint lead agencies decide the appropriate scope of the class of action, as defined in 23 CFR 771.115, or later during the preparation of materials for compliance with NEPA requirements. To adopt and use planning products pursuant to this paragraph:

(1) The planning product must be a detailed decision, analysis, study, or other documented information that:

(i) Is the result of an evaluation or decisionmaking process carried out during transportation planning, including a detailed corridor plan or a transportation plan developed under 23 U.S.C. 134 or 135 (or 49 U.S.C. 5303–5304) that fully analyzes impacts on mobility, adjacent communities, and the environment;

(ii) Is intended to be carried into the transportation project development process; and

(iii) Has been approved by the State, all local and tribal governments where the project is located, and by any relevant metropolitan planning organization. Approved means that the preparer of the planning product provided the planning product to these entities with at least 60 days for review and approval, unless an extension is needed for good cause, and the entities:

(A) Explicitly approved the planning product; or

(B) Implicitly approved the planning product by remaining silent, failing to object, or failing to explicitly disapprove the planning product within the specified time.

(2) The planning product must be either a planning decision or a planning analysis.

(i) Planning decisions that may be adopted under this process include:

(A) Whether tolling, private financial assistance, or other special financial measures are necessary to implement the project;

(B) A decision with respect to modal choice, including a decision to implement corridor or subarea study recommendations to advance different modal solutions as separate projects with independent utility;

(C) A basic description of the environmental setting;

(D) A decision with respect to methodologies for analysis; and

(E) An identification of programmatic level mitigation for potential impacts that the Federal lead agency, in consultation with Federal, State, local, and tribal resource agencies, determines are most effectively addressed at a regional or national program level, including: System-level measures to avoid, minimize, or mitigate impacts of proposed transportation investments on environmental resources, including regional ecosystem and water resources; and potential mitigation activities, locations, and investments.

(ii) Planning analyses that may be adopted under this process include studies with respect to:

(A) Travel demands;

(B) Regional development and growth;

(C) Local land use, growth management, and development;

(D) Population and employment;

(E) Natural and built environmental conditions;

(F) Environmental resources and environmentally sensitive areas;

(G) Potential environmental effects, including the identification of resources of concern and potential cumulative effects on those resources, identified as a result of a statewide or regional cumulative effects assessment; and

(H) Mitigation needs for a proposed action, or for programmatic level mitigation, for potential effects that the Federal lead agency determines are most effectively addressed at a regional or national program level.

(3) The preparer of the planning product must provide Federal, State, and local agencies that may have interest in the proposed project, tribal governments who may have interest in the proposed project, and the general public with an opportunity to participate in the planning process leading to the development of the planning product. This opportunity must be offered through a notice, by publication or other means, during the planning process that identifies the planning products that the planning process would produce and that would be relied on during any subsequent NEPA review of the project.

(4) Prior to its determination that a project qualifies for a categorical exclusion, during the environmental impact statement, or environmental assessment process, or prior to the completion of other documents prepared under NEPA, the Federal lead agency must:

(i) Determine that all of the following conditions are met:

(A) The planning product was developed through a planning process conducted pursuant to applicable Federal law.

(B) The planning product was developed by engaging in active consultation with appropriate Federal and State resource agencies and Indian tribes. The determination must identify those agencies that participated in the development of the planning product if the planning product does not specifically mention the agencies.

(C) The planning process included broad, multidisciplinary consideration of systems-level or corridor-wide transportation needs and potential

effects, including effects on the human and natural environment.

(D) There is no significant new information or new circumstance that has a reasonable likelihood of affecting the continued validity or appropriateness of the planning product.

(E) The planning product has a rational basis and is based on reliable and reasonably current data and reasonable and scientifically acceptable methodologies.

(F) The planning product is documented in sufficient detail to support the decision or the results of the analysis and to meet requirements for use of the information in the categorical exclusion determination, environmental assessment, or environmental impact statement process, or other documents prepared under NEPA.

(G) The planning product is appropriate for adoption and use in the categorical exclusion determination, environmental assessment, or environmental impact statement process, or other documents prepared under NEPA for the project.

(H) The planning product was approved, as established in paragraph (e)(1)(iii) of this section, not earlier than 5 years prior to the date on which the information is adopted.

(ii) Obtain the concurrence on this determination from other participating agencies with relevant expertise and, when appropriate, from project sponsors and make the documentation relating to the planning product available for their review. Concurrence under this subsection means that the Federal lead agency provided the proposed determination and the documentation relating to the planning product to, and received acknowledgment of receipt by, each of these entities with at least 60 days for review and concurrence, unless an extension was needed for good cause, and each of these entities:

(A) Explicitly concurred with the determination; or

(B) Implicitly concurred with the determination by remaining silent, failing to object, or failing to explicitly nonconcur with the determination within the specified time.

(iii) Make this determination and the documentation relating to the planning product available for public comment and consider the comments received in its decision whether to adopt and use the planning product.

(g) Any other Federal agency may rely upon and use any planning product adopted by a Federal lead agency through this process in carrying out reviews of the project.

(h) This section shall not be construed to:

(1) Make NEPA applicable to the transportation planning process conducted under 23 U.S.C. and chapter 53 of 49 U.S.C.

(2) Subject transportation plans and programs to NEPA if a categorical exclusion determination, environmental assessment, or environmental impact statement process, or preparation of a document under NEPA is initiated as a part of, or concurrently with, transportation planning activities.

(3) Affect the use of planning products in the categorical exclusion determination, environmental assessment, or environmental impact statement process, or a document prepared under NEPA pursuant to other authorities under any other provision of law or to restrict the initiation of their development during the transportation planning process.

PART 771—ENVIRONMENTAL IMPACT AND RELATED PROCEDURES

■ 4. The authority citation for part 771 is revised to read as follows:

Authority: 42 U.S.C. 4321 *et seq.;* 23 U.S.C. 106, 109, 128, 138, 139, 168, 315, 325, 326, and 327; 49 U.S.C. 303; 40 CFR Parts 1500–1508; 49 CFR 1.81, 1.85; Pub. L. 109–59, 119 Stat. 1144, sections 6002 and 6010; Pub. L. 112–141, 126 Stat. 405, sections 1315, 1316, 1317, and 1318.

§ 771.111 [Amended]

■ 5. Revise § 771.111(a)(2) to read as follows:

§ 771.111 Early coordination, public involvement, and project development.

* * * * *

(a) * * *

(2) The information and results produced by, or in support of, the transportation planning process may be incorporated into environmental review documents in accordance with 40 CFR 1502.21, and 23 CFR 450.212(b) or 450.318(b). In addition, planning products may be adopted and used in accordance with 23 CFR 450.212(d) or 450.318(f), which implement 23 U.S.C. 168.[3]

* * * * *

Title 49

PART 613—PLANNING ASSISTANCE AND STANDARDS

■ 6. The authority citation for part 613 is revised to read as follows:

Authority: 23 U.S.C. 134, 135, 168, and 217(g); 42 U.S.C. 3334, 4233, 4332, 7410 et seq.; 49 U.S.C. 5303–5306, 5323(k); and 49 CFR 1.85, 1.51(f), and 21.7(a).

PART 622—ENVIRONMENTAL IMPACT AND RELATED PROCEDURES

■ 7. The authority citation for part 622 is revised to read as follows:

Authority: 42 U.S.C. 4321 et seq.; 49 U.S.C. 303, 5301 and 5323; 23 U.S.C. 139, 168, and 326; Pub. L. 109–59, 119 Stat. 1144, sections 6002 and 6010; 40 CFR parts 1500–1508; 49 CFR 1.51; and Pub. L. 112–141, 126 Stat. 405, sections 1310, 1315, 1316 and 1317.

Issued in Washington, DC, on September 3, 2014, under authority delegated in 49 CFR 1.85 and 1.91.

Gregory G. Nadeau,

Acting Administrator, Federal Transit Administration.

Therese W. McMillan,

Acting Administrator, Federal Highway Administration.

[FR Doc. 2014–21439 Filed 9–9–14; 8:45 am]

BILLING CODE 4910–22–P

[3] On February 14, 2007, FHWA and FTA issued guidance on incorporating products of the planning process into NEPA documents as Appendix A of 23 CFR part 450. This guidance, titled ''Linking the Transportation Planning and NEPA Processes,'' is available on the FHWA Web site at *http://www.fhwa.dot.gov* or in hard copy upon request.

Notices

Federal Register

Vol. 79, No. 175

Wednesday, September 10, 2014

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Submission for OMB Review; Comment Request

September 3, 2014.

The Department of Agriculture has submitted the following information collection requirement(s) to OMB for review and clearance under the Paperwork Reduction Act of 1995, Public Law 104–13. Comments regarding (a) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) the accuracy of the agency's estimate of burden including the validity of the methodology and assumptions used; (c) ways to enhance the quality, utility and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques and other forms of information technology.

Comments regarding this information collection received by October 10, 2014 will be considered. Written comments should be addressed to: Desk Officer for Agriculture, Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), New Executive Office Building, 725 17th Street NW., Washington, DC 20503. Commentors are encouraged to submit their comments to OMB via email to: *OIRA_Submission@omb.eop.gov* or fax (202) 395–5806 and to Departmental Clearance Office, USDA, OCIO, Mail Stop 7602, Washington, DC 20250–7602. Copies of the submission(s) may be obtained by calling (202) 720–8681.

An agency may not conduct or sponsor a collection of information unless the collection of information displays a currently valid OMB control number and the agency informs potential persons who are to respond to the collection of information that such persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

Forest Service

Title: Interagency Generic Clearance for Federal Land Management Agencies Collaborative Visitor Feedback Surveys on Recreation and Transportation Related Programs and Systems

OMB Control Number: 0596–NEW

Summary of Collection: Section 1119 of Public Law 112–141, the Moving Ahead for Progress in the 21st Century Act (MAP–21) requires the Secretary of Transportation to implement transportation planning procedures for Federal lands and tribal transportation facilities that are consistent with the planning processes required under sections 134 and 135 of title 23[6]. The section also specifies the collection and reporting of data necessary to implement the Federal lands transportation program, the Federal lands access program, and the tribal transportation program in accordance with the Indian Self-Determination and Education Assistance Act. The Federal Land Management Agencies (FLMAs) include, but are not limited to: Forest Service, the Bureau of Land Management, U.S. Fish and Wildlife Service, National Park Service, U.S. Army Corps of Engineers, U.S. Geological Survey, Bureau of Reclamation and the Department of Transportation. FLMAs will collect information to help them improve transportation conditions, site- or area-specific services, programs, services, and recreation and resource management of FLMA lands.

Need And Use Of The Information: A combination of surveys, focus groups and interviews, are designed to collect information about visitors' perceptions, experiences and expectations, with respect to road and/or travel transportation conditions, services, and recreation opportunities at various FLMA locations and across areas that could include multiple locations managed by different FLMAs. This information is vital to establish and/or revise goals and objectives that will help improve transportation systems and recreation and resource management plans and to facilitate interagency coordination at area, state, regional, and/or national scales which will better meet the needs of the public and the resources under FLMA management.

Description of Respondents: Individuals or households.

Number of Respondents: 337,800.

Frequency of Responses: Reporting: On occasion.

Total Burden Hours: 97,470.

Charlene Parker,

Departmental Information Collection Clearance Officer.

[FR Doc. 2014–21559 Filed 9–9–14; 8:45 am]

BILLING CODE 3411–15–P

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

[Doc. No. AMS–LPS–13–0066]

Results of Soybean Request for Referendum

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Notice.

SUMMARY: The results of the Agricultural Marketing Service's (AMS) Request for Referendum indicate that too few soybean producers wanted a referendum on the Soybean Promotion and Research Order (Order) for one to be conducted. The Request for Referendum was conducted from May 5, 2014, through May 30, 2014, at the U.S. Department of Agriculture's (USDA) Farm Service Agency county offices. To trigger a referendum, 56,999 soybean producers needed to complete a valid Request for Referendum. The total number of soybean producers participating in the referendum was 355. The number of valid petitions received was 324.

FOR FURTHER INFORMATION CONTACT: James R. Brow, Research and Promotion Division, Livestock, Poultry, and Seed Program, AMS, USDA, Room 2610–S, STOP 0251, 1400 Independence Avenue SW., Washington, DC 20250–0251; Telephone 202/720–0633; Fax 202/720–1125; or email to *James.Brow@ams.usda.gov*.

SUPPLEMENTARY INFORMATION: Pursuant to the Soybean Promotion, Research, and Consumer Information Act (Act) (7 U.S.C. 6301 *et seq.*), every 5 years the Secretary of Agriculture (Secretary) gives soybean producers the opportunity to request a referendum on the Order. If the Secretary determines

that at least 10 percent of U.S. producers engaged in growing soybeans (not in excess of one-fifth of which may be producers in any one State) support the conduct of a referendum, the Secretary must conduct a referendum within 1 year of that determination. If these requirements are not met, a referendum is not conducted.

A notice of opportunity to Request a Soybean Referendum was published in the **Federal Register** (79 FR 12037) on March 4, 2014. To be eligible to participate in the Request for Referendum, producers or the producer entity that they are authorized to represent must provide supporting documentation showing that they or the producer entity they represent paid an assessment sometime during the representative period between January 1, 2012, and December 31, 2013. Based on USDA data, there are 569,998 soybean producers in the United States.

A total of 355 producers participated in the Request for Referendum. Only 324 valid requests for a referendum were completed by eligible soybean producers. This number does not meet the requisite number of 56,999. Therefore, based on the results, a referendum will not be conducted. In accordance with the provisions of the Act, soybean producers will be provided another opportunity to request a referendum in 5 years.

The following are the State-by-State results of the Request for Referendum:

State	Valid ballots
Alabama	0
Alaska	0
Arizona	0
Arkansas	0
California	0
Colorado	0
Connecticut	0
Delaware	3
Florida	0
Georgia	0
Hawaii	0
Idaho	0
Illinois	43
Indiana	48
Iowa	56
Kansas	6
Kentucky	2
Louisiana	0
Maine	0
Maryland	1
Massachusetts	0
Michigan	10
Minnesota	25
Mississippi	0
Missouri	9
Montana	0
Nebraska	2
Nevada	0
New Hampshire	0
New Jersey	0
New Mexico	0
New York	1
North Carolina	5
North Dakota	3
Ohio	73
Oklahoma	2
Oregon	0
Pennsylvania	2
Rhode Island	0
South Carolina	0
South Dakota	17
Tennessee	0
Texas	2
Utah	0
Vermont	0
Virginia	1
Washington	0
West Virginia	7
Wisconsin	6
Wyoming	0

Authority: 7 U.S.C. 6301–6311.

Dated: September 4, 2014.

Rex A. Barnes,

Associate Administrator.

[FR Doc. 2014–21509 Filed 9–9–14; 8:45 am]

BILLING CODE P

DEPARTMENT OF AGRICULTURE

Food Safety and Inspection Service

[Docket No. FSIS–2014–0022]

Discontinuing Export Certificates for Food Products That Contain Egg Products as an Ingredient

AGENCY: Food Safety and Inspection Service, USDA.

ACTION: Notice.

SUMMARY: The Food Safety and Inspection Service (FSIS) is announcing that it will no longer issue export certificates for Food and Drug Administration (FDA)-regulated prepared or manufactured food products that contain egg products as an ingredient because the Agricultural Marketing Service has instituted a program to provide this service. FSIS will discontinue issuing certificates on November 10, 2014.

ADDRESSES: FSIS invites interested persons to submit comments on this notice. Comments may be submitted by one of the following methods:

- Federal eRulemaking Portal: This Web site provides the ability to type short comments directly into the comment field on this Web page or attach a file for lengthier comments. Go to *http://www.regulations.gov.* Follow the on-line instructions at that site for submitting comments.
- Mail, including CD–ROMs, etc.: Send to Docket Clerk, U.S. Department of Agriculture, Food Safety and Inspection Service, Docket Clerk, Patriots Plaza 3, 1400 Independence Avenue SW., Mailstop 3782, Room 8–163A, Washington, DC 20250–3700.
- Hand- or courier-delivered submittals: Deliver to Patriots Plaza 3, 355 E Street SW., Room 8–163A, Washington, DC 20250–3700.

Instructions: All items submitted by mail or electronic mail must include the Agency name and docket number FSIS–2014–0022. Comments received in response to this docket will be made available for public inspection and posted without change, including any personal information, to *http://www.regulations.gov.*

Docket: For access to background documents or comments received, go to the FSIS Docket Room at Patriots Plaza 3, 355 E Street SW., Room 8–163A, Washington, DC 20250–3700, between 8:00 a.m. and 4:30 p.m., Monday through Friday.

DATES: Submit comments on or before November 10, 2014.

FOR FURTHER INFORMATION CONTACT: Rita Kishore, Deputy Director, Import/Export Coordination and Policy Development Staff, Office of Policy and Program Development, Food Safety and Inspection Service, U.S. Department of Agriculture; Phone: (202) 720–0082; Fax: (202) 720–7990.

SUPPLEMENTARY INFORMATION:

Background

On April 3, 2013, the U.S. Department of Agriculture's (USDA) Agricultural Marketing Service (AMS) announced the establishment of the Processed Egg and Egg Products Export Program. Established under the Agricultural Marketing Act of 1946 (7 U.S.C. 1621 *et seq.*), the new program [1] facilitates the export of FDA-regulated prepared or manufactured food products containing eggs or egg products. Under the new program, AMS certifies a wide range of foods, including cooked omelets, frozen egg patties, crepes, hard boiled eggs, mayonnaise, and foods containing egg extracts. AMS performs onsite verification of public health certification statements and issues export certificates on a fee-for-service basis as part of the program.

While FDA regulates the safe production, sanitary processing, and labeling of food products containing egg products (Federal Food, Drug, and Cosmetic Act) (21 U.S.C. 301–399(d)), FSIS has been issuing export certificates of wholesomeness for prepared or manufactured food products that

[1] USDA Announces Program to Facilitate the Export of Further Processed Eggs and Egg Products.

contain egg products as an ingredient since it assumed responsibility for conducting the Federal egg products inspection program from AMS on May 28, 1995.[2] However, because AMS has now instituted an export certification program of its own, to avoid overlap and confusion, FSIS will discontinue issuing export certificates for prepared or manufactured food products containing egg products. FSIS will stop certifying these products for export on November 10, 2014.

FSIS will also update the FSIS Export Library on November 10, 2014 to show this change in the export certification process. Exporters should contact AMS for assistance. Additional information can be found on AMS's Web site at *http://www.ams.usda.gov/AMSv1.0/PYEggExport* and *http://www.ams.usda.gov/AMSv1.0/PYEggExportProcessedEgg.*

Additional Public Notification

FSIS will announce this notice online through the FSIS Web page located at *http://www.fsis.usda.gov/wps/portal/fsis/topics/regulations/federal-register.*

FSIS will also make copies of this **Federal Register** publication available through the FSIS Constituent Update, which is used to provide information regarding FSIS policies, procedures, regulations, **Federal Register** notices, FSIS public meetings, and other types of information that could affect or would be of interest to constituents and stakeholders. The Update is communicated via Listserv, a free electronic mail subscription service for industry, trade groups, consumer interest groups, health professionals, and other individuals who have asked to be included. The Update is also available on the FSIS Web page. In addition, FSIS offers an electronic mail subscription service which provides automatic and customized access to selected food safety news and information. This service is available at *http://www.fsis.usda.gov/wps/portal/fsis/programs-and-services/email-subscription-service.* Options range from recalls to export information to regulations, directives and notices. Customers can add or delete subscriptions themselves, and have the option to password protect their accounts.

USDA Non-Discrimination Statement

No agency, officer, or employee of the USDA shall, on the grounds of race, color, national origin, religion, sex, gender identity, sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, or political beliefs, exclude from participation in, deny the benefits of, or subject to discrimination any person in the United States under any program or activity conducted by the USDA.

How To File a Complaint of Discrimination

To file a complaint of discrimination, complete the USDA Program Discrimination Complaint Form, which may be accessed online at *http://www.ocio.usda.gov/sites/default/files/docs/2012/Complain_combined_6_8_12.pdf,* or write a letter signed by you or your authorized representative.

Send your completed complaint form or letter to USDA by mail, fax, or email:

Mail

U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue SW., Washington, DC 20250–9410.

Fax

(202) 690–7442

Email

program.intake@usda.gov

Persons with disabilities who require alternative means for communication (Braille, large print, audiotape, etc.), should contact USDA's TARGET Center at (202) 720–2600 (voice and TDD).

Done at Washington, DC, on: September 5, 2014.

Alfred V. Almanza,

Administrator.

[FR Doc. 2014–21554 Filed 9–9–14; 8:45 am]

BILLING CODE 3410–DM–P

[2] Federal Crop Insurance Reform and Department of Agriculture Reorganization Act of 1994, Public Law 103–354, Oct. 13, 1994, 108 Stat. 3178.

DEPARTMENT OF AGRICULTURE

Food Safety and Inspection Service

[Docket No. FSIS–2014–0015]

Codex Alimentarius Commission: Meeting of the Codex Committee on Nutrition and Foods for Special Dietary Uses

AGENCY: Office of the Under Secretary for Food Safety, USDA.

ACTION: Notice of public meeting and request for comments.

SUMMARY: The Office of the Under Secretary for Food Safety, U.S. Department of Agriculture (USDA), and the Food and Drug Administration (FDA), Office of Nutrition, Labeling, and Dietary Supplements are sponsoring a public meeting on October 28, 2014. The objective of the public meeting is to provide information and receive public comments on agenda items and draft United States (U.S.) positions to be discussed at the 36th Session of the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU) of the Codex Alimentarius Commission (CODEX), taking place in Bali, Indonesia November 24–28, 2014. The Under Secretary for Food Safety and the FDA recognize the importance of providing interested parties the opportunity to obtain background information on the 36th Session of the CCNFSDU and to address items on the agenda.

DATES: The public meeting is scheduled for October 28, 2014 from 1:00–4:00 p.m.

ADDRESSES: The public meeting will take place at the Harvey Wiley Building, United States Food and Drug Administration, CFSAN, 5100 Paint Branch Parkway, Rooms (1A–001 & 1A002), College Park, MD 20740.

Documents related to the 36th Session of the CCNFSDU will be accessible via the World Wide Web at the following address: *http://www.codexalimentarius.org/meetings-reports/en/.*

Paula Trumbo, U.S. Delegate to the 36th Session of the CCNFSDU, invites U.S. interested parties to submit their comments electronically to the following email address: *CCNFSDU@fda.hhs.gov.*

*Pre-Registration:*To pre-register for this meeting, please email the information listed below to the following email address: *CCNFSDU@fda.hhs.gov.*

- Your name
- Organization
- Mailing address
- Phone number
- Email address

Call in Number: If you wish to participate in the public meeting for the 36th Session of the CCNFSDU by conference call, please use call in number and participant code listed below:

Call in Number: 1–866–844–9904.

The participant code will be listed on the Web link below: *http://www.fsis.usda.gov/wps/portal/fsis/topics/international-affairs/us-codex-alimentarius/public-meetings.*

For Further Information About the 36th Session of the CCNFSDU Contact: Paula Trumbo, Nutrition Programs, Office of Nutrition, Labeling and Dietary Supplements, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, 5100 Paint Branch Parkway, HFS–830, College Park, MD

20740, Phone: (240) 402–2579, Fax: (301) 436–1191, Email: *Paula.Trumbo@fda.hhs.gov.*

For Further Information About the Public Meeting Contact: Doreen Chen-Moulec, U.S. Codex Office, 1400 Independence Ave. SW., Room 4861, Washington, DC 20250, Phone: (202) 205–7760, Fax: (202) 720–3157, Email: *Doreen.Chen-Moulec@fsis.usda.gov.*

SUPPLEMENTARY INFORMATION:

Background

Codex was established in 1963 by two United Nations organizations, the Food and Agriculture Organization and the World Health Organization. Through adoption of food standards, codes of practice, and other guidelines developed by its committees, and by promoting their implementation by governments,

The CCNFSDU is responsible for:

(a) Studying specific nutritional problems assigned to it by the Commission and advising the Commission on general nutrition issues;

(b) Drafting general provisions, as appropriate, concerning the nutritional aspects of all foods

(c) Developing standards, guidelines or related texts for foods for special dietary uses, in cooperation with other committees where necessary

(d) Considering, amending if necessary, and endorsing provisions on nutritional aspects proposed for inclusion Codex standards, guidelines and related texts

Issues To Be Discussed at the Public Meeting

The following items on the Agenda for the 36th Session of the CCNFSDU will be discussed during the public meeting:

- Proposed Draft Revision of the Codex General Principles for the Addition of Essential Nutrients to Foods
- Proposal to review the Codex Standard for Follow-up Formula
- Proposed Draft Additional or Revised Nutrient Reference Values for Labelling Purposes in the Codex Guidelines on Nutrition Labelling (values other than protein)
- Proposed Draft Amendment to the Standard for Processing Cereal Based Foods for Infants and Young Children to include a New Part B for Underweight Older infants and Young Children
- Potential NRV for Potassium in relation to the risk of NCD
- Proposed Draft Revision of the List of Food Additives
- Discussion Paper on Biofortification

Each issue listed will be fully described in documents distributed, or to be distributed, by the Secretariat prior to the Meeting. Members of the public may access or request copies of these documents (see **ADDRESSES**).

Additional Public Notification

FSIS will announce the public meeting on-line through the FSIS Web page located at *http://www.fsis.usda.gov/wps/portal/fsis/topics/regulations/federal-register.*

FSIS also will make copies of this **Federal Register** publication available through the FSIS Constituent Update, which provides information on FSIS policies, procedures, regulations, **Federal Register** notices, FSIS public meetings, recalls, and other types of information that could affect or would be of interest to constituents and stakeholders. The Update is communicated via Listserv, a free electronic mail subscription service for industry, trade and farm groups, consumer interest groups, allied health professionals, and other individuals who have asked to be included. The Update is available on the FSIS Web page. Through the Listserv and Web page, FSIS is able to provide information to a much broader and more diverse audience. In addition, FSIS offers an email subscription service which provides automatic and customized access to selected food safety news and information. This service is available at *http://www.fsis.usda.gov/wps/portal/fsis/programs-and-services/email-subscription-service.* Options range from recalls to export information to regulations, directives and notices. Customers can add or delete subscriptions themselves, and have the option to password protect their account.

USDA Nondiscrimination Statement

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.)

Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's Target Center at 202–720–2600 (voice and TTY).

To file a written complaint of discrimination, write USDA, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue SW., Washington, DC 20250–9410 or call 202–720–5964 (voice and TTY). USDA is an equal opportunity provider and employer.

Done at Washington, DC, on: September 5, 2014.

Mary Frances Lowe,

U.S. Codex Manager.

[FR Doc. 2014–21551 Filed 9–9–14; 8:45 am]

BILLING CODE 3410–DM–P

DEPARTMENT OF AGRICULTURE

Forest Service

White Pine-Nye Resource Advisory Committee

AGENCY: Forest Service, USDA.

ACTION: Notice of meetings.

SUMMARY: The White Pine-Nye Resource Advisory Committee (RAC) will meet in Round Mountain, Nevada. The RAC is authorized under the Secure Rural Schools and Community Self-Determination Act (the Act) (Pub. L. 110–343) and operates in compliance with the Federal Advisory Committee Act of 1972 (5 U.S.C. App. 2). The purpose of the RAC is to improve collaborative relationships and to provide advice and recommendations to the Forest Service concerning projects and funding consistent with the Title II of the Act. The meetings are open to the public. Additional information concerning the RAC, including the agenda, can be found by visiting the RAC's Web site at: *https://fsplaces.fs.fed.us/fsfiles/unit/wo/secure_rural_schools.ns.*

DATES: The meetings will be held at 10:00 a.m. on the following dates:

- September 25, 2014
- September 29, 2014

All RAC meetings are subject to cancellation. For status of meeting prior to attendance, please contact the person listed under **FOR FURTHER INFORMATION CONTACT**.

ADDRESSES: The meetings will be held at the Round Mountain Public Library, 73 Hadley Circle, Round Mountain, Nevada.

Written comments may be submitted as described under **SUPPLEMENTARY INFORMATION**. All comments, including names and addresses when provided, are placed in the record and are available for public inspection and copying. The public may inspect comments received at Tonopah Ranger District Office. Please call ahead to facilitate entry into the building.

FOR FURTHER INFORMATION CONTACT: Linda Bernardi, RAC Coordinator, by phone at 775–482–6286 or via email at *lebernardi@fs.fed.us.*

Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8:00 a.m. and 8:00 p.m., Eastern Standard Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The purpose of the meetings is to discuss Sagehen Spring Restoration Project and discuss recruitment needs for additional committee members. The agenda will include time for people to make oral statements of three minutes or less. Individuals wishing to make an oral statement should request in writing by September 19, 2014 to be scheduled on the agenda. Anyone who would like to bring related matters to the attention of the RAC may file written statements with the committee staff before or after the meeting. Written comments and requests for time for oral comments must be sent to Linda Bernardi, RAC Coordinator, Tonopah Ranger District, P.O. Box 3940, Tonopah, Nevada 89049; by email to *lebernardi@fs.fed.us,* or via facsimile to 775–482–3053.

Meeting Accommodations: If you are a person requiring reasonable accommodation, please make requests in advance for sign language interpreting, assistive listening devices or other reasonable accommodation for access to the facility or proceedings by contacting the person listed in the section titled **FOR FURTHER INFORMATION CONTACT**. All reasonable accommodation requests are managed on a case by case basis.

Dated: September 3, 2014.

William A. Dunkelberger,

Forest Supervisor.

[FR Doc. 2014–21538 Filed 9–9–14; 8:45 am]

BILLING CODE 3411–15–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[Order No. 1947]

Reorganization and Expansion of Foreign-Trade Zone 134 under Alternative Site Framework; Chattanooga, Tennessee

Pursuant to its authority under the Foreign-Trade Zones Act of June 18, 1934, as amended (19 U.S.C. 81a–81u), the Foreign-Trade Zones Board (the Board) adopts the following Order:

Whereas, the Board adopted the alternative site framework (ASF) (15 CFR Sec. 400.2(c)) as an option for the establishment or reorganization of zones;

Whereas, the Chattanooga Chamber Foundation, grantee of Foreign-Trade Zone 134, submitted an application to the Board (FTZ Docket B–30–2014, docketed 03–26–2014) for authority to reorganize and expand under the ASF with a service area consisting of the Counties of Hamilton, Marion, Grundy, Warren, Sequatchie, Bledsoe, Rhea, Meigs, Bradley, Polk and McMinn, within and adjacent to the Chattanooga Customs and Border Protection port of entry, to remove temporary Site 15, and to categorize FTZ 134's existing Sites 1, 2, 3, 9, 10 and 11 as magnet sites and existing Sites 13, 14 and 16 as usage-driven sites.

Whereas, notice inviting public comment was given in the **Federal Register** (79 FR 18259–18260, 04–01–2014) and the application has been processed pursuant to the FTZ Act and the Board's regulations; and,

Whereas, the Board adopts the findings and recommendation of the examiner's report, and finds that the requirements of the FTZ Act and the Board's regulations are satisfied;

Now, therefore, the Board hereby orders:

The application to reorganize and expand FTZ 134 under the ASF is approved, subject to the FTZ Act and the Board's regulations, including Section 400.13, to the Board's standard 2,000-acre activation limit for the zone, to a five-year ASF sunset provision for magnet sites that would terminate authority for Sites 1, 2, 9, 10 and 11 if not activated by August 31, 2019, and to a three-year ASF sunset provision for usage-driven sites that would terminate authority for Sites 13, 14 and 16 if no foreign-status merchandise is admitted for a *bona fide* customs purpose by August 31, 2017.

Signed at Washington, DC, this 29th day of August 2014.

Paul Piquado,

Assistant Secretary of Commerce for Enforcement and Compliance, Alternate Chairman, Foreign-Trade Zones Board.

[FR Doc. 2014–21591 Filed 9–9–14; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[Order No. 1949]

Expansion of Subzone 38A BMW Manufacturing Company, LLC; Greer, South Carolina

Pursuant to its authority under the Foreign-Trade Zones Act of June 18, 1934, as amended (19 U.S.C. 81a–81u), the Foreign-Trade Zones Board (the Board) adopts the following Order:

Whereas, the South Carolina State Ports Authority, grantee of Foreign-Trade Zone 38, has made application to the Board to expand Subzone 38A at the facilities of BMW Manufacturing Company, LLC, to include temporary Site 8 located in Greer, South Carolina, on a permanent basis (FTZ Docket B–38–2014, docketed 05–14–2014);

Whereas, notice inviting public comment has been given in the **Federal Register** (79 FR 29167, 05–21–2014) and the application has been processed pursuant to the FTZ Act and the Board's regulations; and,

Whereas, the Board adopts the findings and recommendations of the examiner's memorandum, and finds that the requirements of the FTZ Act and the Board's regulations are satisfied;

Now, therefore, the Board hereby orders;

The application to expand Subzone 38A is approved, subject to the FTZ Act and the Board's regulations, including Section 400.13.

Signed at Washington, DC, this 29th day of August 2014.

Paul Piquado,

Assistant Secretary of Commerce for Enforcement and Compliance, Alternate Chairman, Foreign-Trade Zones Board.

[FR Doc. 2014–21589 Filed 9–9–14; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[C–533–858, C–489–817]

Certain Oil Country Tubular Goods From India and the Republic of Turkey: Countervailing Duty Orders and Amended Affirmative Final Countervailing Duty Determination for India

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: Based on the amended affirmative final determination with respect to India and the affirmative final determination with respect to the Republic of Turkey (''Turkey'') by the Department of Commerce (the ''Department'') and the International Trade Commission (''ITC''), the Department is issuing countervailing duty orders on certain oil country tubular goods (''OCTG'') from India and Turkey. The Department is amending its final determination with respect to India to correct certain ministerial errors as explained below.

DATES: *Effective Date:* September 10, 2014.

FOR FURTHER INFORMATION CONTACT:

Turkey: Shane Subler or Jennifer Meek, AD/CVD Operations, Office I, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482–0189 and (202) 482–2778, respectively.

India: Myrna Lobo, Elfi Blum or Lingjun Wang, AD/CVD Operations, Office VII, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482–2371, (202) 482–0197, and (202) 482–2316, respectively.

SUPPLEMENTARY INFORMATION:

Background

On July 18, 2014, the Department published its final determinations in the countervailing duty investigations of OCTG from India and Turkey.[1] On September 2, 2014, the ITC notified the Department of its final determination pursuant to section 705(b)(1)(A)(i) of the Tariff Act of 1930, as amended (''the Act''), that an industry in the United States is materially injured by reason of subsidized imports of subject merchandise from India and Turkey.[2] The ITC also determined that critical circumstances do not exist.[3]

Scope of the Orders

The merchandise covered by the orders is certain oil country tubular goods (''OCTG''), which are hollow steel products of circular cross-section, including oil well casing and tubing, of iron (other than cast iron) or steel (both carbon and alloy), whether seamless or welded, regardless of end finish (*e.g.,* whether or not plain end, threaded, or threaded and coupled) whether or not conforming to American Petroleum Institute (''API'') or non-API specifications, whether finished (including limited service OCTG products) or unfinished (including green tubes and limited service OCTG products), whether or not thread protectors are attached. The scope of the orders also covers OCTG coupling stock.

Excluded from the scope of the orders are: casing or tubing containing 10.5 percent or more by weight of chromium; drill pipe; unattached couplings; and unattached thread protectors.

The merchandise subject to the orders is currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under item numbers: 7304.29.10.10, 7304.29.10.20, 7304.29.10.30, 7304.29.10.40, 7304.29.10.50, 7304.29.10.60, 7304.29.10.80, 7304.29.20.10, 7304.29.20.20, 7304.29.20.30, 7304.29.20.40, 7304.29.20.50, 7304.29.20.60, 7304.29.20.80, 7304.29.31.10, 7304.29.31.20, 7304.29.31.30, 7304.29.31.40, 7304.29.31.50, 7304.29.31.60, 7304.29.31.80, 7304.29.41.10, 7304.29.41.20, 7304.29.41.30, 7304.29.41.40, 7304.29.41.50, 7304.29.41.60, 7304.29.41.80, 7304.29.50.15, 7304.29.50.30, 7304.29.50.45, 7304.29.50.60, 7304.29.50.75, 7304.29.61.15, 7304.29.61.30, 7304.29.61.45, 7304.29.61.60, 7304.29.61.75, 7305.20.20.00, 7305.20.40.00, 7305.20.60.00, 7305.20.80.00, 7306.29.10.30, 7306.29.10.90, 7306.29.20.00, 7306.29.31.00, 7306.29.41.00, 7306.29.60.10, 7306.29.60.50, 7306.29.81.10, and 7306.29.81.50.

The merchandise subject to the orders may also enter under the following HTSUS item numbers: 7304.39.00.24, 7304.39.00.28, 7304.39.00.32, 7304.39.00.36, 7304.39.00.40, 7304.39.00.44, 7304.39.00.48, 7304.39.00.52, 7304.39.00.56, 7304.39.00.62, 7304.39.00.68, 7304.39.00.72, 7304.39.00.76, 7304.39.00.80, 7304.59.60.00, 7304.59.80.15, 7304.59.80.20, 7304.59.80.25, 7304.59.80.30, 7304.59.80.35, 7304.59.80.40, 7304.59.80.45, 7304.59.80.50, 7304.59.80.55, 7304.59.80.60, 7304.59.80.65, 7304.59.80.70, 7304.59.80.80, 7305.31.40.00, 7305.31.60.90, 7306.30.50.55, 7306.30.50.90, 7306.50.50.50, and 7306.50.50.70.

The HTSUS subheadings above are provided for convenience and customs purposes only. The written description of the scope of the orders is dispositive.

Amended Affirmative Final Determination

On July 14, 2014, the Department disclosed to interested parties its calculations for the *India Final Determination.* On July 21, 2014, we received ministerial error comments from United States Steel Corporation (''Petitioner'') and Jindal SAW Limited (''Jindal SAW''). Jindal SAW filed rebuttal comments to Petitioner's ministerial error allegation on July 26, 2014. Petitioner filed rebuttal comments to Jindal SAW's ministerial error comments on July 28, 2014.

Section 705(e) of the Act and 19 CFR 351.224(f) define a ''ministerial error'' as an error ''in addition, subtraction, or other arithmetic function, clerical error resulting from inaccurate copying, duplication, or the like, and any similar type of unintentional error which the Secretary considers ministerial.'' After analyzing the ministerial error comments, we determine, in accordance with section 705(e) of the Act and 19 CFR 351.224(e), that we made the following ministerial error in our calculations for the *India Final Determination:* we inadvertently used Jindal SAW's sales of subject merchandise to the United States inclusive of freight and other expenses as the denominator for our calculations, when we clearly stated our intent in the *Final Determination* to use free on board (''FOB'') values as the denominator for rate calculations. For a detailed discussion of this ministerial error, as well as the Department's analysis of another ministerial error allegation (which we determine not to be a ministerial error), *see* the Ministerial Error Memorandum.[4]

In accordance with section 705(e) of the Act and 19 CFR 351.224(e), we are amending the final affirmative countervailing duty determination for Jindal SAW and for ''All Others'' for OCTG from India.[5] We determine the revised total estimated net countervailable subsidy rates to be 19.57 percent for Jindal SAW and 12.62 percent for All Others.[6]

[1] *See Certain Oil Country Tubular Goods From India: Final Affirmative Countervailing Duty Determination and Partial Final Affirmative Determination of Critical Circumstances*, 79 FR 41967 (July 18, 2014) (''*India Final Determination*''); *see also Certain Oil Country Tubular Goods From the Republic of Turkey: Final Affirmative Countervailing Duty Determination and Final Affirmative Critical Circumstances Determination,* 79 FR 41964 (July 18, 2014) (''*Turkey Final Determination*'').

[2] *See Certain Oil Country Tubular Goods from India, Korea, Philippines, Taiwan, Thailand, Turkey, Ukraine, and Vietnam, Investigation Nos. 701–TA–499–500 and 731–TA–1215–1217 and 1219–1223, USITC Pub. 4489 (Final)* (September 2014).

[3] *Id.*

[4] *See* Memorandum To Ronald K. Lorentzen, Acting Assistant Secretary for Enforcement and Compliance, Through Gary Taverman, Senior Advisor for Antidumping and Countervailing Duty Operations, From Edward C. Yang, Director, Office VII, Antidumping and Countervailing Duty Operations: Final Results of Countervailing Duty Investigation of Certain Oil Country Tubular Goods from India: Ministerial Error Allegation, dated August 12, 2014 (''Ministerial Error Memorandum'').

[5] The total estimated net countervailable subsidy from the *India Final Determination* for GVN Fuels Limited and its cross-owned producers Maharashtra Seamless Limited and Jindal Pipes Limited (''GVN/MSL/JPL'') remains unchanged at 5.67 percent. *See India Final Determination,* 79 FR at 41968.

[6] Because we calculated a simple average of the two respondents' rates in the *India Final Determination* to derive an ''All Others'' rate and the rate for one respondent has changed with this

Continued

Countervailing Duty Orders

In accordance with sections 705(b)(1)(A)(i) and 705(d) of the Act, the ITC notified the Department of its final determination that the industry in the United States producing OCTG is materially injured by reason of subsidized imports of OCTG from India and Turkey. Therefore, in accordance with section 705(c)(2) of the Act, we are publishing these countervailing duty orders.

For India, as a result of the ITC's final determination, in accordance with section 706(a) of the Act, the Department will direct U.S. Customs and Border Protection (''CBP'') to assess, upon further instruction by the Department, countervailing duties on unliquidated entries of OCTG produced and/or exported by GVN/MSL/JPL and ''all other'' companies that were entered, or withdrawn from warehouse, for consumption on or after December 23, 2013, the date on which the Department published its affirmative preliminary countervailing duty determination in the **Federal Register**, and before April 22, 2014, the date on which the Department instructed CBP to discontinue the suspension of liquidation in accordance with section 703(d) of the Act. Section 703(d) of the Act states that the suspension of liquidation pursuant to a preliminary determination may not remain in effect for more than four months. Therefore, entries of OCTG produced and/or exported by GVN/MSL/JPL and ''all other'' companies made on or after April 22, 2014, and prior to the date of publication of the ITC's final determination in the **Federal Register** are not liable for the assessment of countervailing duties due to the Department's discontinuation, effective April 22, 2014, of the suspension of liquidation. For Jindal SAW, countervailing duties will be assessed, upon further instruction from the Department, on unliquidated entries of OCTG entered, or withdrawn from warehouse, for consumption on or after July 18, 2014, the date on which the Department published its affirmative final determination in the **Federal Register**.

With regard to the ITC's negative critical circumstances determination, the Department will instruct CBP to lift suspension and refund any cash deposit of estimated countervailing duties for entries on or after April 19, 2014 (*i.e.,* the date 90 days prior to the date of publication of the *India Final Determination*), but before July 18, 2014, and produced and/or exported by Jindal SAW. Further, the Department will instruct CBP to lift suspension and refund any cash deposit of estimated countervailing duties for entries on or after September 24, 2013 (*i.e.,* 90 days prior to the date of publication of the *India Preliminary Determination* [7]) but before December 23, 2013, for ''All Others.''

For Turkey, as a result of the ITC's final determination, in accordance with section 706(a) of the Act, the Department will direct U.S. Customs and Border Protection (''CBP'') to assess, upon further instruction by the Department, countervailing duties on unliquidated entries of OCTG entered, or withdrawn from warehouse, for consumption on or after July 18, 2014, the date on which the Department published its affirmative final countervailing duty determination in the **Federal Register**. With regard to the ITC's negative critical circumstances determination, the Department will instruct CBP to lift suspension and refund any cash deposit of estimated countervailing duties for entries on or after April 19, 2014 (*i.e.,* 90 days prior to the date of publication of the *Turkey Final Determination*), but before July 18, 2014.

Suspension of Liquidation

For India, in accordance with section 706 of the Act, the Department will direct CBP to reinstitute the suspension of liquidation of OCTG from India, effective the date of publication of the ITC's notice of final determination in the **Federal Register**, and to assess, upon further advice by the Department pursuant to section 706(a)(1) of the Act, countervailing duties for each entry of the subject merchandise in an amount based on the net countervailable subsidy rates for the subject merchandise. On or after the date of publication of the ITC's final injury determination in the **Federal Register**, CBP must require, at the same time as importers would normally deposit estimated duties on this merchandise, a cash deposit equal to the rates noted below:

Producer/exporter	Net subsidy rate (Percent)
GVN Fuels Limited/ Maharashtra Seamless Limited/Jindal Pipes Limited	5.67
Jindal SAW Limited	19.57
All Others	12.62

For Turkey, in accordance with section 706 of the Act, the Department will direct CBP to continue the suspension of liquidation of OCTG from Turkey, and to assess, upon further advice by the Department pursuant to section 706(a)(1) of the Act, countervailing duties for each entry of the subject merchandise in an amount based on the net countervailable subsidy rates for the subject merchandise. CBP must require, at the same time as importers would normally deposit estimated duties on this merchandise, a cash deposit equal to the rates noted below:

Producer/exporter	Net Subsidy rate (percent)
Borusan Istikbal Ticaret, Borusan Mannesmann Boru Sanayi, Borusan Mannesmann Boru Yatirim Holding A.S., and Borusan Holding A.S.	15.89
Tosyali Dis Ticaret A.S, Tosçelik Profil ve Sac Endustrisi A.S., Tosyali Elektrik Enerjisi Toptan Satis Ith. Ihr. A.S., Tosyali Demir Celik San. A.S., and Tosyali Holding A.S.	2.53
All Others	9.21

This notice constitutes the countervailing duty orders with respect to OCTG from India and Turkey, pursuant to section 706(a) of the Act, and the amended affirmative final countervailing duty determination with respect to OCTG from India. Interested parties may contact the Department's Central Records Unit, Room 7046 of the

amended final determination, we have also revised the ''All Others'' rate. *See India Final Determination,* 79 FR at 41967–68.

[7] *See Certain Oil Country Tubular Goods From India: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Determination,* 78 FR 77421 (December 23, 2013) (''*India Preliminary Determination*'').

main Commerce Building, for copies of an updated list of countervailing duty orders currently in effect.

This order is issued and published in accordance with sections 705(e) and 706(a) of the Act, 19 CFR 351.211(b), and 19 CFR 351.224(e).

Dated: September 5, 2014.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

[FR Doc. 2014–21705 Filed 9–8–14; 4:15 pm]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A–533–857, A–580–870, A–583–850, A–489–816, A–552–817]

Certain Oil Country Tubular Goods From India, the Republic of Korea, Taiwan, the Republic of Turkey, and the Socialist Republic of Vietnam: Antidumping Duty Orders; and Certain Oil Country Tubular Goods From the Socialist Republic of Vietnam: Amended Final Determination of Sales at Less Than Fair Value

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: Based on affirmative final determinations by the Department of Commerce (the Department) and the International Trade Commission (the ITC), the Department is issuing antidumping duty (AD) orders on certain oil country tubular goods (OCTG) from India, the Republic of Korea (Korea), Taiwan, the Republic of Turkey (Turkey), and the Socialist Republic of Vietnam (Vietnam). In addition, the Department is amending its final determination of sales at less than fair value (LTFV) from Vietnam as a result of ministerial errors.

DATES: *Effective Date:* September 10, 2014.

FOR FURTHER INFORMATION CONTACT: Emily Halle at (202) 482–0176 (India); Victoria Cho at (202) 482–5075 or Deborah Scott at (202) 482–2657 (Korea); Thomas Schauer at (202) 482–0410 (Taiwan); Catherine Cartsos at (202) 482–1757 (Turkey); or Fred Baker at (202) 482–2924 or Davina Friedmann at (202) 482–0698 (Vietnam), AD/CVD Operations, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230.

SUPPLEMENTARY INFORMATION:

Background

In accordance with sections 735(d) and 777(i)(1) of the Tariff Act of 1930, as amended (the Act) and 19 CFR 351.210(c), on July 18, 2014, the Department published affirmative final determinations of sales at LTFV in the investigations of OCTG from India, Korea, Taiwan, Turkey, and Vietnam.[1] On August 8, 2014, the Department published an amended final determination of sales at LTFV in the investigation of OCTG from Taiwan.[2] On September 2, 2014, the ITC notified the Department of its affirmative determinations that an industry in the United States is materially injured within the meaning of section 735(b)(1)(A)(i) of the Act by reason of LTFV imports of OCTG from India, Korea, Turkey, and Vietnam, and threatened with material injury within the meaning of section 735(b)(1)(A)(ii) of the Act by reason of LTFV imports of OCTG from Taiwan.[3] In addition, the ITC found in its final determinations that critical circumstances do not exist with respect to imports of subject merchandise from Turkey and Vietnam that are subject to the Department's final affirmative critical circumstances findings.[4]

Scope of the Orders

The products covered by these orders are certain oil country tubular goods (OCTG), which are hollow steel products of circular cross-section, including oil well casing and tubing, of iron (other than cast iron) or steel (both carbon and alloy), whether seamless or welded, regardless of end finish (*e.g.,* whether or not plain end, threaded, or threaded and coupled) whether or not conforming to American Petroleum Institute (API) or non-API specifications, whether finished (including limited service OCTG products) or unfinished (including green tubes and limited service OCTG products), whether or not thread protectors are attached. The scope of the orders also covers OCTG coupling stock.

Excluded from the scope of the orders are: Casing or tubing containing 10.5 percent or more by weight of chromium; drill pipe; unattached couplings; and unattached thread protectors.

The merchandise subject to the orders is currently classified in the Harmonized Tariff Schedule of the United States (HTSUS) under item numbers: 7304.29.10.10, 7304.29.10.20, 7304.29.10.30, 7304.29.10.40, 7304.29.10.50, 7304.29.10.60, 7304.29.10.80, 7304.29.20.10, 7304.29.20.20, 7304.29.20.30, 7304.29.20.40, 7304.29.20.50, 7304.29.20.60, 7304.29.20.80, 7304.29.31.10, 7304.29.31.20, 7304.29.31.30, 7304.29.31.40, 7304.29.31.50, 7304.29.31.60, 7304.29.31.80, 7304.29.41.10, 7304.29.41.20, 7304.29.41.30, 7304.29.41.40, 7304.29.41.50, 7304.29.41.60, 7304.29.41.80, 7304.29.50.15, 7304.29.50.30, 7304.29.50.45, 7304.29.50.60, 7304.29.50.75, 7304.29.61.15, 7304.29.61.30, 7304.29.61.45, 7304.29.61.60, 7304.29.61.75, 7305.20.20.00, 7305.20.40.00, 7305.20.60.00, 7305.20.80.00, 7306.29.10.30, 7306.29.10.90, 7306.29.20.00, 7306.29.31.00, 7306.29.41.00, 7306.29.60.10, 7306.29.60.50, 7306.29.81.10, and 7306.29.81.50.

The merchandise subject to the orders may also enter under the following HTSUS item numbers: 7304.39.00.24, 7304.39.00.28, 7304.39.00.32, 7304.39.00.36, 7304.39.00.40, 7304.39.00.44, 7304.39.00.48, 7304.39.00.52, 7304.39.00.56, 7304.39.00.62, 7304.39.00.68, 7304.39.00.72, 7304.39.00.76, 7304.39.00.80, 7304.59.60.00, 7304.59.80.15, 7304.59.80.20, 7304.59.80.25, 7304.59.80.30, 7304.59.80.35, 7304.59.80.40, 7304.59.80.45, 7304.59.80.50, 7304.59.80.55, 7304.59.80.60, 7304.59.80.65, 7304.59.80.70, 7304.59.80.80, 7305.31.40.00,

[1] *See Final Determination of Sales at Less Than Fair Value and Final Negative Determination of Critical Circumstances: Certain Oil Country Tubular Goods From India,* 79 FR 41981 (July 18, 2014) (*India Final Determination*); *Certain Oil Country Tubular Goods From the Republic of Korea: Final Determination of Sales at Less Than Fair Value and Negative Final Determination of Critical Circumstances,* 79 FR 41983 (July 18, 2014) (*Korea Final Determination*); *Certain Oil Country Tubular Goods From Taiwan: Final Determination of Sales at Less Than Fair Value,* 79 FR 41979 (July 18, 2014) (*Taiwan Final Determination*); *Certain Oil Country Tubular Goods From the Republic of Turkey: Final Determination of Sales at Less Than Fair Value and Affirmative Final Determination of Critical Circumstances, in Part,* 79 FR 41973 (July 18, 2014) (*Turkey Final Determination*); and *Certain Oil Country Tubular Goods From the Socialist Republic of Vietnam: Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances,* 79 FR 41972 (July 18, 2014) (*Vietnam Final Determination*), respectively.

[2] *See Certain Oil Country Tubular Goods From Taiwan: Amended Final Determination of Sales at Less Than Fair Value,* 79 FR 46403 (August 8, 2014) (*Taiwan Amended Final Determination*).

[3] *See* Letter from the ITC to the Department, dated September 2, 2014; *see also Certain Oil Country Tubular Goods from India, Korea, Philippines, Taiwan, Thailand, Turkey, Ukraine, and Vietnam* (Investigation Nos. 701–TA–499–500 and 731–TA–1215–1217 and 1219–1223 (Final), USITC Publication 4489, September 2014).

[4] *See Certain Oil Country Tubular Goods From India, Korea, the Philippines, Taiwan, Thailand, Turkey, Ukraine, and Vietnam,* 79 FR 53080 (September 5, 2014).

7305.31.60.90, 7306.30.50.55, 7306.30.50.90, 7306.50.50.50, and 7306.50.50.70.

The HTSUS subheadings above are provided for convenience and customs purposes only. The written description of the scope of the orders is dispositive.

Amendment to the Final Determination of Sales at Less Than Fair Value of OCTG From Vietnam

On July 18, 2014, the Department published its affirmative final determination of sales at LTFV of OCTG from Vietnam.[5] On July 21, 2014, U.S. Steel Corporation submitted allegations of two ministerial errors.[6]

After analyzing the allegations, the Department determined, in accordance with section 735(e) of the Act and 19 CFR 351.224(f), that it made the alleged ministerial errors. Specifically, the Department unintentionally failed to (1) apply the revised usage factors for unreported yield loss to the total price of hot-rolled coil (*i.e.,* the price of hot-rolled coil including brokerage and handling costs and import fees), and (2) use the usage factor for emulsified oil that the respondent provided in its opening-day corrections at verification. Based on our correction of these errors, the respondent's estimated weighted-average dumping margin increased from 24.22 percent to 25.18 percent.[7]

In accordance with section 735(d) of the Act, we have notified the ITC of the *Vietnam Final Determination* and our amended final determination.

Antidumping Duty Orders

As stated above, on September 2, 2014, in accordance with section 735(d) of the Act, the ITC notified the Department of its final determinations in its investigations, in which it found that an industry in the United States is materially injured by reason of imports of OCTG from India, Korea, Turkey, and Vietnam, and threatened with material injury by reason of imports of OCTG from Taiwan.[8] Because the ITC determined that imports of OCTG from India, Korea, Taiwan, Turkey, and Vietnam are materially injuring or threatening with material injury a U.S. industry, unliquidated entries of such merchandise from India, Korea, Taiwan, Turkey, and Vietnam, entered or withdrawn from warehouse, for consumption are subject to the assessment of antidumping duties.

Therefore, in accordance with section 736(a)(1) of the Act, the Department will direct U.S. Customs and Border Protection (CBP) to assess, upon further instruction by the Department, antidumping duties equal to the amount by which the normal value of the merchandise exceeds the export price (or constructed export price) of the merchandise, for all relevant entries of OCTG from India, Korea, Taiwan, Turkey, and Vietnam. These antidumping duties will be assessed on unliquidated entries of OCTG from India, Turkey, and Vietnam entered, or withdrawn from warehouse, for consumption on or after February 25, 2014, the date of publication of the preliminary determinations,[9] but will not include entries occurring after the expiration of the provisional measures period and before publication of the ITC's final injury determination as further described below. Antidumping duties will also be assessed on unliquidated entries of OCTG from Korea entered, or withdrawn from warehouse, for consumption on or after July 18, 2014, the date of publication of the final determination.[10]

Pursuant to section 736(b)(2) of the Act, duties shall be assessed on subject merchandise entered, or withdrawn from warehouse, for consumption on or after the date of publication of the ITC's notice of final determination if that determination is based on the threat of material injury, other than threat of material injury described in section 736(b)(1) of the Act.[11] In addition, section 736(b)(2) of the Act requires CBP to release any bond or other security, and refund any cash deposit made of estimated antidumping duties posted since the Department's preliminary antidumping duty determination. Because the ITC's final determination with respect to Taiwan is based on the threat of material injury and is not accompanied by a finding that injury would have resulted but for the imposition of suspension of liquidation of entries since the Department's preliminary determination, section 736(b)(2) of the Act is applicable. However, following publication of its amended preliminary determination of sales at not LTFV for OCTG from Taiwan, the Department directed CBP to terminate suspension of liquidation and release any cash deposits posted.[12]

Continuation of Suspension of Liquidation

In accordance with section 735(c)(1)(B) of the Act, we will instruct CBP to continue to suspend liquidation on all entries of OCTG from India, Korea, Turkey, and Vietnam, with the exception of those for firms for which the Department's final determination was negative. We will also instruct CBP to suspend liquidation on all unliquidated entries of OCTG from Taiwan entered, or withdrawn from warehouse, for consumption on or after the date of publication of the ITC's

[5] *See Vietnam Final Determination.*

[6] *See* Letter from U.S. Steel Corporation to the Department, ''Re: Oil Country Tubular Goods from Vietnam'' dated July 21, 2014.

[7] *See* Memorandum from Christian Marsh to Ronald K. Lorentzen, ''Less-Than-Fair-Value Investigation of Certain Oil Country Tubular Goods from the Socialist Republic of Vietnam: Allegations of Ministerial Errors,'' dated August 11, 2014 (Ministerial Errors Memorandum). The Department also received a request from SeAH Steel VINA Corporation (SeAH VINA) to correct certain alleged errors. *See* Letter from SeAH VINA to the Department, ''Re: Antidumping Investigation of Oil Country Tubular Goods from Vietnam—Request for Correction of Egregious Misstatements of Fact and Law in Final Determination,'' dated July 21, 2014. We determined that the alleged errors were not ministerial in nature and have not made any changes based on this request. *See* Ministerial Errors Memorandum at 4–5.

[8] *See* Letter from the ITC to the Department, dated September 2, 2014; *see also Certain Oil Country Tubular Goods from India, Korea, Philippines, Taiwan, Thailand, Turkey, Ukraine, and Vietnam* (Investigation Nos. 701–TA–499–500 and 731–TA–1215–1217 and 1219–1223 (Final), USITC Publication 4489, September 2014).

[9] *See Certain Oil Country Tubular Goods From India: Preliminary Determination of Sales at Less Than Fair Value, Preliminary Affirmative Determination of Critical Circumstances, in Part, and Postponement of Final Determination,* 79 FR 10493 (February 25, 2014); *Certain Oil Country Tubular Goods From the Republic of Turkey: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Negative Preliminary Determination of Critical Circumstances, and Postponement of Final Determination,* 79 FR 10484 (February 25, 2014); and *Certain Oil Country Tubular Goods From the Socialist Republic of Vietnam: Preliminary Determination of Sales at Less Than Fair Value, Affirmative Preliminary Determination of Critical Circumstances, in Part, and Postponement of Final Determination,* 79 FR 10478 (February 25, 2014).

Note that entries for Borusan Mannesmann Boru Sanayi ve Ticaret and Borusan Istikbal Ticaret will not be subject to assessment of antidumping duties because the Department's final determination with respect to that firm was negative. *See Turkey Final Determination* at 41973.

[10] The Department did not direct CBP to suspend liquidation of any entries of OCTG from Korea at the preliminary determination because the Department did not make an affirmative preliminary determination of sales at LTFV with respect to OCTG from Korea. *See Certain Oil Country Tubular Goods From the Republic of Korea: Negative Preliminary Determination of Sales at Less Than Fair Value, Negative Preliminary Determination of Critical Circumstances and Postponement of Final Determination,* 79 FR 10480 (February 25, 2014).

[11] Section 736(b)(1) of the Act states that ''{i}f the ITC, in its final determination under section 735(b), finds material injury or threat of material injury which, but for the suspension of liquidation under section 733(d)(2) would have led to a finding of material injury, then entries of the subject merchandise, the liquidation of which has been suspended under section 733(d)(2), shall be subject to the imposition of antidumping duties under section 731.''

[12] *See Certain Oil Country Tubular Goods From Taiwan: Amended Preliminary Negative Determination of Sales at Less Than Fair Value and Postponement of Final Determination,* 79 FR 18667 (April 3, 2014).

notice of final determination of threat of material injury in the **Federal Register**, with the exception of entries for that firm for which the Department's final determination was negative.[13] These instructions suspending liquidation will remain in effect until further notice.

We will also instruct CBP to require cash deposits at rates equal to the estimated weighted-average dumping margins indicated below. Accordingly, effective on the date of publication of the ITC's final affirmative injury determinations, CBP will require, at the same time as importers would normally deposit estimated duties on this subject merchandise, a cash deposit at rates equal to the estimated weighted-average dumping margins listed below.[14] The relevant all-others rate (for India, Korea, Taiwan, and Turkey) or the rate for the Vietnam-wide entity (for Vietnam), as applicable, apply to all producers or exporters not specifically listed. For the purpose of determining cash deposit rates, the estimated weighted-average dumping margins for imports of subject merchandise from India and Turkey will be adjusted, as appropriate, for export subsidies found in the final determination of the companion countervailing duty investigations of this merchandise imported from India or Turkey.[15]

Provisional Measures

Section 733(d) of the Act states that instructions issued pursuant to an affirmative preliminary determination may not remain in effect for more than four months except where exporters representing a significant proportion of exports of the subject merchandise request the Department to extend that four-month period to no more than six months. At the request of exporters that account for a significant proportion of OCTG from India, Turkey, and Vietnam, we extended the four-month period to no more than six months in each case.[16] As noted above, in the investigations covering OCTG from India, Turkey, and Vietnam, the Department published the preliminary determinations on February 25, 2014. Therefore, the six-month period beginning on the date of publication of the preliminary determinations ended on August 24, 2014 (*i.e.,* the last day of that six-month period is August 23, 2014). Furthermore, section 737(b) of the Act states that definitive duties are to begin on the date of publication of the ITC's final injury determination.

Therefore, in accordance with section 733(d) of the Act and our practice, we will instruct CBP to terminate the suspension of liquidation and to liquidate, without regard to antidumping duties, unliquidated entries of OCTG from India, Turkey, and Vietnam, entered, or withdrawn from warehouse, for consumption on or after August 24, 2014, the date the provisional measures expired, until and through the day preceding the date of publication of the ITC's final injury determinations in the **Federal Register**. Suspension of liquidation resumes on the date of publication of the ITC's final determination in the **Federal Register**.

Estimated Weighted-Average Dumping Margins

The estimated weighted-average dumping margins are as follows:

Exporter or producer	Estimated weighted-average dumping margin (percent)
India[17]	
Jindal SAW Ltd.	9.91
GVN Fuels Limited, Maharashtra Seamless Limited and Jindal Pipe Limited	2.05
All Others	5.79
Korea	
Hyundai HYSCO	15.75
NEXTEEL Co. Ltd	9.89
All Others	12.82
Taiwan	
Chung Hung Steel Corp[18]	0.00
Tension Steel Industries Co., Ltd	2.34
All Others	2.34
Turkey	
Borusan Mannesmann Boru Sanayi ve Ticaret and Borusan Istikbal Ticaret[19]	0.00
Cayirova Boru Sanayi ve Ticaret A.S. and Yucel Boru Ithalat-Ihracat ve Pazarlama A.S.[20]	35.86
All Others[21]	35.86

[13] Entries for Chung Hung Steel Corp will not be subject to assessment of antidumping duties because the Department's final determination with respect to that firm was negative. *See Taiwan Amended Final Determination,* 79 FR at 46404.

[14] *See* section 736(a)(3) of the Act.

[15] *See India Final Determination,* 79 FR at 41982–3 and *Turkey Final Determination,* 79 FR at 41972–3, respectively. *See also Certain Oil Country Tubular Goods From India: Final Affirmative Countervailing Duty Determination and Partial Final Affirmative Determination of Critical Circumstances,* 79 FR 41967 (July 18, 2014) (*India CVD Final Determination*) and *Certain Oil Country Tubular Goods From the Republic of Turkey: Final Affirmative Countervailing Duty Determination and Final Affirmative Critical Circumstances Determination,* 79 FR 41964 (July 18, 2014) (*Turkey CVD Final Determination*).

[16] We also extended the provisional measures period at the preliminary determination in the investigation of OCTG from Taiwan. However, as explained above, we later published an amended preliminary determination of sales at not LTFV for OCTG from Taiwan, and directed CBP to terminate suspension of liquidation. Therefore, the issue of provisional measures for OCTG from Taiwan is moot.

Exporter	Producer	Estimated weighted-average dumping margin (percent)
Vietnam		
SeAH Steel VINA Corporation	SeAH Steel VINA Corporation	25.18
Vietnam-wide Entity		111.47

Critical Circumstances

With regard to the ITC's negative critical circumstances determinations on imports of OCTG from Turkey and Vietnam, we will instruct CBP to lift suspension and to refund any cash deposit made to secure the payment of estimated antidumping duties with respect to entries of the merchandise entered, or withdrawn from warehouse, for consumption on or after November 27, 2013 (*i.e.,* 90 days prior to the date of publication of the preliminary determinations), but before February 25, 2014, the publication date of the preliminary determinations.

Notifications to Interested Parties

This notice constitutes the AD orders with respect to OCTG from India, Korea, Taiwan, Turkey, and Vietnam pursuant to section 736(a) of the Act. Interested parties can find a list of AD orders currently in effect at *http://enforcement.trade.gov/stats/iastats1.html.*

These orders and amended final determination are published in accordance with sections 736(a) and 735(e) of the Act and 19 CFR 351.211 and 351.224(e).

Dated: September 4, 2014.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

[FR Doc. 2014–21596 Filed 9–9–14; 8:45 am]

BILLING CODE 3510–DS–P

[17] As explained in the *India Final Determination,* the estimated weighted-average dumping margin for each respondent and for ''all others'' will be adjusted for export subsidies. *See India Final Determination,* 79 FR at 41982. As a result of the adjustment for export subsidies, the cash deposit rate for each respondent and for ''all others'' will be zero. For information regarding these export subsidies, *see India CVD Final Determination* and accompanying Issues and Decision Memorandum at section VI.A, ''Programs Determined To Be Countervailable;'' *see also* Memorandum from Edward C. Yang through Gary Taverman to Ronald K. Lorentzen RE: Amended Final Determination—Countervailing Duty Investigation of Certain Oil Country Tubular Goods from India, ''Ministerial Error Allegations,'' dated August 12, 2014.

[18] No suspension of liquidation will be required for entries of this firm because its estimated weighted-average dumping margin is zero. *See Taiwan Amended Final Determination,* 79 FR at 46404.

[19] No suspension of liquidation will be required for entries of these firms because their estimated weighted-average dumping margin is zero. *See Turkey Final Determination,* 79 FR at 41973.

[20] As explained in the *Turkey Final Determination,* the estimated weighted-average dumping margin for these firms will be adjusted for export subsidies. *See Turkey Final Determination,* 79 FR at 41972–73. As a result of the adjustment for export subsidies, the cash deposit rate for these firms will be 35.68 percent. *See Turkey CVD Final Determination* and accompanying Issues and Decision Memorandum at section VII.A, ''Programs Determined To Be Countervailable'' for information regarding these export subsidies.

[21] As explained in the *Turkey Final Determination,* the estimated weighted-average dumping margin for ''all others'' will be adjusted for export subsidies. *See Turkey Final Determination,* 79 FR at 41972–73. As a result of the adjustment for export subsidies, the cash deposit rate for all others will be 35.68 percent. *See Turkey CVD Final Determination* and accompanying Issues and Decision Memorandum at section VII.A, ''Programs Determined To Be Countervailable'' for information regarding these export subsidies.

DEPARTMENT OF COMMERCE

International Trade Administration

[Application No. 84–25A12]

Export Trade Certificate of Review

ACTION: Notice of Issuance of an Export Trade Certificate of Review to Northwest Fruit Exporters, Application No. 84–25A12.

SUMMARY: The Secretary of Commerce, through the International Trade Administration, Office of Trade and Economic Analysis (OTEA), issued an amended Export Trade Certificate of Review (''Certificate'') to Northwest Fruit Exporters on August 22, 2014. The previous amendment was issued on August 13, 2013 (78 FR 53727).

FOR FURTHER INFORMATION CONTACT: Joseph E. Flynn, Director, Office of Trade and Economic Analysis, International Trade Administration, by telephone at (202) 482–5131 (this is not a toll-free number) or email at *etca@trade.gov.*

SUPPLEMENTARY INFORMATION: Title III of the Export Trading Company Act of 1982 (15 U.S.C. 4001–21) authorizes the Secretary of Commerce to issue Export Trade Certificates of Review. The regulations implementing Title III are found at 15 CFR Part 325 (2012). OTEA is issuing this notice pursuant to 15 CFR 325.6(b), which requires the Department of Commerce to publish a summary of the certificate in the **Federal Register**. Under Section 305(a) of the Act and 15 CFR 325.11(a), any person aggrieved by the Secretary's determination may, within 30 days of the date of this notice, bring an action in any appropriate district court of the United States to set aside the determination on the ground that the determination is erroneous.

Description of Amendments to the Certificate

1. Add the following company as a new Member of the Certificate within the meaning of section 325.2(l) of the regulations (15 CFR 325.2(l)): Garrett Ranches Packing (Wilder, ID);
2. Remove the following companies as a Member of NWF's Certificate: Eakin Fruit Co. (Union Gap, WA); and Wenoka Sales LLC (Wenatchee, WA); and
3. Change the name of the following member: Underwood Fruit and Warehouse (White Salmon, WA) is now The Dalles Fruit Company, LLC (Dallesport, WA).

NWF's Export Trade Certificate of Review complete amended membership is listed below:

4. Allan Bros., Naches, WA
5. AltaFresh L.L.C. dba Chelan Fresh Marketing, Chelan, WA
6. Apple King, L.L.C., Yakima, WA
7. Auvil Fruit Co., Inc., Orondo, WA
8. Baker Produce, Inc., Kennewick, WA
9. Blue Bird, Inc., Peshastin, WA
10. Blue Mountain Growers, Inc., Milton-Freewater, OR
11. Blue Star Growers, Inc., Cashmere, WA

12. Borton & Sons, Inc., Yakima, WA
13. Brewster Heights Packing & Orchards, LP, Brewster, WA
14. Broetje Orchards LLC, Prescott, WA
15. C&M Fruit Packers, Wenatchee, WA
16. C.M. Holtzinger Fruit Co., Inc., Yakima, WA
17. Chelan Fruit Cooperative, Chelan, WA
18. Chiawana, Inc. dba Columbia Reach Pack, Yakima, WA
19. Columbia Fruit Packers, Inc., Wenatchee, WA
20. Columbia Marketing International Corp., Wenatchee, WA
21. Columbia Valley Fruit, L.L.C., Yakima, WA
22. Congdon Packing Co. L.L.C., Yakima, WA
23. Conrad & Adams Fruit L.L.C., Grandview, WA
24. Cowiche Growers, Inc., Cowiche, WA
25. CPC International Apple Company, Tieton, WA
26. Crane & Crane, Inc., Brewster, WA
27. Custom Apple Packers, Inc., Brewster, Quincy, and Wenatchee, WA
28. Diamond Fruit Growers, Odell, OR
29. Domex Marketing, Yakima, WA
30. Douglas Fruit Company, Inc., Pasco, WA
31. Dovex Export Company, Wenatchee, WA
32. E. Brown & Sons, Inc., Milton-Freewater, OR
33. Evans Fruit Co., Inc., Yakima, WA
34. E.W. Brandt & Sons, Inc., Parker, WA
35. Frosty Packing Co., LLC, Yakima, WA
36. G&G Orchards, Inc., Yakima, WA
37. Garrett Ranches Packing, Wilder, ID
38. Gilbert Orchards, Inc., Yakima, WA
39. Gold Digger Apples, Inc., Oroville, WA
40. Hansen Fruit & Cold Storage Co., Inc., Yakima, WA
41. Henggeler Packing Co., Inc., Fruitland, ID
42. Highland Fruit Growers, Inc., Yakima, WA
43. HoneyBear Growers, Inc., (Brewster, WA)
44. Honey Bear Tree Fruit Co., LLC, Wenatchee, WA
45. Hood River Cherry Company, Hood River, OR
46. Ice Lakes LLC, E. Wenatchee, WA
47. JackAss Mt. Ranch, Pasco, WA
48. Jenks Bros Cold Storage Packing (Royal City, WA)
49. Kershaw Fruit & Cold Storage, Co., Yakima, WA
50. L&M Companies, Selah, WA
51. Larson Fruit Co., Selah, WA
52. Manson Growers Cooperative, Manson, WA
53. Matson Fruit Company, Selah, WA
54. McDougall & Sons, Inc., Wenatchee, WA
55. Monson Fruit Co.—Apple operations only, Selah, WA
56. Morgan's of Washington dba Double Diamond Fruit, Quincy, WA
57. Northern Fruit Company, Inc., Wenatchee, WA
58. Obert Cold Storage, Zillah, WA
59. Olympic Fruit Co., Moxee, WA
60. Oneonta Trading Corp., Wenatchee, WA
61. Orchard View Farms, Inc., The Dalles, OR
62. Pacific Coast Cherry Packers, LLC, Yakima, WA
63. Phillippi Fruit Company, Inc., Wenatchee, WA
64. Polehn Farm's Inc., The Dalles, OR
65. Price Cold Storage & Packing Co., Inc., Yakima, WA
66. Pride Packing Company, Wapato, WA
67. Quincy Fresh Fruit Co., Quincy, WA
68. Rainier Fruit Company, Selah, WA
69. Roche Fruit, Ltd., Yakima, WA
70. Sage Fruit Company, L.L.C., Yakima, WA
71. Smith & Nelson, Inc., Tonasket, WA
72. Stadelman Fruit, L.L.C., Milton-Freewater, OR, and Zillah, WA
73. Stemilt Growers, Inc., Wenatchee, WA
74. Strand Apples, Inc., Cowiche, WA
75. Symms Fruit Ranch, Inc., Caldwell, ID
76. The Apple House, Inc., Brewster, WA
77. The Dalles Fruit Company, LLC, Dallesport, WA
78. Valicoff Fruit Co., Inc., Wapato, WA
79. Valley Fruit III L.L.C., Wapato, WA
80. Washington Cherry Growers, Peshastin, WA
81. Washington Fruit & Produce Co., Yakima, WA
82. Western Sweet Cherry Group, LLC, Yakima, WA
83. Whitby Farms, Inc. dba: Farm Boy Fruit Snacks LLC, Mesa, WA
84. Yakima Fresh, Yakima, WA
85. Yakima Fruit & Cold Storage Co., Yakima, WA
86. Zirkle Fruit Company, Selah, WA

The effective date of the amended certificate is May 27, 2014, the date on which NWF's application to amend was deemed submitted.

Date: September 4, 2014

Joseph Flynn, Director,

Office of Trade and Economic Analysis, International Trade Administration.

[FR Doc. 2014–21507 Filed 9–9–14; 8:45 am]

BILLING CODE 3510–DR–P

DEPARTMENT OF COMMERCE

International Trade Administration

Manufacturing Council

AGENCY: International Trade Administration, U.S. Department of Commerce.

ACTION: Notice of Renewal of and Opportunity To Apply for Membership on the Manufacturing Council.

SUMMARY: The Department of Commerce announces the renewal of the Manufacturing Council (Council) and is currently seeking applications for appointment of up to 30 members of the Council for a two-year term to begin in December 2014. The purpose of the Council is to advise the Secretary of Commerce on matters relating to the U.S. manufacturing sector and to provide regular communication between Government and the manufacturing sector.

The Industry and Analysis unit of the International Trade Administration oversees the administration of the Council and collaborates with Congress and other stakeholders to increase the global competitiveness of the U.S. manufacturing sector.

ADDRESSES: Please submit applications via email *mc@trade.gov* or by mail to Office of Advisory Committees and Industry Outreach, Manufacturing Council Executive Secretariat, U.S. Department of Commerce, Room 4043, 1401 Constitution Avenue NW., Washington, DC 20230.

DATES: All applications for immediate consideration for appointment must be received by the Office of Advisory Committees and Industry Outreach by 5:00 p.m. Eastern Daylight Time (EDT) on Tuesday, October 14, 2014. After that date, ITA will continue to accept applications under this notice for a period of up to two years from the deadline to fill any vacancies that may arise.

FOR FURTHER INFORMATION CONTACT: Office of Advisory Committees and Industry Outreach, Manufacturing Council Executive Secretariat, Room 4043, 1401 Constitution Avenue NW., Washington, DC 20230, telephone: 202–482–4501, email: *mc@trade.gov.*

Additional information is also available on the Manufacturing Council Web site at *http://trade.gov/manufacturingcouncil.*

SUPPLEMENTARY INFORMATION: The Office of Advisory Committees and Industry Outreach is accepting applications for 30 positions on the Council for a two-year term beginning in December of

2014. The Department renewed the Council charter on April 5, 2014 for an additional two years pursuant to the Department of Commerce authority under 15 U.S.C. 1512 and the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. App.

The Council advises the Secretary of Commerce on matters relating to the U.S. manufacturing industry, including on government policies and programs that affect the U.S. manufacturing industry and identifying and recommending programs and policies to help United States manufacturers maintain competitiveness both at home and abroad.

The Council provides a means of ensuring regular contact between the U.S. Government and the manufacturing sector, acting as a liaison among the stakeholders represented by the membership, and may provide a forum for those stakeholders on current and emerging issues in the manufacturing sector. The Council shall recommend ways to ensure that the United States remains the preeminent destination for investment in manufacturing throughout the world.

The Council shall report to the Secretary on its activities and recommendations regarding United States manufacturing. In creating the reports, the Council should: survey and evaluate the manufacturing activities of the stakeholders represented by the membership; identify and examine specific problems facing the manufacturing industry; examine the needs of the industry to inform the Council's efforts; and recommend specific solutions to these problems and needs.

The Council functions solely as an advisory committee in accordance with the provisions of FACA.

Members will be selected in accordance with applicable Department of Commerce guidelines based on each individual's ability to advise the Secretary of Commerce on matters relating to the U.S. manufacturing sector, to act as a liaison among the stakeholders represented by the membership, and to represent the viewpoint of those stakeholders on current and emerging issues in the manufacturing sector. In assessing this ability, the Department will consider such factors as, but not limited to, the candidate's proven experience in promoting, developing and marketing programs in support of manufacturing industries, job creation in the manufacturing sector, and the candidate's proven abilities to manage manufacturing organizations. Given the duties and objectives of the Council, the Department particularly seeks applicants who are active manufacturing executives (Chief Executive Officer, President, or a comparable level of responsibility) who are leaders within their local manufacturing communities and industry sectors. The Council's membership shall reflect the diversity of American manufacturing by representing a balanced cross-section of the U.S. manufacturing industry in terms of industry sectors, geographic locations, demographics, and company size, particularly seeking the representation of small- and medium-sized enterprises.

The Secretary of Commerce appoints all Council members. All Council members serve at the discretion of the Secretary of Commerce. Council members shall serve in a representative capacity, representing the views and interests of a U.S. entity in the manufacturing industry and its particular sector. For the purposes of eligibility, a U.S. entity is defined as a firm incorporated in the United States (or an unincorporated firm with its principal place of business in the United States) that is (a) majority controlled (more than 50% ownership interest and/or voting stock) by U.S. citizens or by another U.S. entity or (b) majority controlled (more than 50% ownership interest and/or voting stock) directly or indirectly by a foreign parent company.

Because Council members serve in a representative capacity, expressing the views and interests of a U.S. entity, they are therefore not Special Government Employees. Council members receive no compensation for their participation in Council activities. Members participating in Council meetings and events are responsible for their travel, living and other personal expenses. Meetings are held regularly and not less than annually, usually in Washington, DC. Members are required to attend a majority of the Council's meetings.

To be considered for membership, an applicant must provide the following information, statements and documents. Incomplete applications cannot be considered.

1. Name and title of the individual requesting consideration.
2. A sponsor letter from the applicant on his or her entity's letterhead containing a brief statement of why the applicant should be considered for membership on the Council. This sponsor letter should also address the applicant's manufacturing-related experience, including any manufacturing trade policy experience.
3. The applicant's personal resume.
4. An affirmative statement that the applicant meets all eligibility criteria.
5. An affirmative statement that the applicant is not required to register as a foreign agent under the Foreign Agents Registration Act of 1938, as amended.
6. Information regarding the ownership and control of the entity to be represented, including the governing structure and stock holdings, as appropriate, demonstrating compliance with the criteria set forth above.
7. The entity's size, place of incorporation or principal place of business, additional manufacturing, innovation and R&D locations, product line, major markets in which the entity operates, and the entity's exporting experience.
8. Information on the challenges the entity faces in staying competitive as a U.S. manufacturer, and the priorities the entity would hope to see the Council address during the term.
9. All relevant contact information, including mailing address, fax, email, phone number, and support staff information where relevant.

Dated: September 4, 2014.

Jennifer Pilat,

Office of Advisory Committees and Industry Outreach.

[FR Doc. 2014–21513 Filed 9–9–14; 8:45 am]

BILLING CODE 3510–DR–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

U.S. Integrated Ocean Observing System (IOOS®) Advisory Committee

AGENCY: National Ocean Service, National Oceanic and Atmospheric Administration (NOAA), Department of Commerce.

ACTION: Notice of open meeting.

SUMMARY: Notice is hereby given of a meeting of the U. S. Integrated Ocean Observing System (IOOS®) Advisory Committee (Committee) in Duluth, MN.

Dates and Times: The meeting will be held on Thursday, October 2, 2014, from 8:30 a.m. to 4:15 p.m. and on Friday, October 3, 2014, from 8:30 a.m.–3:00 p.m. These times and the agenda topics described below are subject to change. Refer to the Web page listed below for the most up-to-date meeting agenda.

ADDRESSES: The meeting will be held at the Large Lakes Observatory, University of Minnesota Duluth, 10 University Drive 206 RLB Duluth, MN 55812–2496.

FOR FURTHER INFORMATION CONTACT: Jessica Snowden, Alternate Designated Federal Official, U.S. IOOS Advisory

Committee, U.S. IOOS Program, 1100 Wayne Ave. Suite 1225, Silver Spring, MD 20910; Phone 301–427–2453; Fax 301–427–2073; Email *jessica.snowden@noaa.gov* or visit the U.S. IOOS Advisory Committee Web site at *http://www.ioos.noaa.gov/advisorycommittee.*

SUPPLEMENTARY INFORMATION: The Committee was established by the NOAA Administrator as directed by Section 12304 of the Integrated Coastal and Ocean Observation System Act, part of the Omnibus Public Land Management Act of 2009 (Pub. L. 111–11). The Committee advises the NOAA Administrator and the Interagency Ocean Observation Committee (IOOC) on matters related to the responsibilities and authorities set forth in section 12302 of the Integrated Coastal and Ocean Observation System Act of 2009 and other appropriate matters as the Under Secretary refers to the Committee for review and advice.

The Committee will provide advice on:

(a) Administration, operation, management, and maintenance of the System;

(b) expansion and periodic modernization and upgrade of technology components of the System;

(c) identification of end-user communities, their needs for information provided by the System, and the System's effectiveness in dissemination information to end-user communities and to the general public; and

(d) any other purpose identified by the Under Secretary of Commerce for Oceans and Atmosphere or the Interagency Ocean Observation Committee.

The meeting will be open to public participation with a 15-minute public comment period on October 2, 2014, from 3:45 p.m. to 4:00 p.m. and on October 3, 2014, from 2:30 p.m. to 2:45 p.m. (Check agenda on Web site to confirm time.) The Committee expects that public statements presented at its meetings will not be repetitive of previously submitted verbal or written statements. In general, each individual or group making a verbal presentation will be limited to a total time of three (3) minutes. Written comments should be received by the Alternate Designated Federal Official by September 19, 2014 to provide sufficient time for Committee review. Written comments received after September 19, 2014 will be distributed to the Committee, but may not be reviewed prior to the meeting date. Seats will be available on a first-come, first-served basis.

Matters To Be Considered: The meeting will focus on two strategic themes: finalizing the guiding principles for the business model for U.S. IOOS and beginning a dialog on the next set of recommendations. The agenda is subject to change. The latest version will be posted at *http://www.ioos.gov/advisorycommittee.*

Special Accommodations: These meetings are physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Jessica Snowden, Alternate Designated Federal Official at 301–427–2453 by September 15, 2014.

Dated: September 2, 2014.

Donna Rivelli,

NOAA National Ocean Service, Deputy, Chief Financial Officer.

[FR Doc. 2014–21537 Filed 9–9–14; 8:45 am]

BILLING CODE P

COMMODITY FUTURES TRADING COMMISSION

Agency Information Collection Activities Under OMB Review

AGENCY: Commodity Futures Trading Commission.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act, this notice announces that the Information Collection Request (ICR) abstracted below has been forwarded to the Office of Management and Budget (OMB) for review and comment. The ICR describes the nature of the information collection and its expected costs and burden.

DATES: Comments must be submitted on or before October 10, 2014.

ADDRESSES: Comments may be submitted to OMB within 30 days of the notice's publication. Comments, identified by ''Whistleblower Provision and Updated Form TCR (OMB Control No. 3038–0082),'' should be mailed to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for the Commodity Futures Trading Commission, 725 17th Street NW., Washington, DC 20503.

Comments may be also be submitted, regarding the burden estimated or any other aspect of the information collection, including suggestions for reducing the burden, identified by ''Whistleblower Provision and Updated Form TCR (OMB Control No. 3038–0082),'' by any of the following methods:

- Agency Web site, via its Comments Online process: *http://comments.cftc.gov.* Follow the instructions for submitting comments through the Web site.
- Mail: Send to Christopher J. Kirkpatrick, Secretary of the Commission, Commodity Futures Trading Commission, 1155 21st Street NW., Washington, DC 20581.
- Hand Delivery/Courier: Same as Mail, above.
- Federal eRulemaking Portal: *http://www.regulations.gov/search/index.jsp.* Follow the instructions for submitting comments.

All comments must be submitted in English, or if not, accompanied by an English translation. Comments will be posted as received to *http://www.cftc.gov.* You should submit only information that you wish to make available publicly. If you wish the Commission to consider information that is exempt from disclosure under the Freedom of Information Act, a petition for confidential treatment of the exempt information may be submitted according to the procedures set forth in section 145.9 of the Commission's regulations.[1]

The Commission reserves the right, but shall have no obligation, to review, pre-screen, filter, redact, refuse or remove any or all of your submission from *www.cftc.gov* that it may deem to be inappropriate for publication, such as obscene language. All submissions that have been redacted or removed that contain comments on the merits of the rulemaking will be retained in the public comment file and will be considered as required under the Administrative Procedure Act and other applicable laws, and may be accessible under the Freedom of Information Act.

FOR FURTHER INFORMATION CONTACT: Eduardo Martinez, Attorney, Whistleblower Office, Commodity Futures Trading Commission, (202) 418–5979; email: *emartinez@cftc.gov,* and refer to OMB Control No. 3038–0082. This contact can also provide a copy of the ICR.

SUPPLEMENTARY INFORMATION:

Title: ''Whistleblower Provision and Updated Form TCR,'' (OMB Control No. 3038–0082). This is a request for extension of a currently approved information collection.

Abstract: 17 CFR 165.3(a) requires the submission of information to the Commission on a Form TCR. The Form TCR, titled ''Tip, Complaint, or Referral,'' and the instructions thereto, are designed to capture basic identifying information about a complainant and elicit sufficient information to determine whether the conduct alleged

[1] Commission regulations referred to herein are found at 17 CFR Ch. I (2014).

suggests a violation of the Commodity Exchange Act. The Commission has updated the questions asked on the Form TCR to be more specific and detailed.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the CFTC's regulations were published on December 30, 1981. *See* 46 FR 63035 (Dec. 30, 1981). The **Federal Register** notice with a 60-day comment period soliciting comments on this collection of information was published on July 7, 2014 (79 FR 38283).

No relevant comments have been received.

Burden Statement: The respondent burden for this collection is estimated to be 0.5 hours per response.

Respondents/Affected Entities: Individuals.

Estimated number of respondents: 250 per year.

Estimated total annual burden on respondents: 125 hours.

Frequency of collection: Once.

Authority: 44 U.S.C. 3501 *et seq.*

Dated: September 5, 2014.

Christopher J. Kirkpatrick,

Secretary of the Commission.

[FR Doc. 2014–21544 Filed 9–9–14; 8:45 am]

BILLING CODE 6351–01–P

DEPARTMENT OF EDUCATION

[Docket No. ED–2014–ICCD–0094]

Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request; Annual Performance Report for the State Grant for Assistive Technology Program

AGENCY: Office of Special Education and Rehabilitative Services (OSERS), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a revision of an existing information collection.

DATES: Interested persons are invited to submit comments on or before October 10, 2014.

ADDRESSES: Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting Docket ID number ED–2014–ICCD–0094 or via postal mail, commercial delivery, or hand delivery. If the regulations.gov site is not available to the public for any reason, ED will temporarily accept comments at *ICDocketMgr@ed.gov. Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted; ED will ONLY accept comments during the comment period in this mailbox when the regulations.gov site is not available.* Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance Division, U.S. Department of Education, 400 Maryland Avenue SW., LBJ, Mailstop L–OM–2–2E319, Room 2E105, Washington, DC 20202.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Robert Groenendaal, 202–245–7393.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: Annual Performance Report for the State Grant for Assistive Technology Program.

OMB Control Number: 1820–0572.

Type of Review: A revision of an existing information collection.

Respondents/Affected Public: Individuals or Households, State, Local, or Tribal Governments.

Total Estimated Number of Annual Responses: 190,456.

Total Estimated Number of Annual Burden Hours: 23,772.

Abstract: Section 4 of the Assistive Technology (AT) Act of 1998, as amended, requires states to submit annual data reports. This instrument helps the grantees report annual data related to the required activities implemented by the State under the AT Act. This data is used by Rehabilitation Services Administration (RSA) in order to prepare required annual reports to Congress. RSA calls this data collection an Annual Progress Report.

Dated: September 5, 2014.

Stephanie Valentine,

Acting Director, Information Collection Clearance Division, Privacy, Information and Records Management Services, Office of Management.

[FR Doc. 2014–21535 Filed 9–9–14; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF EDUCATION

[Docket No. ED–2014–ICCD–0103]

Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request; Early Childhood Longitudinal Study Kindergarten Class of 2010–11 (ECLS–K:2011) Spring Third-Grade National Collection, Fourth-Grade Recruitment, and Fifth-Grade Tracking

AGENCY: Institute if Education Sciences/National Center for Education Statistics (IES), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a revision of an existing information collection.

DATES: Interested persons are invited to submit comments on or before October 10, 2014.

ADDRESSES: Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting Docket ID number ED–2014–ICCD–0103 or via postal mail, commercial delivery, or hand delivery. If the regulations.gov site is not available to the public for any reason, ED will temporarily accept comments at *ICDocketMgr@ed.gov. Please note that comments submitted by fax or email and those submitted after*

the comment period will not be accepted; ED will ONLY accept comments during the comment period in this mailbox when the regulations.gov site is not available. Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance Division, U.S. Department of Education, 400 Maryland Avenue SW., LBJ, Mailstop L–OM–2–2E319, Room 2E103, Washington, DC 20202.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Kashka Kubzdela, 202–502–7411.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: Early Childhood Longitudinal Study Kindergarten Class of 2010–11 (ECLS–K:2011) Spring Third-Grade National Collection, Fourth-Grade Recruitment, and Fifth-Grade Tracking.

OMB Control Number: 1850–0750.

Type of Review: A revision of an existing information collection.

Respondents/Affected Public: Individuals and Households.

Total Estimated Number of Annual Responses: 140,208.

Total Estimated Number of Annual Burden Hours: 49,507.

Abstract: The Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS–K:2011), sponsored by the National Center for Education Statistics (NCES) within the Institute of Education Sciences (IES) of the U.S. Department of Education (ED), is a survey that focuses on children's early school experiences beginning with kindergarten and continuing through the fifth grade. It includes the collection of data from parents, teachers, school administrators, and nonparental care providers, as well as direct child assessments. Like its sister study, the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS–K), the ECLS–K:2011 is exceptionally broad in its scope and coverage of child development, early learning, and school progress, drawing together information from multiple sources to provide rich data about the population of children who were kindergartners in the 2010–11 school year. This submission requests OMBs clearance for (1) a spring 2015 fourth-grade national data collection and (2) recruitment for the spring 2016 fifth-grade data collection.

Dated: September 4, 2014.

Kate Mullan,

Acting Director, Information Collection Clearance Division, Privacy, Information and Records Management Services, Office of Management.

[FR Doc. 2014–21472 Filed 9–9–14; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2014–ICCD–0095]

Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request; Studies of Rural Education Achievement Program (REAP) Grantees

AGENCY: Office of Planning Evaluation and Policy Development (OPEPD), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a new information collection.

DATES: Interested persons are invited to submit comments on or before October 10, 2014.

ADDRESSES: Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting Docket ID number ED–2014–ICCD–0095 or via postal mail, commercial delivery, or hand delivery. If the regulations.gov site is not available to the public for any reason, ED will temporarily accept comments at *ICDocketMgr@ed.gov. Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted; ED will ONLY accept comments during the comment period in this mailbox when the regulations.gov site is not available.* Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance Division, U.S. Department of Education, 400 Maryland Avenue SW., LBJ, Mailstop L–OM–2–2E319, Room 2E105, Washington, DC 20202.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Andrew Abrams, 202–401–1232.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: Studies of Rural Education Achievement Program (REAP) Grantees.

OMB Control Number: 1875—NEW.

Type of Review: A new information collection.

Respondents/Affected Public: State, Local, or Tribal Governments.

Total Estimated Number of Annual Responses: 310.

Total Estimated Number of Annual Burden Hours: 168.

Abstract: This request for OMB review asks for clearance to collect data through surveys and individual interviews that will provide a descriptive report on how grantees and subgrantees of the U.S. Department of Educations (the Department) Rural Education Achievement Program (REAP) experience various aspects of the program, including eligibility, planning, and use of funds, as well as any technical assistance needs regarding both administrative and programmatic issues. Pending clearance, the research team will administer a survey of a nationally representative sample of the approximately 6,000 total Small, Rural School Achievement (SRSA) grantees and Rural and Low-Income Schools (RLIS) subgrantees, telephone interviews of a purposively selected sample of 30 district administrators in SRSA grantee districts and RLIS subgrantee districts, and telephone interviews of REAP coordinators in all states receiving REAP funds.

Dated: September 4, 2014.

Stephanie Valentine,

Acting Director, Information Collection Clearance Division, Privacy, Information and Records Management Services, Office of Management.

[FR Doc. 2014–21426 Filed 9–9–14; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #1

Take notice that the Commission received the following electric corporate filings:

Docket Numbers: EC14–112–000.

Applicants: PPL Corporation, RJS Power Holdings LLC.

Description: Supplement to July 15, 2014 Application for Approval Pursuant to Section 203 of the Federal Power Act of PPL Corporation and RJS Power Holdings LLC.

Filed Date: 8/29/14.

Accession Number: 20140829–5221.

Comments Due: 5 p.m. ET 9/19/14.

Docket Numbers: EC14–130–000.

Applicants: Border Energy Electric Services, Inc., Interstate Gas Supply, Inc.

Description: Application for Authorization of Disposition of Jurisdictional Facilities of Border Energy Electric Services, Inc., and Interstate Gas Supply, Inc.

Filed Date: 8/29/14.

Accession Number: 20140829–5228.

Comments Due: 5 p.m. ET 9/19/14.

Docket Numbers: EC14–131–000.

Applicants: SG2 Imperial Valley LLC.

Description: Application for Expedited Approval under Section 203 of the Federal Power Act and Request for Confidential Treatment and Waivers of SG2 Imperial Valley LLC.

Filed Date: 9/2/14.

Accession Number: 20140902–5065.

Comments Due: 5 p.m. ET 9/23/14.

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER12–1923–001; ER10–2334–002; ER12–1924–001; ER11–3406–002; ER11–3407–002; ER10–2897–004; ER12–1865–003; ER12–1925–001.

Applicants: Big Savage, LLC, Big Sky Wind, LLC, EverPower Commercial Services LLC, Highland North LLC, Howard Wind LLC, Krayn Wind LLC, Mustang Hills, LLC, Patton Wind Farm, LLC.

Description: Supplement to June 5, 2014 Triennial Market Power Update for the EverPower Companies.

Filed Date: 8/29/14.

Accession Number: 20140829–5175.

Comments Due: 5 p.m. ET 9/12/14.

Docket Numbers: ER12–1923–002; ER10–2334–003; ER12–1924–002; ER11–3406–003; ER11–3407–003; ER10–2897–005; ER12–1865–004; ER12–1925–002.

Applicants: Big Savage, LLC, Big Sky Wind, LLC, EverPower Commercial Services LLC, Highland North LLC, Howard Wind LLC, Krayn Wind LLC, Mustang Hills, LLC, Patton Wind Farm, LLC.

Description: Supplement to June 5, 2014 Notification of Change in Status by the EverPower Companies under ER12–1923, et al.

Filed Date: 8/29/14.

Accession Number: 20140829–5222.

Comments Due: 5 p.m. ET 9/12/14.

Docket Numbers: ER14–2750–000.

Applicants: New York State Electric & Gas Corporation.

Description: § 205(d) rate filing per 35.13(a)(2)(iii): Rate Schedule FERC No. 87 Supplement to be effective 9/1/2014.

Filed Date: 8/29/14.

Accession Number: 20140829–5212.

Comments Due: 5 p.m. ET 9/19/14.

Docket Numbers: ER14–2751–000.

Applicants: Xcel Energy Southwest Transmission Company, LLC.

Description: Application for Transmission Formula Rate of Xcel Energy Southwest Transmission Company, LLC.

Filed Date: 8/29/14.

Accession Number: 20140829–5214.

Comments Due: 5 p.m. ET 9/19/14.

Docket Numbers: ER14–2752–000.

Applicants: Xcel Energy Transmission Development Company, LLC.

Description: Application for Transmission Formula Rate of Xcel Energy Transmission Development Company, LLC.

Filed Date: 8/29/14.

Accession Number: 20140829–5218.

Comments Due: 5 p.m. ET 9/19/14.

The filings are accessible in the Commission's eLibrary system by clicking on the links or querying the docket number.

Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: *http://www.ferc.gov/docs-filing/efiling/filing-req.pdf.* For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: September 2, 2014.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2014–21542 Filed 9–9–14; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #2

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER12–348–001.

Applicants: Mercuria Energy America, Inc.

Description: Compliance filing per 35: MEAI Electric Tariff to be effective 9/3/2014.

Filed Date: 9/2/14.

Accession Number: 20140902–5115.

Comments Due: 5 p.m. ET 9/23/14.

Docket Numbers: ER14–639–001.

Applicants: California Independent System Operator Corporation.

Description: Compliance filing per 35: 2014–09–02_Order784SecondCompliance to be effective 9/2/2014.

Filed Date: 9/2/14.

Accession Number: 20140902–5112.

Comments Due: 5 p.m. ET 9/23/14.

Docket Numbers: ER14–836–001.

Applicants: Midcontinent Independent System Operator, Inc.

Description: Report Filing: 2014–09–02_SA 2622 Courtenay-OTP E&PJ262–J263_Response to be effective N/A.

Filed Date: 9/2/14.

Accession Number: 20140902–5179.

Comments Due: 5 p.m. ET 9/23/14.

Docket Numbers: ER14–1243–004.

Applicants: Midcontinent Independent System Operator, Inc.

Description: Protest of Integrys Energy Services, Inc.

Filed Date: 9/2/14.

Accession Number: 20140902–5117.

Comments Due: 5 p.m. ET 9/23/14.

Docket Numbers: ER14–2753–000.

Applicants: Southwest Power Pool, Inc.

Description: § 205(d) rate filing per 35.13(a)(2)(iii): 2028R9 Sunflower Electric Power Corporation NITSA NOA to be effective 8/1/2014.

Filed Date: 9/2/14.

Accession Number: 20140902–5111.

Comments Due: 5 p.m. ET 9/23/14.

Docket Numbers: ER14–2754–000.

Applicants: Midcontinent Independent System Operator, Inc.

Description: § 205(d) rate filing per 35.13(a)(2)(iii): 2014–09–02_SA 2289 Ameren-Hoopeston Wind 4th Revised H094 GIA to be effective 9/3/2014.

Filed Date: 9/2/14.

Accession Number: 20140902–5113.

Comments Due: 5 p.m. ET 9/23/14.

The filings are accessible in the Commission's eLibrary system by clicking on the links or querying the docket number.

Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: *http://www.ferc.gov/docs-filing/efiling/filing-req.pdf.* For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: September 2, 2014.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2014–21543 Filed 9–9–14; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER14–2759–000]

R.R. Donnelley & Sons Company; Supplemental Notice That Initial Market-Based Rate Filing Includes Request for Blanket Section 204 Authorization

This is a supplemental notice in the above-referenced proceeding, of R.R. Donnelley & Sons Company's application for market-based rate authority, with an accompanying rate schedule, noting that such application includes a request for blanket authorization, under 18 CFR Part 34, of future issuances of securities and assumptions of liability.

Any person desiring to intervene or to protest should file with the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and *Procedure* (18 CFR 385.211 and 385.214). Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant.

Notice is hereby given that the deadline for filing protests with regard to the applicant's request for blanket authorization, under 18 CFR Part 34, of future issuances of securities and assumptions of liability is September 23, 2014.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 5 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

The filings in the above-referenced proceeding(s) are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: September 3, 2014.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2014–21545 Filed 9–9–14; 8:45 am]

BILLING CODE 6717–01–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OW–2011–0150; FRL–9916–37–OW]

Proposed Information Collection Request; Comment Request; Final National Pollutant Discharge Elimination System (NPDES) Small Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels Less Than 79 Feet

AGENCY: Environmental Protection Agency.

ACTION: Notice.

SUMMARY: The Environmental Protection Agency (EPA) is planning to submit an information collection request (ICR), ''Final National Pollutant Discharge Elimination System (NPDES) Small Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels Less than 79 Feet'' (EPA ICR No. 2504.01, OMB Control No. 2040—NEW) to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act (PRA). Before doing so, EPA is soliciting public comments on specific aspects of the proposed information collection as described below. This is a request for approval of a new collection. An Agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

DATES: Comments must be submitted on or before November 10, 2014.

ADDRESSES: Submit your comments, referencing Docket ID No. EPA–HQ–OW–2011–1050, online using *www.regulations.gov* (our preferred method) or by mail to: EPA Docket Center, Environmental Protection Agency, Mail Code 28221T, 1200 Pennsylvania Ave. NW., Washington, DC 20460.

EPA's policy is that all comments received will be included in the public docket without change including any personal information provided, unless the comment includes profanity, threats, information claimed to be Confidential

Business Information (CBI) or other information whose disclosure is restricted by statute.

FOR FURTHER INFORMATION CONTACT: Jack Faulk, Water Permits Division, Office of Water (4203M), Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460; telephone number: 202–564–0768; email address: *faulk.jack@epa.gov.*

SUPPLEMENTARY INFORMATION:

Supporting documents which explain in detail the information that the EPA will be collecting are available in the public docket for this ICR. The docket can be viewed online at *www.regulations.gov* or in person at the EPA Docket Center, WJC West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The telephone number for the Docket Center is 202–566–1744. For additional information about EPA's public docket, visit *http://www.epa.gov/dockets.*

Pursuant to section 3506(c)(2)(A) of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), EPA is soliciting comments and information to enable it to: (i) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the Agency, including whether the information will have practical utility; (ii) evaluate the accuracy of the Agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (iii) enhance the quality, utility, and clarity of the information to be collected; and (iv) minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses. EPA will consider the comments received and amend the ICR as appropriate. The final ICR package will then be submitted to OMB for review and approval. At that time, EPA will issue another **Federal Register** notice to announce the submission of the ICR to OMB and the opportunity to submit additional comments to OMB.

Abstract: In December 2003, a long-standing exclusion of discharges incidental to the normal operation of vessels from the NPDES program became the subject of a lawsuit in the U.S. District Court for the Northern District of California (*Northwest Envtl. Advocates et al.* v. *United States EPA,* 2005 U.S. Dist. LEXIS 5373 (N.D. Cal. 2005). The District Court issued a final order in September 2006 providing that the blanket exemption for discharges incidental to the normal operation of a vessel, contained in 40 CFR § 122.3(a), shall be vacated as of September 30, 2008. On July 23, 2008, the U.S. Ninth Circuit Court of Appeals upheld the District Court's decision. This meant that, effective December 19, 2008, except for those vessels exempted from NPDES permitting by congressional legislation, discharges incidental to the normal operation of vessels that were excluded from NPDES permitting by 40 CFR § 122.3(a) were subject to the Clean Water Act (CWA) section 301 prohibition against discharging, unless authorized by an NPDES permit.

In late July 2008, Congress enacted two pieces of legislation to exempt discharges incidental to the normal operation of certain types of vessels from the need to obtain an NPDES permit.

The first of these, entitled the Clean Boating Act of 2008, amends the CWA to provide that discharges incidental to the normal operation of recreational vessels are not subject to NPDES permitting, and instead, creates a new regulatory regime to be implemented by EPA and the U.S. Coast Guard under the new 312(o) of the CWA. S. 2766, Pub. L. 110–188 (July 29, 2008).

The second piece of legislation provided for a temporary moratorium on NPDES permitting for discharges, except for ballast water, subject to the 40 CFR § 122.3(a) exclusion from (1) commercial fishing vessels (as defined in 46 U.S.C. § 2101 and regardless of size) and (2) from those other non-recreational vessels less than 79 feet in length. S. 3298, Pub. L/10–299 (July 31, 2008). The statute's NPDES permitting moratorium ran for a two-year period beginning on its July 31, 2008 enactment date, during which time EPA was to study the relevant discharges and submit a report to Congress. EPA finalized this Report to Congress, entitled ''Study of Discharges Incidental to Normal Operation of Commercial Fishing Vessels and Other Non-Recreational Vessels Less Than 79 Feet'' in August 2010 (EPA, 2010), a copy of which is available on EPA's Web site at *http://www.epa.gov/npdes/vessels.* The moratorium was subsequently extended to December 18, 2013 by P.L. 111–215 and further extended to December 18, 2014 by the Coast Guard and Maritime Transportation Act of 2012 (H.R. 2838) signed on December 20, 2012 (Pub. L. 112–213).

On December 8, 2011, EPA published the draft permit in the **Federal Register** and the Agency published the final Small Vessel General Permit (sVGP) also in today's **Federal Register** to ensure that NPDES permit coverage is available for those vessels currently excluded from permitting by that moratorium.

This ICR calculates the burden and costs associated with the NPDES program, identifies the types of activities regulated under the NPDES program, and describes the roles and responsibilities of the Agency associated with the sVGP.

Form numbers: None.

Respondents/affected entities: Entities potentially affected by this action are owners/operators of commercial fishing vessels and non-recreational, non-military vessels less than 79 feet in length that are operating as a means of transportation with incidental discharges to waters of the United States.

Respondent's obligation to respond: required for owners/operators needing to obtain or retain the benefit of permit coverage under the sVGP.

Estimated number of respondents: 137,739 (total).

Frequency of response: Once, annually as needed, quarterly.

Total estimated burden: 138,597 hours (per year). Burden is defined at 5 CFR 1320.03(b).

T*otal estimated cost:* $5,064,298 (per year), includes $0 annualized capital or operation & maintenance costs.

Changes in estimates: This is a new information collection.

Dated: August 29, 2014.

Sheila E. Frace,

Acting Director, Office of Wastewater Management.

[FR Doc. 2014–21402 Filed 9–9–14; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OW–2011–0150; FRL–9916–36–OW]

Final National Pollutant Discharge Elimination System (NPDES) Small Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels Less Than 79 Feet

AGENCY: Environmental Protection Agency.

ACTION: Notice of final permit issuance.

SUMMARY: Environmental Protection Agency (EPA) Regions 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 are finalizing the NPDES Small Vessel General Permit (sVGP) to authorize discharges incidental to the normal operation of non-military and non-recreational vessels less than 79 feet in length. EPA is finalizing the sVGP, which has an effective date of

December 19, 2014, to authorize discharges from vessels less than 79 feet in length, because the law imposing a moratorium against NPDES permitting of these discharges expires on December 18, 2014. That law generally provides that no NPDES permits shall be required for discharges (except discharges of ballast water) incidental to the normal operation of vessels less than 79 feet and all commercial fishing vessels.

EPA provided notice of the availability of the draft permit and accompanying fact sheet for public comment in the **Federal Register** on December 8, 2011.

DATES: This permit is effective on December 19, 2014.

In accordance with 40 CFR part 23, this permit shall be considered issued for the purpose of judicial review on the day 2 weeks after **Federal Register** publication. Under section 509(b) of the Clean Water Act, judicial review of this general permit can be had by filing a petition for review in the United States Court of Appeals within 120 days after the permit is considered issued for purposes of judicial review. Under section 509(b)(2) of the Clean Water Act, the requirements in this permit may not be challenged later in civil or criminal proceedings to enforce these requirements. In addition, this permit may not be challenged in other agency proceedings. This permit also provides additional dates for compliance with the terms of the permit.

FOR FURTHER INFORMATION CONTACT: For further information on the sVGP, contact Jack Faulk at (202) 564–0768 or Ryan Albert at (202) 564–0763, or at EPA Headquarters, Office of Water, Office of Wastewater Management, Mail Code 4203M, 1200 Pennsylvania Ave, NW., Washington DC 20460; or email at *vgp@epa.gov.*

SUPPLEMENTARY INFORMATION: This supplementary information is organized as follows:

Table of Contents

I. General Information
A. Does this action apply to me?
B. How can I get copies of these documents and other related information?
C. Public Outreach: Public Hearings and Public Meetings, Web Casts
D. Who are the EPA regional contacts for this permit?
II. Statutory and Regulatory History
III. Scope and Applicability of the 2014 sVGP
A. CWA Section 401 Certification and Coastal Zone Management Act
B. Geographic Coverage of sVGP
C. Categories of Vessels Covered Under the sVGP
D. Summary of the sVGP
E. Summary of Significant Changes from the Proposed sVGP
IV. Analysis of Economic Impacts of sVGP
A. Costs of the sVGP
B. Benefits of the sVGP
V. Executive Orders 12866 and 13563

I. General Information

A. Does this action apply to me?

This action applies to vessels less than 79 feet in length operating in a capacity as a means of transportation that have discharges incidental to their normal operation into waters subject to this permit, except recreational vessels as defined in Clean Water Act (CWA) section 502(25) and vessels of the Armed Forces as defined in CWA section 312(a)(14). Affected vessels are henceforth referred to as non-military, non-recreational vessels. Unless otherwise excluded from coverage by Part 5 of the sVGP, the waters subject to this permit are waters of the U.S. as defined in 40 CFR 122.2. That provision defines ''waters of the U.S.'' as certain inland waters and the territorial sea, which extends three miles from the baseline. More specifically, CWA section 502(8) defines ''territorial seas'' as ''the belt of the seas measured from the line of the ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.'' Note that the Clean Water Act does not require NPDES permits for vessels or other floating craft operating as a means of transportation beyond the territorial seas, i.e., in the contiguous zone or ocean as defined by the CWA sections 502(9), (10). *See* CWA section 502(12) and 40 CFR 122.2 (definition of ''discharge of a pollutant''). This permit, therefore, does not apply in such waters.

Non-military, non-recreational vessels greater than 79 feet in length operating in a capacity as a means of transportation that need NPDES coverage for their incidental discharges will generally be covered under the VGP (78 FR 21938, April 12, 2013). Similarly situated vessels less than 79 feet in length may be covered under the VGP, or may instead opt for coverage under the sVGP. Commercial fishing vessels greater than 79 feet in length are not eligible for coverage under the sVGP but can be covered under the VGP should they need to do so (e.g., after expiration of the moratorium from permit requirements for these vessels).

B. How can I get copies of these documents and other related information?

1. *Docket.* EPA has established an official public docket for this action: Docket ID No. EPA–HQ–OW–2011–0150. The official public docket is the collection of materials, including the administrative record required by 40 CFR 124.18, for the final permit. It is available for public viewing at the Water Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460. Although all documents in the docket are listed in an index, some information may not be publicly available, *i.e.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Publicly available docket materials are available electronically through *http://www.regulations.gov* and in hard copy at the EPA Docket Center Public Reading Room, open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744 and the telephone number for the Water Docket is (202) 566–2426.

2. *Electronic Access.* You may access this **Federal Register** document electronically at *http://www.federalregister.gov.*

An electronic version of the public docket is available through the Federal Docket Management System (FDMS) found at *http://www.regulations.gov.* You may use the FDMS to view public comments, access the index listing of the contents of the official public docket, and access those documents in the public docket that are available electronically. Once at the Web site, enter the appropriate Docket ID No. in the ''Search'' box to view the docket.

Certain types of information will not be placed in the EPA dockets. Information claimed as CBI and other information whose disclosure is restricted by statute, which is not included in the official public docket, will not be available for public viewing in EPA's electronic public docket. EPA policy is that copyrighted material will not be placed in EPA's electronic public docket but will be available only in printed, paper form in the official public docket. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility identified in this section.

C. Public Outreach: Public Hearings and Public Meetings, Web Casts

Because EPA anticipated a significant degree of public interest in the draft sVGP and the draft VGP, EPA held a public hearing on Wednesday January 11, 2012, to receive public comment and answer questions concerning the draft permits. The hearing was held at EPA

East Room 1153, 1201 Constitution Ave. NW., Washington DC 20460. In addition, EPA held a public meeting on Monday January 23, 2012, at the Ralph H. Metcalfe Federal Building, Room 331, 77 West Jackson Blvd., Chicago, IL 60604. The purpose of those meetings was to present the proposed requirements of these two draft general permits and the basis for those requirements, as well as to answer questions concerning the draft permits. The public meetings and public hearing were attended by a wide variety of stakeholders including representatives from industry, government agencies, and environmental organizations. In addition, EPA held a webcast on January 19, 2012, and two online Question and Answer sessions on January 31 and February 7, 2012, to provide information on the proposed permits and to answer questions from interested parties that were unable to attend the public meetings or hearing.

D. Who are the EPA regional contacts for this permit?

For EPA Region 1, contact John Nagle at tel.: (617) 918–1054; or email at *nagle.john@epa.gov;* or at US EPA, Region 1, New England/Office of Ecosystem Protection, 5 Post Office Square, Suite 100, Mail Code: OEP 06–1, Boston, MA 02109–3912.

For EPA Region 2 in New York and New Jersey, contact Patricia Pechko at tel.: (212) 637–3796; or email at *pechko.patricia@epa.gov;* or at US EPA, Region 2, 290 Broadway, 24th Floor, New York, NY 10007–1866 or for EPA Region 2 in Puerto Rico and the Virgin Islands, contact Sergio Bosques at tel.: (787) 977–5838; or email at *bosques.sergio@epa.gov;* or at US EPA Region 2, Caribbean Environmental Protection Division, City View Plaza II—Suite 7000, 48 Rd. 165 Km 1.2, Guaynabo, Puerto Rico 00968–8069.

For EPA Region 3, contact Mark Smith at tel.: (215) 814–3105; or email at *smith.mark@epa.gov;* or at US EPA, Region 3, 1650 Arch St., Mail Code: 3WP41, Philadelphia, PA 19103–2029.

For EPA Region 4, contact Karrie-Jo Robinson at tel.: (404) 562–9308; or email at *robinson.karrie-jo@epa.gov;* or Kip Tyler at 404–562–9294 or email at *tyler.kip@epa.gov;* or at US EPA, Region 4/Water Permits Division, Atlanta Federal Center, 61 Forsyth St. SW., Atlanta, GA 30303–3104.

For EPA Region 5, contact Sean Ramach at tel.: (312) 886–5284; or email at *ramach.sean@epa.gov;* or US EPA, Region 5, 77 W Jackson Blvd., Mail Code: WN16J, Chicago, IL 60604–3507.

For EPA Region 6, contact Jenelle Hill at tel.: (214) 665–9737; or email at *hill.jenelle@epa.gov;* or at US EPA, Region 6, 1445 Ross Ave., Suite 1200, Dallas, TX 75202–2733.

For EPA Region 7, contact Alex Owutaka at tel.: (913) 551–7584; or email at *owutaka.alex@epa.gov;* or at US EPA, Region 7, 11201 Renner Boulevard, Lenexa, Kansas 66219.

For EPA Region 8, contact Lisa Luebke at tel.: (303) 312–6256; or email at *luebke.lisa@epa.gov;* or at US EPA, Region 8, 1595 Wynkoop St., Mail Code: 8P–W–WW, Denver, CO 80202.

For EPA Region 9, contact Eugene Bromley at tel.: (415) 972–3510; or email at *bromley.eugene@epa.gov;* or at US EPA, Region 9, 75 Hawthorne St., San Francisco, CA 94105–3901.

For EPA Region 10, contact Cindi Godsey at tel.: (206) 553–1676; or email at *godsey.cindi@epa.gov;* or at US EPA, Region 10, 1200 6th Avenue, Suite 900, Seattle, WA 98101.

II. Statutory and Regulatory History

The Clean Water Act (CWA) section 301(a) provides that ''the discharge of any pollutant by any person shall be unlawful'' unless the discharge is in compliance with certain other sections of the Act. 33 U.S.C. 1311(a). The CWA defines ''discharge of a pollutant'' as ''(A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.'' 33 U.S.C. 1362(12). A ''point source'' is a ''discernible, confined and discrete conveyance'' and includes a ''vessel or other floating craft.'' 33 U.S.C. 1362(14).

The term ''pollutant'' includes, among other things, ''garbage . . . chemical wastes . . . and industrial, municipal, and agricultural waste discharged into water.'' The Act's definition of ''pollutant'' specifically excludes ''sewage from vessels or a discharge incidental to the normal operation of a vessel of the Armed Forces'' within the meaning of CWA section 312. 33 U.S.C. 1362(6).

One way a person may discharge a pollutant without violating the CWA section 301 prohibition is by obtaining authorization to discharge (referred to herein as ''coverage'') under a CWA section 402 National Pollutant Discharge Elimination System (NPDES) permit (33 U.S.C. section 1342). Under CWA section 402(a), EPA may ''issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding section 1311(a)'' upon certain conditions required by the Act.

Historically, EPA had not required NPDES permits for discharges incidental to the normal operation of a vessel; however, on July 23, 2008, the United States Ninth Circuit Court of Appeals upheld a lower court decision that the Agency's approach to exclude these discharges from permitting exceeded the Agency's authority to do so under the Clean Water Act. *Northwest Envtl. Advocates et al.* v. *United States EPA,* 2006 U.S. Dist. LEXIS 69476 (N.D. Cal. 2006). This decision prompted EPA and Congress to take several actions. For larger vessels (i.e., greater than 79 feet in length), EPA issued the Vessel General Permit (VGP) in late 2008 to provide a mechanism for these vessels to comply with CWA permitting obligations. For smaller vessels and commercial fishing vessels, Congress enacted Public Law (Pub. L.) 110–299 to provide a two-year permitting moratorium to allow time for EPA to study discharges from these vessels and provide a Report to Congress (*''Study of Discharges Incidental to Normal Operation of Commercial Fishing Vessels and Other Non-Recreational Vessels Less Than 79 Feet,''* August 2010). Congress has subsequently extended the permitting moratorium for smaller vessels and commercial fishing vessels through December 18, 2014. (Pub. L. 111–215 and Pub. L. 112–213).

The Small Vessel General Permit (sVGP), as finalized, is a mechanism for EPA to provide coverage for discharges incidental to the normal operation of non-military and non-recreational vessels less than 79 feet in length once the discharge moratorium ends on December 18, 2014. All discharges incidental to the normal operation of a vessel less than 79 feet, when that vessel is operating in capacity as a means of transportation, are eligible for coverage under this permit.

EPA is issuing this permit in advance of the date permit coverage is required to give small vessel owners and operators time to read and prepare for these new permit requirements.

III. Scope and Applicability of the 2014 sVGP

A. CWA Section 401 Certification and Coastal Zone Management Act

EPA may not issue a permit authorizing discharges into the waters of a state until that state has granted certification under CWA section 401 or has waived its right to certify (or been deemed to have waived). 33 U.S.C. 1341(a)(1); 40 CFR 124.53(a). EPA gave each state, tribe, and territory as applicable over nine months to certify, well over the 60 day regulatory norm for NPDES permits. EPA found that this 401 certification had unusual circumstances

which warranted additional time (e.g., the permits regulate discharges of mobile point sources; they have broad applicability to the waters of every state and tribe in the country). If a state believed that any permit condition(s) more stringent than those contained in the draft permit were necessary to meet the applicable requirements of either the CWA or state law, the state had an opportunity to include those condition(s) in its certification. 40 CFR 124.53(e)(1). Twenty-three states and one Indian tribe provided such conditions in their certifications, and EPA has added them to the sVGP pursuant to CWA section 401(d). 33 U.S.C. 1341(d).

Similarly, EPA may not authorize discharges under a general permit into waters of a State if the State objects with EPA's National Consistency Determination, pursuant to the regulations implementing of the Coastal Zone Management Act (''CZMA''), specifically the regulations at 15 CFR 930.31(d) and 930.36(e). If the State coastal zone management agency objects to the general permit, then the general permit is not available for use by potential general permit users in that State unless the applicant who wants to use the general permit provides the State agency with the applicant's consistency determination and the State agency concurs. 15 CFR 930.31(d). The National Oceanic and Atmospheric Administration (NOAA) has explained that ''a State objection to a consistency determination for the issuance of a general permit would alter the form of CZMA compliance required, transforming the general permit into a series of case by case CZMA decisions and requiring an individual who wants to use the general permit to submit an individual consistency certification to the State agency in compliance with 15 CFR part 930.'' 71 FR 788, 793. No state objected to EPA's national consistency determination.

B. Geographic Coverage of sVGP

The sVGP is applicable to discharges incidental to the normal operation of a vessel (identified in Part 1.4 of the sVGP and section 3.6 of the sVGP fact sheet) into waters subject to these permits, which means ''waters of the U.S.'' as defined in 40 CFR 122.2, except as otherwise excluded by Part 5 of the permit. This includes the territorial seas, defined in section 502(8) of the CWA, extending to three miles from the baseline. *Pacific Legal Foundation* v. *Costle,* 586 F.2d 650, 655–656 (9th Cir. 1978); *Natural Resources Defense Council, Inc.* v. *U.S. EPA,* 863 F.2d 1420, 1435 (9th Cir. 1988).

The general permit will cover vessel discharges into the waters of the U.S. in all states and territories, regardless of whether a state is authorized to implement other aspects of the NPDES permit program within its jurisdiction, except as otherwise excluded by Part 5 of the sVGP. While, pursuant to CWA section 402(c), EPA typically is required to suspend permit issuance in authorized states, EPA may issue NPDES permits in authorized states for discharges incidental to the normal operation of a vessel because 402(c)(1) of the Clean Water Act prohibits EPA from issuing permits in authorized states only for ''those discharges subject to [the state's authorized] program.'' Discharges formerly excluded under 40 CFR 122.3 are not ''subject to'' authorized state programs. The vessel discharges that will be covered by the permit are discharges formerly excluded from NPDES permitting programs under 40 CFR 122.3. (See discussion of the vacatur of this exclusion above.) Therefore the discharges at issue are not considered a part of any currently authorized state NPDES program. See 40 CFR 123.1(i)(2) (where state programs have a greater scope of coverage than ''required'' under the federal program, that additional coverage is not part of the authorized program) and 40 CFR 123.1(g)(1) (authorized state programs are not required to prohibit point source discharges exempted under 40 CFR122.3).

C. Categories of Vessels Covered Under the sVGP

The sVGP applies to discharges incidental to the normal operation of non-military, non-recreational vessels less than 79 feet (unless a vessel elects for coverage under the VGP instead). The discharges eligible for coverage under this permit are those covered by the former exclusion in 40 CFR 122.3(a) prior to its vacatur.

D. Summary of the sVGP

EPA is today finalizing the sVGP for vessels less than 79 feet. EPA is finalizing the sVGP to provide coverage for vessels less than 79 feet in length because the Public Law (Pub. L.) 110–299 NPDES permitting moratorium (subsequently extended by Pub. L. 111–215 and Pub. L. 112–213) expires on December 18, 2014. EPA recognizes that small commercial vessels are different in operation than larger commercial vessels, generally have fewer discharge types, and that owner/operators of smaller vessels have particularized expertise and different resources available to manage their vessels than owner/operators of larger vessels. Hence, the sVGP is structured differently for this class of permittees. The sVGP will not require the vessel owner or operator to submit a Notice of Intent (NOI) to receive permit coverage. However, as with vessels not required to submit an NOI under the 2013 VGP, sVGP permittees are required to complete and keep a Permit Authorization and Record of Inspection (PARI) form onboard their vessel at all times (either in paper form or electronically). EPA also notes that vessel owner/operators of vessels less than 79 feet may choose whether they wish to seek coverage under the sVGP or the VGP. The PARI form, different forms for the sVGP and VGP, will document under which permit the owner/operator has sought coverage. The discharges covered in the sVGP are categorized into several broad categories listed in the permit and include: common-sense requirements for general discharges, fuel management, engine and oil control, solid and liquid waste management, deck washdown and runoff and above water line hull cleaning, vessel hull maintenance, graywater, fish hold effluent, ballast water, and overboard cooling water discharges. The sVGP includes non-numeric effluent limits in the form of Best Management Practices (BMPs), which were developed for these discharges because EPA has determined that it is infeasible to calculate numeric effluent limits at this time. The BMPs are designed to minimize the amount of any discharge produced as well as reduce the likelihood the discharge would enter a waterbody. EPA determined that for most small vessel discharges, minimization of pollutants in discharges can be achieved without using highly engineered, complex treatment systems. The sVGP also requires the owner/operator to inspect the vessel quarterly and take any corrective action, as necessary, and certify to such on the PARI form each year.

E. Summary of Significant Changes From the Proposed sVGP

EPA received comments from more than 70 commenters and based on those comments, the Agency made a number of revisions to the proposed permit as reflected in today's action. Significant changes from the proposed permit are summarized below and discussed in more detail in the permit fact sheet and in the response to comments document available in the docket (Docket ID No. EPA–HQ–OW–2011–0150 accessible at *http://www.regulations.gov*):

1. Removed the requirement that only vessels with less than 8 cubic meters of

ballast water are eligible for sVGP coverage.

2. Added a provision that, when feasible and safe, operators must use ballast water pumps instead of gravity draining to empty these tanks.

3. Defined what it means for an environmentally acceptable lubricant (EAL) to be ''technically infeasible'' for a vessel to use as the term is used in the permit describing when EALs may not be required and added the Swedish Standard SS 155434, Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) requirements, and EPA's Design for the Environment (DfE) to the list of acceptable labeling programs for EALs.

4. Clarified the prohibition against discharging unused bait overboard is specific to unused ''live'' bait from a different water body.

5. Added a condition that accumulated bilgewater must be removed, to the extent practicable, prior to transporting a vessel from one waterbody to another over land.

6. Added a prohibition against using any other organotin compound (beyond an absolute prohibition of tributyl tin) as a hull coating except in certain instances.

7. Clarified vessel hull cleaning should not be done within 90 days of painting, unless the vessel's hull is ''substantially fouled'' and that cleaning of hulls does not necessarily have to done using ''only soft sponges.''

8. Clarified that discharges from continuous ''once-through'' ambient water used for keeping the catch alive during transit is not subject to the permit requirements for discharging to shore-based facilities.

9. Clarified that ''periodic'' inspections of the engine and of the hull are to be done at least quarterly.

10. Clarified that any problems identified during the quarterly visual inspection or when inspecting fuel and hydraulic systems for damage or leaks must be corrected as soon as possible.

11. Added a condition that a quarterly inspection is not required on vessels that are not in the water for that quarter but this must be documented on the PARI form for that quarter.

12. Added definitions for several terms used in the permit, including ''ballast tank,'' ''ballast water,'' ''ballast water capacity,'' ''fish hold,'' ''minimally-toxic,'' ''minimally-toxic soaps, cleaners, and detergents,'' ''minimize,'' ''not bioaccumulative,'' ''seafood processing,'' and ''sewage from vessels.''

13. Added State and Tribal-specific requirements for 21 states and one tribe, pursuant to CWA § 401, to the permit.

IV. Analysis of Economic Impacts of sVGP

A. Costs of the sVGP

EPA estimates that between 115,000 and 138,000 vessels are potentially affected by the sVGP requirements. The establishments that own and operate vessels that will be subject to the sVGP are primarily associated with the fishing and water transportation industries, and with the oil and gas sector within the mining industry. To estimate the effect of sVGP requirements on an industry as a whole, EPA's analysis takes into account previous conditions and determines how the industry would act in the future in the absence of permit requirements. The baseline for this analysis is full industry compliance with existing federal and state regulations and with current industry practices or standards that exceed current regulations to the extent that they can be empirically observed. EPA estimated potential compliance costs to vessels associated with each of the practices and discharge categories identified in the sVGP, and with the inspection and recordkeeping requirements. Overall, EPA finds that sVGP requirements could result in total annual incremental costs for domestic vessels ranging between $7.1 million and $16.9 million (2010$) in the aggregate. This includes the paperwork burden costs and the incremental costs of all practices for applicable discharge categories. Per vessel incremental compliance costs average between $17 and $133 per year, depending on the number of applicable discharge categories and baseline practices.

To evaluate economic impacts of sVGP requirements on the affected industries, EPA performed a firm-level analysis. The firm-level analysis examines the impact of incremental costs per vessel to comply with the sVGP requirements on model firms that represent the financial conditions of ''typical'' businesses in each of the examined industry sectors. Since nearly all firms in the affected industries are small, the firm-level analysis focuses on assessment of impacts on small businesses. Further, given the distribution of revenue among firms in the affected industry sectors, which suggests a relatively greater potential for impacts to small firms in the commercial fishing industry, EPA looked more specifically at this industry when assessing the significance of impacts. To evaluate the potential impact of the sVGP on small entities, EPA used a cost-to-revenue test to evaluate the potential severity of economic impact on vessels and facilities owned by small entities. The test calculates annualized pre-tax compliance cost as a percentage of total revenues and uses a threshold of 1 and 3 percent to identify facilities that would be significantly impacted as a result of this permit. Because the impact of sVGP compliance is likely to be most significant for firms at the lower end of the firm size spectrum, the analysis focused on firms in the smallest revenue category in each industry. The results of this test provide estimated compliance cost thresholds that range between $331 and $680 per year (1%) and between $994 and $2,040 per year (3%), depending on the industry. The estimated sVGP compliance costs ($17 to $133 per year) are well below these thresholds. Based on this firm-level analysis using the average characteristics of firms in the lowest revenue category, EPA concludes that the sVGP will not have a significant economic impact on a substantial number of small entities based on information showing that firms would have lower compliance costs than would exceed the 1 percent cost-to-revenue threshold under high-end cost assumptions.

B. Benefits of the sVGP

Although EPA was unable to evaluate the expected benefits of the permit in dollar terms due to data limitations, the Agency collected and considered relevant information to enable qualitative consideration of ecological benefits and to assess the importance of the ecological gains from the revisions. EPA expects that reductions in vessel discharges will benefit society in two broad categories: (1) Enhanced water quality from reduced pollutant discharges and (2) reduced risk of invasive species introduction.

Because many of the nation's busiest ports are considered to be impaired by a variety of pollutants found in vessel discharges, reducing pollutant loadings from these discharges is expected to have benefits associated with the reduction of concentrations of nutrients, metals, oil, grease, and toxics in waters with high levels of vessel traffic.

V. Executive Orders 12866 and 13563

Under Executive Order 12866 (58 FR 51735 (October 4, 1993)) this action is a ''significant regulatory action.'' Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Orders 12866 and 13563 (76 FR 3821) and any changes made in response to OMB recommendations have been documented in the docket for this action.

Authority: Clean Water Act, 33 U.S.C. 1251 et seq.

Dated: August 21, 2014.

Deborah A. Szaro,

Deputy Regional Administrator, EPA Region 1.

Dated: August 21, 2014.

Joan Leary Matthews,

Director, Clean Water Division, EPA Region 2.

Dated: August 21, 2014.

Jose C. Font,

Director, Caribbean Environmental Protection Division, EPA Region 2.

Dated: August 21, 2014.

Jon M. Capacasa,

Director, Water Protection Division, EPA Region 3.

Dated: August 21, 2014.

Gail D. Mitchell,

Deputy Director, Water Protection Division, EPA Region 4.

Dated: August 21, 2014.

Timothy C. Henry,

Deputy Director, Water Division, EPA Region 5.

Dated: August 21, 2014.

James R. Brown,

Acting Deputy Director, Water Quality Protection Division, EPA Region 6.

Dated: August 21, 2014.

Karen Flournoy,

Director, Water, Wetlands, and Pesticides Division, EPA Region 7.

Dated: August 21, 2014.

Darcy O'Connor,

Acting Assistant Regional Administrator, Office of Partnerships and Regulatory Assistance, EPA Region 8.

Dated: August 21, 2014.

Nancy Woo,

Associate Director, Water Division, EPA Region 9.

Dated: August 21, 2014.

Daniel Opalski,

Director, Office of Water and Watersheds, EPA Region 10.

[FR Doc. 2014–21408 Filed 9–9–14; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPP–2014–0301; FRL–9915–79]

Availability of Stipulated Injunction in Northwest Center for Alternatives to Pesticides v. EPA litigation

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces to the public the availability of an Order (stipulated injunction) issued by the U.S. District Court for the Western District of Washington that, among other things, would reinstitute streamside no-spray buffer zones to protect endangered or threatened Pacific salmon and steelhead in California, Oregon, and Washington. The stipulated injunction, issued on August 15, 2014, settles litigation brought against EPA by the Northwest Center for Alternatives to Pesticides (NCAP) and others. These buffers were originally established by the same court in prior litigation brought against EPA by the Washington Toxics Coalition (WTC) and others. Like the original buffer zones, the limitations in this stipulated injunction are part of a court order but are not to be enforceable as labeling requirements under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The no-spray buffer zones will apply to the pesticides carbaryl, chlorpyrifos, diazinon, malathion, and methomyl. These buffers will remain in place until EPA implements any necessary protections for Pacific salmon and steelhead based on reinitiated consultations with the National Marine Fisheries Service (NMFS). EPA is reevaluating these pesticides in connection with its current FIFRA registration review process and the stipulated injunction reinstitutes the buffers in the interim.

FOR FURTHER INFORMATION CONTACT: Anita Pease, Environmental Fate and Effects Division (7507P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460–0001; telephone number: (703) 305–7695; email address: *pease.anita@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

You may be potentially affected by this action if you develop, manufacture, formulate, sell, and/or apply pesticide products, and if you are interested in the potential impacts of pesticide use on listed species. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Crop production (NAICS code 111).
- Animal production (NAICS code 112).
- Food manufacturing (NAICS code 311).
- Pesticide manufacturing (NAICS code 32532).
- Other stakeholders who have an interested in potential impacts of pesticides on listed species.

However, this action is directed to the public in general, and may be of particular interest to the parties in the NCAP v. EPA litigation, environmental organizations, professional and recreational fishing interests, other public interest groups, state regulatory partners, other interested federal agencies, pesticide registrants and pesticide users. Since other entities may also be interested, the Agency has not attempted to describe all the specific entities that may be affected by this action. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed under **FOR FURTHER INFORMATION CONTACT**.

C. How can I get copies of this document and other related information?

A copy of the stipulated injunction is available in the docket under docket identification (ID) number EPA–HQ–OPP–2014–0301.

II. Background

A. What action is the Agency taking?

EPA is announcing the availability of a stipulated injunction issued on August 15, 2014, by the U.S. District Court for the Western District of Washington that, among other things, reinstitutes streamside no-spray buffer zones to protect endangered and threatened Pacific salmon and steelhead in California, Oregon, and Washington. The stipulated injunction settles litigation brought against EPA by NCAP and others. Like the original buffer zones, the limitations in this injunction are part of a court order but are not enforceable as labeling requirements under FIFRA. To view the interactive map displaying the areas where the buffer zones apply, go to *www.epa.gov/espp/litstatus/wtc/uselimitation.htm.* The interactive map is expected to be updated no later than September 30, 2014 to include the current list of chemicals subject to the restrictions, enhanced spatial resolution, and the most recent geospatial data depicting stream reaches where the buffer zones apply. The no-spray buffer zones apply to the pesticides carbaryl, chlorpyrifos, diazinon, malathion, and methomyl. These buffer zones will remain in place until EPA implements any necessary protections for Pacific salmon and steelhead based on reinitiated consultations with NMFS. EPA is reevaluating these pesticides in connection with its current FIFRA

registration review process and the stipulated injunction reinstates the buffers in the interim.

The no-spray buffers in the proposed stipulated injunction extend 300 feet from salmon supporting waters for aerial applications of the five pesticides and 60 feet for ground applications.

Under this settlement agreement, there are three relevant use exemptions carried over from the WTC case:

1. Public health vector control administered by public entities, such as the use of malathion by local governments for mosquito control.

2. NMFS-authorized programs (i.e., where a NMFS finding or permit allows use within the buffers).

3. Use of carbaryl under a Washington state-issued 24(c) registration for oyster beds in the estuarine mudflats of Willapa Bay and Grays Harbor.

B. What is the Agency's authority for taking this action?

On November 29, 2010, NCAP and other environmental groups and fishing interests filed a lawsuit in the Federal District Court for the Western District of Washington alleging that EPA failed to comply with sections 7 and 9 of the ESA (16 U.S.C. 1536, 1538) with regard to the effects of six EPA-registered pesticides (carbaryl, carbofuran, chlorpyrifos, diazinon, malathion, and methomyl) on 28 Pacific salmonid species that are listed as endangered or threatened under the ESA (*NCAP, et al.* v. *EPA,* C10–01919 (W.D. Wash.)). Subsequent to the filing of the case, all carbofuran end-use product registrations were cancelled, effectively leaving only five pesticides at issue in the litigation.

On February 21, 2013, in *Dow Agrosciences LLC* v. *NMFS,* 707 F.3d 462 (4th Cir. 2013), the U.S. Court of Appeals for the 4th Circuit vacated the NMFS biological opinion addressing chlorpyrifos, diazinon, and malathion. Following that ruling, the Plaintiffs in the NCAP v. EPA litigation supplemented their original complaint to assert that in the absence of a valid biological opinion, EPA had failed to complete consultation on those three pesticides. In the fall of 2013, the intervenors, CropLife America and other pesticide industry and pesticide user groups, filed a motion to dismiss both that claim and claims that EPA's registration of the pesticides was in violation of the ''take'' provisions of section 9 of the ESA.

On January 28, 2014, Judge Zilly denied intervenors' motion to dismiss these claims. Subsequent to that ruling, the parties filed a stipulated motion to stay the *NCAP* v. *EPA* litigation to allow the parties to discuss the potential for settlement.

On June 6, 2014, EPA sought public comment on a proposed agreement with plaintiffs, in the form of a stipulated injunction, to reinstitute the no-spray buffers originally established in the *WTC* v. *EPA* litigation during the period that EPA develops new biological evaluations for salmonid species (which will be completed in connection with the development of EPA's national FIFRA registration reviews for these pesticides). Following review of the comments, most of which supported the proposed agreement, EPA filed the agreement with the Court and the Court entered the stipulated injunction on August 15, 2014. These buffer zones will remain in place until EPA implements any necessary protections for Pacific salmon and steelhead based on reinitiated consultations with NMFS. In separate litigation, *NCAP* v. *NMFS,* C07–1791 (W.D. Wash.), NMFS has agreed to complete any consultation EPA reinitiates on chlorpyrifos, diazinon, and malathion by December 2017, and any consultation EPA reinitiates on carbaryl and methomyl by December 2018. These dates are intended to correspond with EPA's FIFRA registration review schedule for these pesticides.

The stipulated injunction also requires EPA to provide notice of the reinstitution of the no-spray buffers zones to numerous groups, including certified applicators, state and local governments, federal agencies, user groups, extension services and land grant universities in affected portions of California, Oregon, and Washington. It also requires EPA to provide certain information to the public and pesticide users through the EPA Web site, including maps that highlight the stream reaches where the buffer zones apply. The stipulated injunction is available at *http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2014-0301-0001.*

List of Subjects

Environmental protection, endangered species.

Dated: August 28, 2014.

Marty Monell,

Acting Director, Office of Chemical Safety and Pollution Prevention, Office of Pesticide Programs.

[FR Doc. 2014–21414 Filed 9–9–14; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF DEFENSE

GENERAL SERVICES ADMINISTRATION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[OMB Control No. 9000–0183;Docket No. 2014–0055; Sequence 13]

Submission for OMB Review; Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions

AGENCY: Department of Defense (DOD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Notice of request for public comments regarding an extension, to an existing OMB clearance.

SUMMARY: Under the provisions of the Paperwork Reduction Act (44 U.S.C. chapter 35), the Regulatory Secretariat Division (MVCB) will be submitting to the Office of Management and Budget (OMB) a request to review an extension of a currently approved information collection requirement regarding Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions. This request for extension relates to FAR case 2013–022, Extension of Limitations on Contractor Employee Personal Conflicts of Interest, proposed rule, which published updated burden hours in the **Federal Register** at 79 FR 18503 on April 2, 2014. A notice was published in the **Federal Register** at 79 FR 33557 on June 11, 2014. No comments were received.

DATES: Submit comments on or before October 10, 2014.

ADDRESSES: Submit comments identified by Information Collection 9000–0183, Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions by any of the following methods:

• *Regulations.gov: http://www.regulations.gov.*

Submit comments via the Federal eRulemaking portal by searching the OMB control number 9000–0183. Select the link ''Comment Now'' that corresponds with ''Information Collection 9000–0183, Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions''. Follow the instructions provided on the screen. Please include your name, company name (if any), and ''Information Collection 9000–0183, Preventing Personal Conflicts of Interest for Contractor Employees Performing

Acquisition Functions'' on your attached document.

- *Fax:* 202–501–4067.
- *Mail:* General Services Administration, Regulatory Secretariat Division (MVCB), 1800 F Street NW., Washington, DC 20405–0001. ATTN: Ms. Flowers/IC 9000–0183.

Instructions: Please submit comments only and cite Information Collection 9000–0183, Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions, in all correspondence related to this collection. All comments received will be posted without change to *http://www.regulations.gov,* including any personal and/or business confidential information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Cecelia L. Davis, Procurement Analyst, Acquisition Policy Division, GSA 202–219–0202 or email *cecelia.davis@gsa.gov.*

SUPPLEMENTARY INFORMATION:

A. Purpose

This is a request for an extension of an existing information collection requirement concerning the Office of Management and Budget (OMB) Control Number 9000–0183, Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions. The request uses the burden hours provided in the proposed FAR rule (2013–022).

The proposed rule expands the coverage and proposes to amend the FAR by implementing section 829 of the National Defense Authorization Act for Fiscal Year 2013 (Pub. L. 112–239) to extend the limitations on contractor employee personal conflicts of interest. The limits on personal conflicts of interest are being extended to: (1) The performance of all functions that are closely associated with inherently governmental functions (not just acquisition functions) and (2) contracts for personal services (to the extent such contracts are authorized by law, e.g., legal or medical services).

In the current information collection, Section 841(a) requires the Administrator for Federal Procurement Policy to develop and issue a standard policy to prevent personal conflicts of interest by contractor employees performing acquisition functions. The policy is related to inherently governmental functions, and an associated personal conflicts-of-interest clause or set off clauses.

Contractors are required to notify contracting officers whenever they become aware of any personal conflict of interest violations by a covered employee. The objective of the notification requirement is to emphasize the critical importance of integrity in contracting and reduce the occurrence of personal conflict-of-interest violations by contractor employees performing acquisition-related functions.

In addition, contractors have the opportunity, in exceptional circumstances, to request mitigation or waiver of the personal conflict-of-interest standards. The information is used by the Government to evaluate the requested mitigation/waiver.

B. The Annual Reporting Burden Estimated as Follows

Respondents: 188.
Responses per Respondent: 1.
Total Responses: 188.
Hours per Response: 30.
Total Burden Hours: 5640.

The annual recordkeeping burden is estimated as follows:

Recordkeepers: 9,361.
Hours per recordkeeper: 59.
Total recordkeeping hours: 552,299.

C. Public Comments

Public comments are particularly invited on: Whether this collection of information is necessary for the proper performance of functions of the FAR, and whether it will have practical utility; whether our estimate of the public burden of this collection of information is accurate, and based on valid assumptions and methodology; ways to enhance the quality, utility, and clarity of the information to be collected; and ways in which we can minimize the burden of the collection of information on those who are to respond, through the use of appropriate technological collection techniques or other forms of information technology.

Obtaining Copies of Proposals: Requesters may obtain a copy of the information collection documents from the General Services Administration, Regulatory Secretariat Division (MVCB), 1800 F Street NW., Washington, DC 20405–0001 telephone 202–501–4755. Please cite OMB Control No. 9000–0183, Preventing Personal Conflicts of Interest for Contractor Employees Performing Acquisition Functions, in all correspondence.

Dated: September 4, 2014.

Edward Loeb,

Acting Director, Federal Acquisition Policy Division, Office of Government-wide Acquisition Policy, Office of Acquisition Policy, Office of Government-wide Policy.

[FR Doc. 2014–21557 Filed 9–9–14; 8:45 am]

BILLING CODE 6820–EP–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

Disease, Disability, and Injury Prevention and Control Special Emphasis Panel (SEP): Initial review

The meeting announced below concerns NIOSH Member Conflict Review, PA 07–318, initial review. These applications are submitted by members of the Safety and Occupational Health Study Section and must be reviewed outside of the regular panel meeting to avoid any conflict of interest.

In accordance with Section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), the Centers for Disease Control and Prevention (CDC) announces the aforementioned meeting:

Time And Date: 1:00 p.m.–3:00 p.m., October 28, 2014 (Closed).

Place: Teleconference.

Status: The meeting will be closed to the public in accordance with provisions set forth in Section 552b(c) (4) and (6), Title 5 U.S.C., and the Determination of the Director, Management Analysis and Services Office, CDC, pursuant to Public Law 92–463.

Matters for Discussion: The meeting will include the initial review, discussion, and evaluation of applications received in response to ''NIOSH Member Conflict Review, PA 07–318.

Contact Person for More Information: Nina Turner, Ph.D., Scientific Review Officer, 1095 Willowdale Road, Morgantown, WV 26506, Telephone: (304) 285–5976.

The Director, Management Analysis and Services Office, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities, for both the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry.

Claudette Grant,

Director, Management Analysis and Services Office, Centers for Disease Control and Prevention.

[FR Doc. 2014–21568 Filed 9–9–14; 8:45 am]

BILLING CODE 4163–18–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

Safety and Occupational Health Study Section (SOHSS), National Institute for Occupational Safety and Health (NIOSH or Institute)

In accordance with section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463), the Centers for Disease Control and Prevention (CDC)

announces the following committee meeting.

Times And Dates: 8:00 a.m.—5:00 p.m., October 15, 2014 (Closed). 8:00 a.m.—5:00 p.m., October 16, 2014 (Closed).

Place: Embassy Suites, 1900 Diagonal Road, Alexandria, Virginia 22314, Telephone: 703–684–5900, Fax: 703–684–0653.

Purpose: The Safety and Occupational Health Study Section will review, discuss, and evaluate grant application(s) received in response to the Institute's standard grants review and funding cycles pertaining to research issues in occupational safety and health, and allied areas.

It is the intent of NIOSH to support broad-based research endeavors in keeping with the Institute's program goals. This will lead to improved understanding and appreciation for the magnitude of the aggregate health burden associated with occupational injuries and illnesses, as well as to support more focused research projects, which will lead to improvements in the delivery of occupational safety and health services, and the prevention of work-related injury and illness. It is anticipated that research funded will promote these program goals.

Matters for Dicussion: The meeting will convene to address matters related to the conduct of Study Section business and for the study section to consider safety and occupational health-related grant applications.

These portions of the meeting will be closed to the public in accordance with provisions set forth in Section 552b(c)(4) and (6), Title 5 U.S.C., and the Determination of the Director, Management Analysis and Services Office, Centers for Disease Control and Prevention, pursuant to Section 10(d) Public Law 92–463.

Agenda items are subject to change as priorities dictate.

Contact person for more information: Price Connor, Ph.D., NIOSH Health Scientist, CDC, 2400 Executive Parkway, Mailstop E–20, Atlanta, Georgia 30345, Telephone: (404) 498–2511, Fax: (404) 498–2571.

The Director, Management Analysis and Services Office, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities for both CDC and the Agency for Toxic Substances and Disease Registry.

Claudette Grant,

Acting Director, Management Analysis and Services Office, Centers for Disease Control and Prevention.

[FR Doc. 2014–21569 Filed 9–9–14; 8:45 am]

BILLING CODE 4163–18–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

Request for Nominations of Candidates To Serve on the Board of Scientific Counselors (BSC), National Institute for Occupational Safety and Health (NIOSH)

The Centers for Disease Control and Prevention CDC is soliciting nominations for possible membership on the Board of Scientific Counselors, National Institute for Occupational Safety and Health (BSC, NIOSH).

The BSC, NIOSH consists of 15 experts in fields related to occupational safety and health. The members are selected by the Secretary of the U.S. Department of Health and Human Services (HHS). The board advises the NIOSH Director on occupational safety and health research and prevention programs. The board also provides advice on standards of scientific excellence, current needs in the field of occupational safety and health, and the applicability and dissemination of research findings. This advice may take the form of reports or verbal communications to the NIOSH Director during BSC meetings.

Nominations are being sought for individuals who have expertise and qualifications necessary to contribute to the accomplishment of the board's mission. More information is available on the NIOSH BSC Web site: *http://www.cdc.gov/niosh/BSC/default.html*

Nominees will be selected based on expertise in the field occupational safety and health, such as occupational medicine, occupational nursing, industrial hygiene, occupational safety and health engineering, toxicology, chemistry, safety and health education, ergonomics, epidemiology, biostatistics, and psychology. Federal employees will not be considered for membership. Members may be invited to serve for terms of up to four years. Selected nominees would begin service on the NIOSH BSC in January 2016.

The U.S. Department of Health and Human Services policy stipulates that committee membership shall be balanced in terms of professional training and background, points of view represented, and the committee's function. In addition to a broad range of expertise, consideration is given to a broad representation of geographic areas within the U.S., with diverse representation of both genders, ethnic and racial minorities, and persons with disabilities. Nominees must be U.S. citizens, and cannot be full-time employees of the U.S. Government, or federally registered lobbyists.

Candidates should submit the following items:

- Current *curriculum vitae,* including complete contact information (name, affiliation, mailing address, telephone number, email address)
- A letter of recommendation stating the qualifications of the candidate.
- A statement indicating the nominee's willingness to serve as a potential member of the BSC, NIOSH.

Nomination materials must be postmarked by December 15, 2014, and sent to: John Decker, NIOSH, CDC, 1600 Clifton Road NE., Mailstop E–20, Atlanta, Georgia 30333, telephone (404) 498–2500.

The Director, Management Analysis and Services Office, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities for both the Centers for Disease Control and Prevention, and the Agency for Toxic Substances and Disease Registry.

Claudette Grant,

Acting Director, Management Analysis and Services Office, Centers for Disease Control and Prevention.

[FR Doc. 2014–21567 Filed 9–9–14; 8:45 am]

BILLING CODE 4163–18–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2013–N–1164]

Agency Information Collection Activities; Announcement of Office of Management and Budget Approval; Testing Communications on Biological Products

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing that a collection of information entitled ''Testing Communications on Biological Products'' has been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995.

FOR FURTHER INFORMATION CONTACT: FDA PRA Staff, Office of Operations, Food and Drug Administration, 8455 Colesville Rd., COLE–14526, Silver Spring, MD 20993–0002, *PRAStaff@fda.hhs.gov.*

SUPPLEMENTARY INFORMATION: On June 18, 2014, the Agency submitted a proposed collection of information entitled ''Testing Communications on Biological Products'' to OMB for review and clearance under 44 U.S.C. 3507. An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has now approved the information collection and has assigned OMB control number 0910–0687. The approval expires on August 31, 2017. A copy of the supporting statement for this information collection is available on the Internet at *http://www.reginfo.gov/public/do/PRAMain.*

Dated: September 4, 2014.

Leslie Kux,

Assistant Commissioner for Policy.

[FR Doc. 2014–21533 Filed 9–9–14; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2014–N–0920]

Agency Information Collection Activities; Submission for Office of Management and Budget Review; Comment Request; Health and Diet Survey

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing that a proposed collection of information has been submitted to the Office of Management and Budget (OMB) for review and clearance under the Paperwork Reduction Act of 1995.

DATES: Fax written comments on the collection of information by October 10, 2014.

ADDRESSES: To ensure that comments on the information collection are received, OMB recommends that written comments be faxed to the Office of Information and Regulatory Affairs, OMB, Attn: FDA Desk Officer, FAX: 202–395–7285, or emailed to *oira_submission@omb.eop.gov.* All comments should be identified with the OMB control number 0910–0545. Also include the FDA docket number found in brackets in the heading of this document.

FOR FURTHER INFORMATION CONTACT: FDA PRA Staff, Office of Operations, Food and Drug Administration, 8455 Colesville Road; COLE–14526, Silver Spring, MD 20993–0002, *PRAStaff@fda.hhs.gov.*

SUPPLEMENTARY INFORMATION: In compliance with 44 U.S.C. 3507, FDA has submitted the following proposed collection of information to OMB for review and clearance.

Health and Diet Survey as Used by the Food and Drug Administration—(OMB Control Number 0910–0545)—(Revision)

We are seeking OMB approval to revise the Health and Diet Survey, which is a voluntary consumer survey intended to gauge and to track consumer attitudes, awareness, knowledge, and behavior regarding various topics related to health, nutrition, physical activity, and product labeling. Currently this collection is approved as a traditional collection; however, the Agency wishes to employ future collections under the generic collection process. The authority for FDA to collect the information derives from FDA's Commissioner of Food and Drugs authority provided in section 903(d)(2) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 393(d)(2)).

We will use the Health and Diet Survey findings to test and refine our ideas, but will generally conduct further research before making important decisions such as adopting new policies and allocating or redirecting significant resources to support these policies.

This survey has been repeated approximately every 3 to 5 years over the course of the past 3 decades for the purpose of tracking changes and trends in public opinions and consumer behavior, with some new questions added or omitted or partially modified in each iteration in response to emerging and current events or issues. In the next 3 years, we plan to field the survey two to three times. We will use the information from the Health and Diet Survey to evaluate and develop strategies and programs to encourage and help consumers adopt healthy diets and lifestyles. The information will also help FDA evaluate and track consumer awareness and behavior as outcome measures of their achievement in improving public health.

Description of Respondents: The respondents are adults, age 18 and older, drawn from the 50 States and the District of Columbia. Participation will be voluntary.

In the **Federal Register** of July 14, 2014 (79 FR 40760), FDA published a 60-day notice requesting public comment on the proposed collection of information. No comments were received.

We estimate the burden of this collection of information as follows:

TABLE 1—ESTIMATED ANNUAL REPORTING BURDEN [1]

Activity	Number of respondents	Number of responses per respondent	Total annual responses	Average burden per response	Total hours
Cognitive interview screener	100	1	100	0.083 (5 minutes)	8
Cognitive interview	18	1	18	1	18
Pretest screener	2,000	1	2,000	0.033 (2 minutes)	66
Pretest	200	1	200	0.25 (15 minutes)	50
Survey screener	30,000	1	30,000	0.033 (2 minutes)	990
Survey	3,000	1	3,000	0.25 (15 minutes)	750
Total					1,882

[1] There are no capital costs or operating and maintenance costs associated with this collection of information.

We base our estimate of the number of respondents and the average burden per response on our experience with previous Health and Diet Surveys. We will use a cognitive interview screener with 100 individuals to recruit prospective interview participants. We estimate that it will take a screener respondent approximately 5 minutes (0.083 hours) to complete the cognitive interview screener, for a total of 8 hours, rounded down from 8.3 hours. We will conduct cognitive interviews with 18 participants. We estimate that it will take a participant approximately 1 hour

to complete the interview, for a total of 18 hours. Prior to the administration of the Health and Diet Survey, the Agency plans to conduct a pretest to identify and resolve potential survey administration problems. We will use a pretest screener with 2,000 individuals; we estimate that it will take a respondent approximately 2 minutes (0.033 hours) to complete the pretest screener, for a total of 66 hours. The pretest will be conducted with 200 participants; we estimate that it will take a participant 15 minutes (0.25 hours) to complete the pretest, for a total of 50 hours. We will use a survey screener to select an eligible adult respondent in each household reached by landline telephone numbers to participate in the survey. A total of 30,000 individuals in the 50 states and the District of Columbia will be screened by telephone. We estimate that it will take a respondent 2 minutes (0.033 hours) to complete the screening, for a total of 990 hours. We estimate that 3,000 eligible adults will participate in the survey, each taking 15 minutes (0.25 hours), for a total of 750 hours. Thus, the total estimated burden is 1,882 hours.

We are requesting this burden for unplanned surveys so as not to restrict our ability to gather information on consumer attitudes, awareness, knowledge, and behavior regarding various topics related to health, nutrition, physical activity, and product labeling. This ability will help the Agency identify and respond to emerging issues in a more timely manner.

Dated: September 4, 2014.

Leslie Kux,

Assistant Commissioner for Policy.

[FR Doc. 2014–21532 Filed 9–9–14; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2014–D–1182]

Unique Device Identification System: Small Entity Compliance Guide; Guidance for Industry; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing the availability of a guidance for industry entitled ''Unique Device Identification System: Small Entity Compliance Guide'' for a final rule published in the **Federal Register** of September 2013. This small entity compliance guide (SECG) intends to provide, in plain language, the requirements of the regulation and to help small businesses understand and comply with the regulation.

DATES: Submit either electronic or written comments on the SECG at any time.

ADDRESSES: Submit written requests for single copies of the SECG entitled ''Unique Device Identification System: Small Entity Compliance Guide'' to the Office of the Center Director, Guidance and Policy Development, Center for Devices and Radiological Health (CDRH), Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 66, Rm. 5431, Silver Spring, MD 20993–0002 or to the Office of Communication, Outreach and Development, Center for Biologics Evaluation and Research (CBER), Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 71, Rm. 3128, Silver Spring, MD 20993–0002. Send one self-addressed adhesive label to assist the office in processing your requests.

Submit electronic comments on the guidance to *http://www.regulations.gov*. Submit written comments to the Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852. Identify comments with the docket number found in brackets in the heading of this document.

FOR FURTHER INFORMATION CONTACT: For CDRH questions regarding this document, contact UDI Regulatory Policy Support, 301–796–5995, email: *udi@fda.hhs.gov*. For CBER questions regarding this document, contact Stephen Ripley, Center for Biologics Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 71, Rm. 7301, Silver Spring, MD 20993–0002, 240–402–7911.

SUPPLEMENTARY INFORMATION:

I. Background

FDA is announcing the availability of a document entitled: ''Unique Device Identification System: Small Entity Compliance Guide.''

Section 226 of the Food and Drug Administration Amendments Act of 2007 (Pub. L. 110–85) and section 614 of the Food and Drug Administration Safety and Innovation Act (Pub. L.112–144) amended the Federal Food, Drug, and Cosmetic Act to add section 519(f) (21 U.S.C. 360i(f)), which directs FDA to issue regulations establishing a unique device identification system for medical devices.

In the **Federal Register** of September 24, 2013 (78 FR 58785), FDA published a final rule establishing a unique device identification system (the UDI Rule). Some parts of the rule became effective on October 24, 2013; the remaining parts became effective on December 23, 2013. In addition, certain provisions within the rule have later compliance dates. In compliance with section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), FDA is making available this SECG stating in plain language the legal requirements of the September 24, 2013, final rule.

This level 2 guidance is being issued consistent with FDA's good guidance practices regulation (21 CFR 10.115(c)(2)). The SECG represents the Agency's current thinking on this topic. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. An alternative approach may be used if such approach satisfies the requirements of the applicable statutes and regulations.

II. Paperwork Reduction Act

This guidance refers to previously approved collections of information found in FDA regulations. These collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). The collections of information in 21 CFR part 801 and 830 have been approved under OMB control number 0910–0720; the collections of information in part 803 have been approved under OMB control number 0910–0437; the collections of information in part 806 have been approved under OMB control number 0910–0359; the collections of information in part 810 have been approved under OMB control number 0910–0432; the collections of information in part 814 have been approved under 0910–0231; the collections of information in part 821 have been approved under OMB control number 0910–0442; and the collections of information in part 822 have been approved under OMB control number 0910–0449.

III. Comments

Interested persons may submit either electronic comments regarding this document to *http://www.regulations.gov* or written comments to the Division of Dockets Management (see **ADDRESSES**). It is only necessary to send one set of comments. Identify comments with the

docket number found in brackets in the heading of this document. Received comments may be seen in the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday, and will be posted to the docket at *http://www.regulations.gov*.

IV. Electronic Access

Persons with access to the Internet may obtain an electronic version of the guidance at *http://www.regulations.gov, http://www.fda.gov/BiologicsBloodVaccines/GuidanceComplianceRegulatoryInformation/default.htm,* or *http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/default.htm*. Persons unable to download an electronic copy of ''Unique Device Identification System: Small Entity Compliance Guide'' may send an email request to *CDRH-Guidance@fda.hhs.gov* to receive an electronic copy of the document. Please use the document number 1400046 to identify the guidance you are requesting.

Dated: September 4, 2014.

Leslie Kux,

Assistant Commissioner for Policy.

[FR Doc. 2014–21480 Filed 9–9–14; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Resources and Services Administration

National Advisory Committee on Rural Health and Human Services; Notice of Meeting

AGENCY: Health Resources and Services Administration (HRSA), HHS.

ACTION: Notice; correction.

SUMMARY: HRSA published a notice in the **Federal Register**, FR 2014–18735 (August 8, 2014), announcing the meeting of the National Advisory Committee on Rural Health and Human Services in Sioux Falls, South Dakota (**Federal Register**, Vol. 79, No. 153, 46445). The site for the opening of the meeting has been changed.

FOR FURTHER INFORMATION CONTACT: Steve Hirsch, MSLS, Executive Secretary, National Advisory Committee on Rural Health and Human Services, HRSA, Parklawn Building, 17W61, 5600 Fishers Lane, Rockville, MD 20857, Telephone (301) 443–0835, Fax (301) 443–2803, or email at *shirsch@hrsa.gov.*

Correction

In the **Federal Register** of August 8, 2014, in FR Doc. 2014–18735, on page 44645, in column 3, correct the ''PLACE'' section to read:

The meeting on September 24, 2014, will begin at the address below at 8:45 a.m.: Holiday Inn Sioux Falls-City Centre, 100 West 8th Street, Sioux Falls, SD 57104, (605) 339–2000.

The meetings on both September 25 and 26 will take place as previously announced at Avera eHelm, 4500 N Lewis Ave, Sioux Falls, SD 57104, (605) 322–4669.

Dated: September 4, 2014.

Jackie Painter,

Acting Director, Division of Policy and Information Coordination.

[FR Doc. 2014–21553 Filed 9–9–14; 8:45 am]

BILLING CODE 4165–15–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Notice of Correction for Notice of Intent To Prepare an Environmental Impact Statement and Notice of Scoping Meeting

The National Institutes of Health (NIH) is correcting a notice previously published in the **Federal Register** on August 28, 2014 (79 FR 51344) and titled ''Notice of Intent to Prepare an Environmental Impact Statement and Notice of Scoping Meeting.'' The notice announced that the National Institutes of Health (NIH) was preparing an environmental impact statement for the Assure/Expand Chilled Water Capacity project located on the National Institutes of Health, Bethesda Campus, Bethesda, Maryland.

NIH is amending the date of the meeting from September 24, 2014 to October 2, 2014. For further information about the meeting, please contact Mark Radtke at 301–451–6467.

Dated: September 3, 2014.

Daniel G. Wheeland,

Director, Office of Research Facilities Development and Operations, National Institutes of Health.

[FR Doc. 2014–21540 Filed 9–9–14; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR–14–085: Metabolic Reprogramming in Immunotherapy.

Date: September 29, 2014.

Time: 8:00 a.m. to 9:30 a.m.

Agenda: To review and evaluate grant applications.

Place: The Embassy Row Hotel, 2015 Massachusetts Avenue NW., Washington, DC 20036.

Contact Person: Denise R Shaw, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6158, MSC 7804, Bethesda, MD 20892, 301–435–0198, *shawdeni@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Special: Pilot Clinical Studies in Nephrology.

Date: October 1–2, 2014.

Time: 9:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Atul Sahai, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2188, MSC 7818, Bethesda, MD 20892, 301–435–1198, *sahaia@csr.nih.gov.*

Name of Committee: Musculoskeletal, Oral and Skin Sciences Integrated Review Group; Skeletal Biology Development and Disease Study Section.

Date: October 2–3, 2014.

Time: 7:00 a.m. to 5:30 p.m.

Agenda: To review and evaluate grant applications.

Place: Torrance Marriott South Bay, 3635 Fashion Way, Torrance, CA 90503.

Contact Person: Aruna K Behera, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4211, MSC 7814, Bethesda, MD 20892, 301–435–6809, *beheraak@csr.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: September 3, 2014.

David Clary,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2014–21468 Filed 9–9–14; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Dental & Craniofacial Research; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Dental and Craniofacial Research Special Emphasis Panel; Review of Research Project Grant (R01, PA13–302) Application.

Date: October 9, 2014.

Time: 12:00 p.m. to 1:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Inst. of Dental and Craniofacial Research, 6701 Democracy Blvd., Bethesda, MD 20892.

Contact Person: Raj K. Krishnaraju, Ph.D., MS, Scientific Review Branch, National Inst. of Dental & Craniofacial Research, National Institutes of Health, 6701 Democracy Blvd., Room: 674 (Courier MD 20817), Bethesda, MD 20892, 301–594–4864, *kkrishna@nidcr.nih.gov*.

Name of Committee: National Institute of Dental and Craniofacial Research Special Emphasis Panel; NIDCR Secondary Data Analysis R03 Review SEP.

Date: October 10, 2014.

Time: 10:00 a.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Inst. of Dental and Craniofacial Research, Room 987, 6701 Democracy Blvd., Bethesda, MD 20892.

Contact Person: Jayalakshmi Raman, Ph.D., Scientific Review Officer, Scientific Review Branch, National Institute of Dental and Craniofacial Research, One Democracy Plaza, Room 670, Bethesda, MD 20892–4878, 301–594–2904, *ramanj@mail.nih.gov*.

Name of Committee: National Institute of Dental and Craniofacial Research Special Emphasis Panel.

Date: October 15, 2014.

Time: 12:00 p.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Inst. of Dental and Craniofacial Research, 6701 Democracy Boulevard, Bethesda, MD 20892.

Contact Person: Raj K. Krishnaraju, Ph.D., MS, Scientific Review Branch, National Inst. of Dental & Craniofacial Research, National Institutes of Health, 6701 Democracy Blvd., Room: 674 (Courier MD 20817), Bethesda, MD 20892, 301–594–4864, *kkrishna@nidcr.nih.gov*.

Name of Committee: National Institute of Dental and Craniofacial Research Special Emphasis Panel.

Date: October 21, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Inst. of Dental and Craniofacial Research, 6701 Democracy Boulevard, Bethesda, MD 20892.

Contact Person: Savvas C Makrides, Ph.D., Scientific Review Officer, Scientific Review Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, 6701 Democracy Boulevard, Suite 672, Bethesda, MD 20892, 301–594–4859, *makridessc@mail.nih.gov*.

Name of Committee: NIDCR Special Grants Review Committee; NIDCR DSR January 2015 Council.

Date: October 23–24, 2014.

Time: 8:00 a.m. to 12:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, The Porter Neuroscience Research Center, 35 Convent Drive, Bethesda, MD 20892.

Contact Person: Marilyn Moore-Hoon, Ph.D., Scientific Review Officer, Scientific Review Branch, National Institute of Dental and Craniofacial Research, 6701 Democracy Blvd., Rm. 676, Bethesda, MD 20892–4878, 301–594–4861, *mooremar@nidcr.nih.gov*.

(Catalogue of Federal Domestic Assistance Program Nos. 93.121, Oral Diseases and Disorders Research, National Institutes of Health, HHS).

Dated: September 4, 2014.

David Clary,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2014–21465 Filed 9–9–14; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Integrative, Functional and Cognitive Neuroscience Integrated Review Group; Mechanisms of Sensory, Perceptual, and Cognitive Processes Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites DC Covention Center, 900 10th Street NW., Washington, DC 20001.

Contact Person: Kirk Thompson, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5184, MSC 7844, Bethesda, MD 20892, 301–435–1242, *kgt@mail.nih.gov.*

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group; Medical Imaging Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Alexandria Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

Contact Person: Xiang-Ning Li, MD, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5112, MSC 7854, Bethesda, MD 20892, 301–435–1744, *lixiang@csr.nih.gov.*

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group; Biomedical Imaging Technology B Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Alexandria Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

Contact Person: Lee Rosen, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5116, MSC 7854, Bethesda, MD 20892, (301) 435–1171, *rosenl@csr.nih.gov.*

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group; Biomedical Imaging Technology A Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Alexandria Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

Contact Person: Behrouz Shabestari, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5126,

MSC 7854, Bethesda, MD 20892, (301) 435–2409, *shabestb@csr.nih.gov.*

Name of Committee: Genes, Genomes, and Genetics Integrated Review Group; Genomics, Computational Biology and Technology Study Section.

Date: October 6–7, 2014.

Time: 8:30 a.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Crystal City, 2399 Jefferson Davis Highway, Arlington, VA 22202.

Contact Person: Barbara J. Thomas, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2218, MSC 7890, Bethesda, MD 20892, 301–435–0603, *bthomas@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR PANEL: Targeting temporal dynamics of the brain activity for treating Cognitive deficits.

Date: October 7–8, 2014.

Time: 8:00 a.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Wei-Qin Zhao, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5181 MSC 7846, Bethesda, MD 20892–7846, 301–435–1236, *zhaow@csr.nih.gov.*

Name of Committee: Endocrinology, Metabolism, Nutrition and Reproductive Sciences Integrated Review Group; Molecular and Cellular Endocrinology Study Section.

Date: October 7–8, 2014.

Time: 8:00 a.m. to 12:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Row Hotel, 2015 Massachusetts Ave. NW., Washington, DC 20036.

Contact Person: John Bleasdale, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6170 MSC 7892, Bethesda, MD 20892, 301–435–4514, *bleasdaleje@csr.nih.gov.*

Name of Committee: Population Sciences and Epidemiology Integrated Review Group; Social Sciences and Population Studies A Study Section.

Date: October 7–8, 2014.

Time: 8:30 a.m. to 2:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Residence Inn by Marriott, 1456 Duke Street, Alexandria, VA 22314.

Contact Person: Suzanne Ryan, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3139, MSC 7770, Bethesda, MD 20892, (301) 435–1712, *ryansj@csr.nih.gov.*

Name of Committee: Infectious Diseases and Microbiology Integrated Review Group; Vector Biology Study Section.

Date: October 8, 2014

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Washington/Rockville, 1750 Rockville Pike, Rockville, MD 20852.

Contact Person: Liangbiao Zheng, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3214, MSC 7808, Bethesda, MD 20892, 301–402–5671, *zhengli@csr.nih.gov.*

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group; Surgery, Anesthesiology and Trauma Study Section.

Date: October 8–9, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Washington/Rockville, 1750 Rockville Pike, Rockville, MD 20852.

Contact Person: Weihua Luo, MD, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5114, MSC 7854, Bethesda, MD 20892, (301) 435–1170, *luow@csr.nih.gov.*

Name of Committee: Digestive, Kidney and Urological Systems Integrated Review Group; Xenobiotic and Nutrient Disposition and Action Study Section.

Date: October 8, 2014.

Time: 8:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Villa Florence Hotel, 225 Powell Street, San Francisco, CA 94102.

Contact Person: Martha Garcia, Ph.D., Scientific Reviewer Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2186, Bethesda, MD 20892, 301–435–1243, *garciamc@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR13–137: Bioengineering Research.

Date: October 8, 2014.

Time: 8:00 a.m. to 9:00 a.m.

Agenda: To review and evaluate grant applications.

Place: Doubletree By Hilton Washington DC, 1515 Rhode Island Ave. NW., Washington, DC 20005.

Contact Person: Yvonne Bennett, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5199, MSC 7846, Bethesda, MD 20892, 301–379–3793, *bennetty@csr.nih.gov.*

Name of Committee: Bioengineering Sciences & Technologies Integrated Review Group; Instrumentation and Systems Development Study Section.

Date: October 8–9, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites DC Convention Center, 900 10th St. NW., Washington, DC 20001.

Contact Person: Kathryn Kalasinsky, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5158 MSC 7806, Bethesda, MD 20892, 301–402–1074, *kalasinskyks@mail.nih.gov.*

Name of Committee: Emerging Technologies and Training Neurosciences Integrated Review Group; Neuroscience and Ophthalmic Imaging Technologies Study Section.

Date: October 8–9, 2014.

Time: 9:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Doubletree By Hilton Washington DC, 1515 Rhode Island Ave. NW., Washington, DC 20005.

Contact Person: Yvonne Bennett, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5199, MSC 7846, Bethesda, MD 20892, 301–379–3793, *bennetty@csr.nih.gov.*

Name of Committee: Molecular, Cellular and Developmental Neuroscience Integrated Review Group; Neurogenesis and Cell Fate Study Section.

Date: October 8, 2014.

Time: 9:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites Alexandria, 1900 Diagonal Road, Alexandria, VA 22314.

Contact Person: Joanne T. Fujii, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4184, MSC 7850, Bethesda, MD 20892, (301) 435–1178, *fujiij@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR–13–169: Academic Industrial Partnership.

Date: October 8, 2014.

Time: 11:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892.

Contact Person: Donald Scott Wright, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5108, MSC 7854, Bethesda, MD 20892, (301) 435–8363, *wrightds@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Immunotherapeutic.

Date: October 8, 2014.

Time: 11:00 a.m. to 1:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892, (Telephone Conference Call).

Contact Person: Careen K. Tang-Toth, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6214, MSC 7804, Bethesda, MD 20892, (301) 435–3504, *tothct@csr.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS).

Dated: September 4, 2014.

Carolyn A. Baum,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2014–21466 Filed 9–9–14; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Cancer Institute; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Cancer Institute Special Emphasis Panel; NCI Provocative Question Review: Groups D & E.

Date: November 4, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Cancer Institute Shady Grove 9609 Medical Center Drive, 7E032/034 Rockville, MD 20850.

Contact Person: Michael B. Small, Ph.D., Chief, Program and Review Extramural Staff Training Office (PRESTO), Division of Extramural Activities, National Cancer Institute, NIH, 9609 Medical Center Drive, Room 7W522, Bethesda, MD 20892–9750, 240–276–6438, *smallm@nih.gov*.

Name of Committee: National Cancer Institute Special Emphasis Panel; NCTN Biospecimen Banks U24 Review.

Date: November 18, 2014.

Time: 11:00 a.m. to 4:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Cancer Institute Shady Grove 9609 Medical Center Drive, Room 5W030 Rockville, MD 20850 (Telephone Conference Call).

Contact Person: Michael B. Small, Ph.D., Chief, Program and Review Extramural Staff Training Office (PRESTO), Division of Extramural Activities, National Cancer Institute, NIH, 9609 Medical Center, Room 7W522, Bethesda, MD 20892–9750 240–276–6438, *smallm@mail.nih.gov*.

Information is also available on the Institute's/Center's home page: *http://deainfo.nci.nih.gov/advisory/irg/irg.htm,* where an agenda and any additional information for the meeting will be posted when available.

(Catalogue of Federal Domestic Assistance Program Nos. 93.392, Cancer Construction; 93.393, Cancer Cause and Prevention Research; 93.394, Cancer Detection and Diagnosis Research; 93.395, Cancer Treatment Research; 93.396, Cancer Biology Research; 93.397, Cancer Centers Support; 93.398, Cancer Research Manpower; 93.399, Cancer Control, National Institutes of Health, HHS).

Dated: September 4, 2014.

Melanie J. Gray,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2014–21464 Filed 9–9–14; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Infectious Diseases and Microbiology Integrated Review Group; Bacterial Pathogenesis Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 12:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Long Beach and Executive Center, 701 West Ocean Boulevard, Long Beach, CA 90831.

Contact Person: Marci Scidmore, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3192, MSC 7808, Bethesda, MD 20892, 301–435–1149, *marci.scidmore@nih.gov*.

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group; Clinical Molecular Imaging and Probe Development.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 12:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Alexandria Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

Contact Person: David L. Williams, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5110, MSC 7854, Bethesda, MD 20892, (301)435–1174, *williamsdl2@csr.nih.gov*.

Name of Committee: Oncology 2—Translational Clinical Integrated Review Group; Basic Mechanisms of Cancer Therapeutics Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Palmer House Hilton, 17 E Monroe, Chicago, IL 60603.

Contact Person: Lambratu Rahman Sesay, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6214, MSC 7804, Bethesda, MD 20892, 301–451–3493, *rahman-sesayl@csr.nih.gov*.

Name of Committee: Cardiovascular and Respiratory Sciences Integrated Review Group; Lung Injury, Repair, and Remodeling Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites at the Chevy Chase Pavilion, 4300 Military Road NW., Washington, DC 20015.

Contact Person: Ghenima Dirami, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4122, MSC 7814, Bethesda, MD 20892, 240–498–7546, *diramig@csr.nih.gov*.

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group; Social Psychology, Personality and Interpersonal Processes Study Section.

Date: October 6–7, 2014.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Ritz Carlton Hotel, 1150 22nd Street, NW., Washington, DC 20037.

Contact Person: Marc Boulay, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3110, MSC 7808, Bethesda, MD 20892, (301) 300–6541, *boulaymg@csr.nih.gov*.

Name of Committee: Musculoskeletal, Oral and Skin Sciences Integrated Review Group; Arthritis, Connective Tissue and Skin Study Section.

Date: October 6–7, 2014.

Time: 8:30 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites Baltimore Inner Harbor, 222 St. Paul Place, Baltimore, MD 21202.

Contact Person: Aftab A. Ansari, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4108, MSC 7814, Bethesda, MD 20892, 301–237–9931; *ansaria@csr.nih.gov*.

Name of Committee: Cell Biology Integrated Review Group; Molecular and Integrative Signal Transduction Study Section.

*Date:*October 7–8, 2014.

Time: 8:00 a.m. to 1:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Crowne Plaza Dallas near Galleria-Addison, 14315 Midway Road, Addison, TX 75001.

Contact Person: Raya Mandler, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of

Health, 6701 Rockledge Drive, Room 5134, MSC 7840, Bethesda, MD 20892, (301) 402–8228, *rayam@csr.nih.gov*.

Name of Committee: Musculoskeletal, Oral and Skin Sciences Integrated Review Group; Skeletal Muscle and Exercise Physiology Study Section.

Date: October 7–8, 2014.

Time: 8:00 a.m. to 5:30 p.m.

Agenda: To review and evaluate grant applications.

Place: Residence Inn Bethesda, 7335 Wisconsin Avenue, Bethesda, MD 20814.

Contact Person: Richard Ingraham, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4116, MSC 7814, Bethesda, MD 20892, 301–496–8551, *ingrahamrh@mail.nih.gov*.

Name of Committee: Biological Chemistry and Macromolecular Biophysics Integrated Review Group; Biochemistry and Biophysics of Membranes Study Section.

Date: October 7–8, 2014.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: St. Gregory Hotel, 2033 M Street NW., Washington, DC 20036.

Contact Person: Nuria E. Assa-Munt, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4164, MSC 7806, Bethesda, MD 20892, (301) 451–1323; *assamunu@csr.nih.gov*.

Name of Committee: Cardiovascular and Respiratory Sciences Integrated Review Group; Cardiac Contractility, Hypertrophy, and Failure Study Section.

Date: October 7–8, 2014.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Marriott Wardman Park Washington DC Hotel, 2660 Woodley Road NW., Washington, DC 20008.

Contact Person: Olga A. Tjurmina, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4030B, MSC 7814, Bethesda, MD 20892, (301) 451–1375, *ot3d@nih.gov*.

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS).

Dated: September 3, 2014.

David Clary,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2014–21467 Filed 9–9–14; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2014–0002; Internal Agency Docket No. FEMA–B–1440]

Proposed Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, DHS.

ACTION: Notice.

SUMMARY: Comments are requested on proposed flood hazard determinations, which may include additions or modifications of any Base Flood Elevation (BFE), base flood depth, Special Flood Hazard Area (SFHA) boundary or zone designation, or regulatory floodway on the Flood Insurance Rate Maps (FIRMs), and where applicable, in the supporting Flood Insurance Study (FIS) reports for the communities listed in the table below. The purpose of this notice is to seek general information and comment regarding the preliminary FIRM, and where applicable, the FIS report that the Federal Emergency Management Agency (FEMA) has provided to the affected communities. The FIRM and FIS report are the basis of the floodplain management measures that the community is required either to adopt or to show evidence of having in effect in order to qualify or remain qualified for participation in the National Flood Insurance Program (NFIP). In addition, the FIRM and FIS report, once effective, will be used by insurance agents and others to calculate appropriate flood insurance premium rates for new buildings and the contents of those buildings.

DATES: Comments are to be submitted on or before December 9, 2014.

ADDRESSES: The Preliminary FIRM, and where applicable, the FIS report for each community are available for inspection at both the online location and the respective Community Map Repository address listed in the tables below. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *www.msc.fema.gov* for comparison.

You may submit comments, identified by Docket No. FEMA–B–1440, to Luis Rodriguez, Chief, Engineering Management Branch, Federal Insurance and Mitigation Administration, FEMA, 500 C Street SW., Washington, DC 20472, (202) 646–4064, or (email) *Luis.Rodriguez3@fema.dhs.gov.*

FOR FURTHER INFORMATION CONTACT: Luis Rodriguez, Chief, Engineering Management Branch, Federal Insurance and Mitigation Administration, FEMA, 500 C Street SW., Washington, DC 20472, (202) 646–4064, or (email) *Luis.Rodriguez3@fema.dhs.gov;* or visit the FEMA Map Information eXchange (FMIX) online at *www.floodmaps.fema.gov/fhm/fmx_main.html.*

SUPPLEMENTARY INFORMATION: FEMA proposes to make flood hazard determinations for each community listed below, in accordance with section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR 67.4(a).

These proposed flood hazard determinations, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own or pursuant to policies established by other Federal, State, or regional entities. These flood hazard determinations are used to meet the floodplain management requirements of the NFIP and also are used to calculate the appropriate flood insurance premium rates for new buildings built after the FIRM and FIS report become effective.

The communities affected by the flood hazard determinations are provided in the tables below. Any request for reconsideration of the revised flood hazard information shown on the Preliminary FIRM and FIS report that satisfies the data requirements outlined in 44 CFR 67.6(b) is considered an appeal. Comments unrelated to the flood hazard determinations also will be considered before the FIRM and FIS report become effective.

Use of a Scientific Resolution Panel (SRP) is available to communities in support of the appeal resolution process. SRPs are independent panels of experts in hydrology, hydraulics, and other pertinent sciences established to review conflicting scientific and technical data and provide recommendations for resolution. Use of the SRP only may be exercised after FEMA and local communities have been engaged in a collaborative consultation process for at least 60 days without a mutually acceptable resolution of an appeal. Additional information regarding the SRP process can be found online at *http://floodsrp.org/pdfs/srp_fact_sheet.pdf.*

The watersheds and/or communities affected are listed in the tables below. The Preliminary FIRM, and where applicable, FIS report for each community are available for inspection at both the online location and the respective Community Map Repository address listed in the tables. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *www.msc.fema.gov* for comparison.

Community	Community map repository address
Mohave County, Arizona, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Lake Havasu	City Hall, 2330 McCulloch Boulevard North, Lake Havasu City, AZ 86403.
Fort Mojave Indian Tribe	Fort Mojave Indian Reservation, 500 Merriman Avenue, Needles, CA 92363.
Unincorporated Areas of Mohave County	County Administration Building, 700 West Beale Street, Kingman, AZ 86401.
Kings County, California, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Lemoore	Planning Department, 711 West Cinnamon Drive, Lemoore, CA 93245.
Unincorporated Areas of Kings County	Community Development Agency, 1400 West Lacey Boulevard, Building 6, Hanford, CA 93230.
Los Angeles County, California, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Calabasas	City of Calabasas, 26134 Mureau Road, Suite 200, Calabasas, CA 91302.
City of Palos Verdes Estates	City of Palos Verdes Estates, 340 Palos Verdes Drive West, Palos Verdes Estates, CA 90274.
Unincorporated Areas of Los Angeles County	Los Angeles County Dept of Public Works, 900 S. Fremont Avenue, Alhambra, CA 91803.
Sacramento County, California, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Sacramento	Department of Utilities, Engineering and Water Resources Division, 1395 35th Avenue, Sacramento, CA 95822.
Unincorporated Areas of Sacramento County	Municipal Services Agency, Department of Water Resources, 827 7th Street, Suite 301, Sacramento, CA 95814.
Sonoma County, California, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Petaluma	Community Development Department, 11 English Street, Petaluma, CA 94952.
Unincorporated Areas of Sonoma County	Permit and Resource Management, 2550 Ventura Avenue, Santa Rosa, CA 95403.
Sutter County, California, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
Unincorporated Areas of Sutter County	Sutter County Water Resources Division, 1130 Civic Center Boulevard, Suite F, Yuba City, CA 95993.
Maui County, Hawaii, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
Unincorporated Areas of Maui County	County of Maui Planning Department, 2200 Main Street, Suite 315, Wailuku, HI 96793.
Kandiyohi County, Minnesota, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Lake Lillian	City Hall, 531 Lakeview Street, Lake Lillian, MN 56253.
City of New London	City Hall, 20 First Avenue Southwest, New London, MN 56273.
City of Raymond	City Office, 208 Cofield Street, Raymond, MN 56282.
City of Regal	Mayor's Residence, 14465 293rd Avenue Northeast, Belgrade, MN 56312.
City of Spicer	City Hall, 217 Hillcrest Avenue, Spicer, MN 56288.
City of Willmar	City Office Building, 333 6th Street Southwest, Willmar, MN 56201.
Unincorporated Areas of Kandiyohi County	Kandiyohi County Office Building, 400 Benson Avenue Southwest, Willmar, MN 56201.

Community	Community map repository address
Alamance County, North Carolina, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Burlington	City Hall, Engineering Department, 425 South Lexington Avenue, Burlington, NC 27215.
City of Graham	Planning Department, 201 South Main Street, Graham, NC 27254.
City of Mebane	Planning Department, 106 East Washington Street, Mebane, NC 27302.
Town of Elon	Town Hall, 104 South Williamson Avenue, Elon, NC 27244.
Town of Gibsonville	Planning Department, 129 West Main Street, Gibsonville, NC 27248.
Town of Green Level	Town Hall, 2510 Green Level Church Road, Green Level, NC 27215.
Town of Haw River	Town Hall, 403 East Main Street, Haw River, NC 27258.
Town of Ossipee	Ossipee Town Hall, 2608 Ossipee Front Street, Elon, NC 27244.
Town of Swepsonville	Town of Swepsonville, Alamance County Annex Building, Planning Department, 124 West Elm Street, Graham, NC 27253.
Unincorporated Areas of Alamance County	Alamance County Annex Building Planning Department, 124 West Elm Street, Graham, NC 27253.
Village of Alamance	Alamance Village Hall, 2874 Rob Shepard Drive, Burlington, NC 27215.
Chatham County, North Carolina, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
Town of Cary	Stormwater Services, Town Hall, 316 North Academy Street, Cary, NC 27513.
Town of Pittsboro	Planning Department, 635 East Street, Pittsboro, NC 27312.
Town of Siler City	Planning Department, 311 North Second Avenue, Room 301, Siler City, NC 27344.
Unincorporated Areas of Chatham County	Chatham County Planning Department, 80–A East Street, Pittsboro, NC 27312.
Orange County, North Carolina, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
Town of Carrboro	Planning Department, 301 West Main Street, Carrboro, NC 27510.
Town of Chapel Hill	Stormwater Management Program Office, 208 North Columbia Street, Chapel Hill, NC 27514.
Town of Hillsborough	Town Hall, 101 East Orange Street, Hillsborough, NC 27278.
Unincorporated Areas of Orange County	Orange County Planning Department, 306 East Revere Road, Hillsborough, NC 27278.
Philadelphia County, Pennsylvania, and Incorporated Areas	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
City of Philadelphia	Planning Commission Office, One Parkway, 13th Floor, 1515 Arch Street, Philadelphia, PA 19102.
Bennington County, Vermont (All Jurisdictions)	
Maps Available for Inspection Online at: *http://www.fema.gov/preliminaryfloodhazarddata*	
Town of Arlington	Town Clerk Building, 3828 Vermont Route 7A, Arlington, VT 05250.
Town of Bennington	Zoning Office, 205 South Street, Bennington, VT 05201.
Town of Dorset	Zoning Office, 112 Mad Tom Road, East Dorset, VT 05253.
Town of Landgrove	Town Hall, 88 Landgrove Road, Landgrove, VT 05148.
Town of Manchester	Planning and Zoning Office, 6039 Main Street, Manchester, VT 05255.
Town of Peru	Town Center, 402 Main Street, Peru, VT 05152.
Town of Pownal	Town Office, 467 Center Street, Pownal, VT 05261.
Town of Readsboro	Town Hall, 301 Phelps Lane, Readsboro, VT 05350.
Town of Rupert	Town Office, 187 East Street, West Rupert, VT 05776.
Town of Sandgate	Town Hall, 3277 Sandgate Road, Sandgate, VT 05250.
Town of Searsburg	Town Hall, 18 Town Garage Road, Searsburg, VT 05363.
Town of Shaftsbury	Cole Hall, 61 Buck Hill Road, Shaftsbury, VT 05262.
Town of Stamford	Town Hall, 986 Main Road, Stamford, VT 05352.
Town of Sunderland	Town Clerk's Office, 181 South Road, Sunderland, VT 05252.
Town of Winhall	Town Hall, 115 Vermont Route 30, Bondville, VT 05340.
Town of Woodford	Town Hall, 1391 Vermont Route 9, Woodford, VT 05201.
Village of Manchester	Village Office, 45 Union Street, Manchester, VT 05254.
Village of North Bennington	14 Prospect Street, North Bennington, VT 05257.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Dated: August 22, 2014.

Roy E. Wright,

Deputy Associate Administrator for Mitigation, Department of Homeland Security, Federal Emergency Management Agency.

[FR Doc. 2014–21546 Filed 9–9–14; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

U.S. Citizenship and Immigration Services

[OMB Control Number 1615–0030]

Agency Information Collection Activities: Application for Waiver of the Foreign Residence Requirement of Section 212(e) of the Immigration and Nationality Act, Form I–612; Revision of a Currently Approved Collection.

ACTION: 60-Day Notice.

SUMMARY: The Department of Homeland Security (DHS), U.S. Citizenship and Immigration Services (USCIS) invites the general public and other Federal agencies to comment upon this proposed revision of a currently approved collection of information. In accordance with the Paperwork Reduction Act (PRA) of 1995, the information collection notice is published in the **Federal Register** to obtain comments regarding the nature of the information collection, the categories of respondents, the estimated burden (i.e. the time, effort, and resources used by the respondents to respond), the estimated cost to the respondent, and the actual information collection instruments.

DATES: Comments are encouraged and will be accepted for 60 days until November 10, 2014.

ADDRESSES: All submissions received must include the OMB Control Number 1615–0030 in the subject box, the agency name and Docket ID USCIS–2008–0012. To avoid duplicate submissions, please use only one of the following methods to submit comments:

(1) *Online.* Submit comments via the Federal eRulemaking Portal Web site at *www.regulations.gov* under e-Docket ID number USCIS–2008–0012;

(2) *Email.* Submit comments to *USCISFRComment@uscis.dhs.gov;*

(3) *Mail.* Submit written comments to DHS, USCIS, Office of Policy and Strategy, Chief, Regulatory Coordination Division, 20 Massachusetts Avenue NW., Washington, DC 20529–2140.

SUPPLEMENTARY INFORMATION:

Comments

Regardless of the method used for submitting comments or material, all submissions will be posted, without change, to the Federal eRulemaking Portal at *http://www.regulations.gov,* and will include any personal information you provide. Therefore, submitting this information makes it public. You may wish to consider limiting the amount of personal information that you provide in any voluntary submission you make to DHS. DHS may withhold information provided in comments from public viewing that it determines may impact the privacy of an individual or is offensive. For additional information, please read the Privacy Act notice that is available via the link in the footer of *http://www.regulations.gov*.

Note: The address listed in this notice should only be used to submit comments concerning this information collection. Please do not submit requests for individual case status inquiries to this address. If you are seeking information about the status of your individual case, please check ''My Case Status'' online at: *https://egov.uscis.gov/cris/Dashboard.do,* or call the USCIS National Customer Service Center at 1–800–375–5283.

Written comments and suggestions from the public and affected agencies should address one or more of the following four points:

(1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

Overview of This Information Collection

(1) *Type of Information Collection:* Revision of a Currently Approved Collection.

(2) *Title of the Form/Collection:* Application for Waiver of the Foreign Residence Requirement of Section 212(e) of the Immigration and Nationality Act.

(3) *Agency form number, if any, and the applicable component of the DHS sponsoring the collection:* I–612; USCIS.

(4) *Affected public who will be asked or required to respond, as well as a brief abstract: Primary:* Individuals or households. This information collection is necessary and may be submitted only by an alien who believes that compliance with foreign residence requirements would impose exceptional hardship on his or her spouse or child who is a citizen of the United States, or a lawful permanent resident; or that returning to the country of his or her nationality or last permanent residence would subject him or her to persecution on account of race, religion, or political opinion. Certain aliens admitted to the United States as exchange visitors are subject to the foreign residence requirements of section 212(e) of the Immigration and Nationality Act (the Act). Section 212(e) of the Act also provides for a waiver of the foreign residence requirements in certain instances.

(5) *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond:* The estimated total number of respondents for the information collection I–612 is 1,300 and the estimated hour burden per response is .333 hours.

(6) *An estimate of the total public burden (in hours) associated with the collection:* The total estimated annual hour burden associated with this collection is 433 hours.

(7) *An estimate of the total public burden (in cost) associated with the collection:* The estimated total annual cost burden associated with this collection of information is $159,250.

If you need a copy of the information collection instrument with instructions, or additional information, please visit the Federal eRulemaking Portal site at: *http://www.regulations.gov.* We may also be contacted at: USCIS, Office of Policy and Strategy, Regulatory Coordination Division, 20 Massachusetts Avenue NW., Washington, DC 20529–2140, Telephone number 202–272–8377.

Dated: September 2, 2014.

Laura Dawkins,

Chief, Regulatory Coordination Division, Office of Policy and Strategy, U.S. Citizenship and Immigration Services, Department of Homeland Security.

[FR Doc. 2014–21499 Filed 9–9–14; 8:45 am]

BILLING CODE 9111–97–P

DEPARTMENT OF HOMELAND SECURITY

U.S. Citizenship and Immigration Services

[OMB Control Number 1615–0104]

Agency Information Collection Activities: Petition for U Nonimmigrant Status, Form I–918, and Supplements A and B of Form I–918; Revision of a Currently Approved Collection

ACTION: 60-Day Notice.

SUMMARY: The Department of Homeland Security (DHS), U.S. Citizenship and Immigration Services (USCIS) invites the general public and other Federal agencies to comment upon this proposed revision of a currently approved collection of information or new collection of information. In accordance with the Paperwork Reduction Act (PRA) of 1995, the information collection notice is published in the **Federal Register** to obtain comments regarding the nature of the information collection, the categories of respondents, the estimated burden (i.e. the time, effort, and resources used by the respondents to respond), the estimated cost to the respondent, and the actual information collection instruments.

DATES: Comments are encouraged and will be accepted for 60 days until November 10, 2014.

ADDRESSES: All submissions received must include the OMB Control Number 1615–0104 in the subject box, the agency name and Docket ID USCIS–2010–0004. To avoid duplicate submissions, please use only one of the following methods to submit comments:

(1) *Online.* You may access the **Federal Register** Notice and submit comments via the Federal eRulemaking Portal Web site by visiting *www.regulations.gov.* In the search box either copy and paste, or type in, the e-Docket ID number USCIS–2010–0004. Click on the link titled Open Docket Folder for the appropriate Notice and supporting documents, and click the Comment Now tab to submit a comment;

(2) *Email.* Submit comments to *USCISFRComment@uscis.dhs.gov;*

(3) *Mail.* Submit written comments to DHS, USCIS, Office of Policy and Strategy, Chief, Regulatory Coordination Division, 20 Massachusetts Avenue NW., Washington, DC 20529–2140.

SUPPLEMENTARY INFORMATION:

Comments

Regardless of the method used for submitting comments or material, all submissions will be posted, without change, to the Federal eRulemaking Portal at *http://www.regulations.gov,* and will include any personal information you provide. Therefore, submitting this information makes it public. You may wish to consider limiting the amount of personal information that you provide in any voluntary submission you make to DHS. DHS may withhold information provided in comments from public viewing that it determines may impact the privacy of an individual or is offensive. For additional information, please read the Privacy Act notice that is available via the link in the footer of *http://www.regulations.gov.*

Note: The address listed in this notice should only be used to submit comments concerning this information collection. Please do not submit requests for individual case status inquiries to this address. If you are seeking information about the status of your individual case, please check ''My Case Status'' online at: *https://egov.uscis.gov/cris/Dashboard.do,* or call the USCIS National Customer Service Center at 1–800–375–5283.

Written comments and suggestions from the public and affected agencies should address one or more of the following four points:

(1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

Overview of This Information Collection

(1) *Type of Information Collection:* Extension, Without Change, of a Currently Approved Collection.

(2) *Title of the Form/Collection:* Petition for U Nonimmigrant Status; and Supplement A and B.

(3) *Agency form number, if any, and the applicable component of the DHS sponsoring the collection:* Form I–918; USCIS.

(4) *Affected public who will be asked or required to respond, as well as a brief abstract: Primary: Individuals or Households.* This application permits victims of certain qualifying criminal activity and their immediate family members to apply for temporary nonimmigrant status.

(5) *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond:* Form I–918—26,400 responses at 5 hours per response; Supplement A—17,808 responses at 1.5 hour per response; Supplement B—26,400 responses at 1 hour per response, as well as 44,208 biometric-related responses at 1.17 hours (1 hour and 10 minutes).

(6) *An estimate of the total public burden (in hours) associated with the collection:* 236,835.36 annual burden hours.

If you need a copy of the information collection instrument with instructions, or additional information, please visit the Federal eRulemaking Portal site at: *http://www.regulations.gov.* We may also be contacted at: USCIS, Office of Policy and Strategy, Regulatory Coordination Division, 20 Massachusetts Avenue NW., Washington, DC 20529–2140, Telephone number 202–272–8377.

Dated: September 4, 2014.

Laura Dawkins,

Chief, Regulatory Coordination Division, Office of Policy and Strategy, U.S. Citizenship and Immigration Services, Department of Homeland Security.

[FR Doc. 2014–21501 Filed 9–9–14; 8:45 am]

BILLING CODE 9111–97–P

DEPARTMENT OF THE INTERIOR

Bureau of Safety and Environmental Enforcement

[Docket ID BSEE–2014–0004; OMB Control Number 1014–0018; 14XE1700DX EEEE500000 EX1SF0000.DAQ000]

Information Collection Activities: Oil and Gas Drilling Operations; Submitted for Office of Management and Budget (OMB) Review; Comment Request

ACTION: 30-day notice.

SUMMARY: To comply with the Paperwork Reduction Act of 1995 (PRA), BSEE is notifying the public that we have submitted to OMB an information collection request (ICR) for review and approval of the paperwork requirements in the regulations under Subpart D, *Oil and Gas Drilling Operations.* This notice also provides

the public a second opportunity to comment on the revised paperwork burden of these regulatory requirements.

DATES: You must submit comments by October 10, 2014.

ADDRESSES: Submit comments by either fax (202) 395–5806 or email (*OIRA_Submission@omb.eop.gov*) directly to the Office of Information and Regulatory Affairs, OMB, Attention: Desk Officer for the Department of the Interior (1014–0018). Please provide a copy of your comments to BSEE by any of the means below.

- Electronically go to *http://www.regulations.gov.* In the Search box, enter BSEE–2014–0004 then click search. Follow the instructions to submit public comments and view all related materials. We will post all comments.
- Email *nicole.mason@bsee.gov,* fax (703) 787–1546, or mail or hand-carry comments to the Department of the Interior; Bureau of Safety and Environmental Enforcement; Regulations and Standards Branch; ATTN: Nicole Mason; 381 Elden Street, HE3313; Herndon, Virginia 20170–4817. Please reference ICR 1014–0018 in your comment and include your name and return address.

FOR FURTHER INFORMATION CONTACT: Nicole Mason, Regulations and Standards Branch, (703) 787–1605, to request additional information about this ICR. To see a copy of the entire ICR submitted to OMB, go to *http://www.reginfo.gov* (select Information Collection Review, Currently Under Review).

SUPPLEMENTARY INFORMATION:

Title: 30 CFR 250, Subpart D, *Oil and Gas Drilling Operations.*

Form(s): BSEE–0125; BSEE–0133, BSEE–0133S, and BSEE–0144.

OMB Control Number: 1014–0018.

Abstract: The Outer Continental Shelf (OCS) Lands Act at 43 U.S.C. 1334 authorizes the Secretary of the Interior to prescribe rules and regulations necessary for the administration of the leasing provisions of the Act related to mineral resources on the OCS. Such rules and regulations will apply to all operations conducted under a lease, right-of-way, or a right-of-use and easement. Operations on the OCS must preserve, protect, and develop oil and natural gas resources in a manner that is consistent with the need to make such resources available to meet the Nation's energy needs as rapidly as possible; to balance orderly energy resource development with protection of human, marine, and coastal environments; to ensure the public a fair and equitable return on the resources of the OCS; and to preserve and maintain free enterprise competition.

In addition to the general rulemaking authority of the OCS Lands Act at 43 U.S.C. 1334, section 301(a) of the Federal Oil and Gas Royalty Management Act (FOGRMA), 30 U.S.C. 1751(a), grants authority to the Secretary to prescribe such rules and regulations as are reasonably necessary to carry out FOGRMA's provisions. While the majority of FOGRMA is directed to royalty collection and enforcement, some provisions apply to offshore operations. For example, section 108 of FOGRMA, 30 U.S.C. 1718, grants the Secretary broad authority to inspect lease sites for the purpose of determining whether there is compliance with the mineral leasing laws. Section 109(c)(2) and (d)(1), 30 U.S.C. 1719(c)(2) and (d)(1), impose substantial civil penalties for failure to permit lawful inspections and for knowing or willful preparation or submission of false, inaccurate, or misleading reports, records, or other information. Because the Secretary has delegated some of the authority under FOGRMA to the Bureau of Safety and Environmental Enforcement (BSEE), 30 U.S.C. 1751 is included as additional authority for these requirements.

These authorities and responsibilities are among those delegated to BSEE.

The regulations at 30 CFR 250, subpart D, concern oil and gas drilling operations and are the subject of this collection. This request also covers any related Notices to Lessees and Operators (NTLs) that BSEE issues to clarify, supplement, or provide additional guidance on some aspects of our regulations.

This ICR includes four forms. In this submission, we have included a certification statement on all the forms to state that false submissions are subject to criminal penalties.

A minor change to include Alaska and Pacific OCS Regional contact information was made on Form BSEE–0144.

Once this ICR is approved, the revisions will be added to the forms and the eWell screen shot(s), and the revised PRA statement will be posted on the eWell Web site.

Regulations implementing these responsibilities are among those delegated to BSEE. Responses are mandatory or are required to obtain or retain a benefit. No questions of a sensitive nature are asked. The BSEE protects information considered proprietary under the Freedom of Information Act (5 U.S.C. 552) and DOI's implementing regulations (43 CFR 2), and under regulations at 30 CFR Part 250.197, *Data and information to be made available to the public or for limited inspection,* 30 CFR Part 252, *OCS Oil and Gas Information Program.*

The BSEE uses the information to ensure safe drilling operations and to protect the human, marine, and coastal environment. Among other things, BSEE specifically uses the information to ensure:

- The drilling unit is fit for the intended purpose;
- the lessee or operator will not encounter geologic conditions that present a hazard to operations;
- equipment is maintained in a state of readiness and meets safety standards;
- each drilling crew is properly trained and able to promptly perform well-control activities at any time during well operations; and
- compliance with safety standards; and
- the current regulations will provide for safe and proper field or reservoir development, resource evaluation, conservation, protection of correlative rights, safety, and environmental protection.

We also review well records to ascertain whether drilling operations have encountered hydrocarbons or H_2S and to ensure that H_2S detection equipment, personnel protective equipment, and training of the crew are adequate for safe operations in zones known to contain H_2S and zones where the presence of H_2S is unknown.

Frequency: On occasion, daily, weekly, monthly, quarterly, annually, and varies by section.

Description of Respondents: Potential respondents comprise Federal OCS oil, gas, or sulphur lessees and/or operators.

Estimated Reporting and Recordkeeping Hour Burden: The estimated annual hour burden for this ICR is a total of 102,512 hours. The following chart details the individual components and estimated hour burdens. In calculating the burdens, we assumed that respondents perform certain requirements in the normal course of their activities. We consider these to be usual and customary and took that into account in estimating the burden.

Citation 30 CFR 250 subpart D and NTL(s)	Reporting and recordkeeping requirement*	Hour burden	Average number of annual responses	Annual burden hours (rounded)
General Requirements				
402(b)	Request approval to use blind or blind-shear ram or pipe rams and inside BOP.	0.5	352 requests	176
403	Notify BSEE of drilling rig movement on or off drilling location (BSEE–0144).	0.2	BSEE–0144 312 forms	63
404	Perform operational check of crown block safety device; record results (weekly).	0.25	86 drilling rigs × 52 weeks = 4,472 records.	1,118
408, 409	Apply for use of alternative procedures and/or departures not requested in BSEE forms (including discussions with BSEE or oral approvals).	Burden covered under 1014–0025.	0.	
Subtotal			5,136	1,357
Apply for a Permit to Drill				
408–418, 420(a)(6); 423(b)(3), (c); 449(j), (k); 456(j); plus in subparts A, B, D, E, H, P, Q..	Submit Application for Permit to Drill (APD Form BSEE–0123 and BSEE–0123S) that includes any/all supporting documentation and requests for various approvals required in subpart D (including §§ 250.425(a), 427, 428, 432, 447(c), 448(b),(c), 451(g), 460, 490(c)) submitted via the form; upon request, make available to BSEE.	Burden covered under 1014–0025.		0
410(b); 417(b)	Reference Well and site-specific information approved in your Exploration Plan, Development and Production Plan, Development Operations Coordination Document in your APD.	Burdens pertaining to EPs, DPPs, DOCDs are covered under BOEM 1010–0151 and APDs are covered under 1014–0025.		0
416(g)(2)	Provide 72 hour advance notice of location of shearing ram tests or inspections; allow BSEE access to witness testing, inspections, and information verification.	0.25	156 notifications	39
416(g)(2)	Submit evidence that demonstrates that the Registered Professional Engineer/firm has the expertise and experience necessary to perform the verification(s); allow BSEE access to witness testing; verify info submitted to BSEE.	0.25	733 submittals	184
417(a), (b)	Collect and report additional information on case-by-case basis if sufficient information is not available.	5	46 reports	230
417(c)	Submit 3rd party review of drilling unit according to 30 CFR 250, subpart I.	Burden covered under 1014–0011.		0
418(e)	Submit welding and burning plan according to 30 CFR 250, subpart A.	Burden covered under 1014–0022.		0
Subtotal			935	453
Casing and Cementing Requirements				
420(b)(3)	Submit dual mechanical barrier documentation after installation.	0.75	533 submittals	400
420(b)(3)	Request approval for alternative options to installing barriers.	0.25	58 requests	15
423(a)	Request and receive approval from District Manager for repair.	0.5	86 requests	43
423(b)(4), (c)(2)	Perform pressure casing test; document results and make available to BSEE upon request.	0.75	1,606 tests	1,205
423(c)(5)	Immediately contact District Manager when problem corrected due to failed negative pressure test; submit a description of corrected action taken; and receive approval from District Manager to retest.	1	20 notifications	20
423(c)(7)	Submit documentation of successful negative pressure test in the End of Operations Report (EOR, Form BSEE–0125).	2	BSEE–0125 45 submittals.	90

Citation 30 CFR 250 subpart D and NTL(s)	Reporting and recordkeeping requirement*	Hour burden	Average number of annual responses	Annual burden hours (rounded)
424	Caliper, pressure test, or evaluate casing; submit evaluation results; request approval before resuming operations or beginning repairs (every 30 days during prolonged drilling).	1	68 requests	68
425(a)	Request approval from District Manager to use other test pressures for liners.	Burden covered under 1014–0025.		0
426	Record results of all casing and liner pressure tests	2	4,259 record results.	8,518
427(a)	Record results of all pressure integrity tests and hole behavior observations re-formation integrity and pore pressure.	2	4,226 record results.	8,452
Subtotal			10,901	18,811
Diverter System Requirements				
434; 467	Perform diverter tests when installed and once every 7 days; actuate system at least once every 24-hour period; record results (average 2 per drilling operation); retain all charts/reports relating to diverter tests/actuations at facility for duration of drilling well.	2	620 records	1,240
Subtotal			620	1,240
Blowout Preventer (BOP) System Requirements				
442(c)	Request alternative method for the accumulator system.	Burden covered under 1014–0022.	0.	
442(f)(3)	Demonstrate that your secondary control system will function properly.	5	6 validations	30
442(h)	Label all functions on all panels	1.5	45 panels	68
442(i)	Develop written procedures for management system for operating the BOP stack and LMRP.	8	39 procedures	312
442(j)	Establish minimum requirements for authorized personnel to operate critical BOP equipment; require training.	Burden covered under 1014–0008		0
446(a)	Document BOP maintenance and inspection procedures used; record results of BOP inspections and maintenance actions; maintain records for 2 years; make available to BSEE upon request.	3	86 records	258
447(c)	Request approval from District Manager to omit BOP pressure test. Indicate which casing strings and liners meet the criteria of this section.	Burden covered under 1014–0025.		0
449(j)(2)	Notify District Manager at least 72 hours prior to stump/initial test on seafloor.	0.25	150 notifications	38
449(j)(3)	Document all ROV intervention function test results; make available to BSEE upon request.	1	150 tests	150
449(k)	Document all autoshear and deadman function test results for your subsea BOP systems; make available to BSEE upon request..	Burden covered under 1014–0025.		0
450; 467	Document and record BOP pressure tests results, actuations and inspections; at a minimum every 14 days; as stated for components; sign as correct. Retain all records, including charts, reports, and referenced documents for the duration of drilling the well.	11	236 test results	2,596
451(c)	Record reason for postponing BOP test (on occasion—approx. 2/year) in driller's report.	0.25	86 records	22

Citation 30 CFR 250 subpart D and NTL(s)	Reporting and recordkeeping requirement*	Hour burden	Average number of annual responses	Annual burden hours (rounded)
451(g)	Demonstrate that well control procedures/well conditions will not place demands above its rating working pressure and obtain approval from District Manager.	Burden covered under 1014–0025.		0
Subtotal			798	3,474
Drilling Fluid Requirements				
456(b), (i)	Document/record in the driller's report every time you circulate drilling fluid; results of drilling fluid tests.	1	4,160 records	4,160
456(c), (f)	Perform various calculations; post calculated drill pipe, collar, and drilling fluid volume; as well as maximum pressures.	1	4,259 postings	4,259
456(j)	Submit detailed step-by-step procedures describing displacement of fluids with your APD (this submittal obtains District Manager approval).	Burden covered under 1014–0025.		0
458(b)	Record daily drilling fluid and materials inventory in drilling fluid report.	0.5	30,295 records	15,148
459(a)(3)	Request exception to procedure for protecting negative pressure area.	Burden included under 1014–0022.		0
Subtotal			38,714	23,567
Other Drilling Requirements				
449(j); 460; 465; plus in A, D, E, F, H, P, and Q.	Provide revised plans and the additional supporting information required by the cited regulations when you submit an Application for Permit to Modify (APM) (Form BSEE–0124) to BSEE for approval; or a Revised APM.	Burden covered under 1014–0026.		0
420(b)(3); 423(b)(7); 465(a); plus various ref in A, E, F, and P.	Submit Form BSEE–0125, End of Operations Report (EOR), and additional supporting information as required by the cited regulations.	2	BSEE–0125 279 submittals	558
460	Submit plans and obtain approval to conduct well test; notify BSEE before test.	Burden covered under 1014–0025.		0
461(a–b); 466(e); 468(a); NTL	Record and submit well logs and surveys run in the wellbore and/or charts of well logging operations (including but not limited to).	3	302 logs/surveys	906
	Record and submit directional and vertical-well surveys.	1	302 reports	302
	Record and submit velocity profiles and surveys	1	45 reports	45
	Record and submit core analyses	1	130 analyses	130
461(e)	Provide copy of well directional survey to affected leaseholder.	0.75	11 occasions	9
462(a)	Prepare and post well control drill plan for crew members.	0.5	314 plans	157
462(c)	Record results of well-control drills	1	8,632 results	8,632
463(b)	Request field drilling rules be established, amended, or canceled.	4	6 requests	24
465(a)(1) 428, 449(j) & k(1), 456(j)	Obtain approval to revise your drilling plan or change major drilling equipment by submitting a revised BSEE–0123, Application for Permit to Drill and BSEE–0123S, Supplemental APD Information Sheet.	Burden covered under 1014–0025.		0
Subtotal			10,021	10,763

Citation 30 CFR 250 subpart D and NTL(s)	Reporting and recordkeeping requirement*	Hour burden	Average number of annual responses	Annual burden hours (rounded)
Applying for a Permit to Modify and Well Records				
466, 467	Retain drilling records for 90 days after drilling is complete; retain casing/liner pressure, diverter, and BOP records for 2 years; retain well completion/well workover until well is permanently plugged/abandoned or lease is assigned.	2.15	3,526 records	7,581
468(b); 465(b)(3)	In the GOM OCS Region, submit drilling activity reports weekly on Forms BSEE–0133 (Well Activity Report) and BSEE–0133S (Bore Hole Data) and supporting information. (The burden includes approximately 1 hour per response for filling out these forms.).	1	BSEE–0133 4,160 submittals.	4,160
		1	BSEE–0133S 4,160 submittals.	4,160
468(c)	In the Pacific and Alaska OCS Regions during drilling operations, submit daily drilling reports.	1	33 wells × 365 days × 20% year = 2,409 reports.	2,409
	N/A in GOM			
469; NTL	As specified by region, submit well records, paleontological interpretations or reports, service company reports, and other reports or records of operations.	1.5	341 submissions	512
Subtotal			14,596	18,822
Hydrogen Sulfide				
490(c), (d)	Submit request for reclassification of H_2S zone; notify BSEE if conditions change.	Burden covered under 1014–0025.		0
490(f); also in 418(d)	Submit contingency plans for operations in H_2S areas (16 drilling, 6 work-over, 6 production).	30	28 plans	840
490(g)	Post safety instructions; document training; retain records at facility where employee works; train on occasion and/or annual refresher (approx. 2/year).	4	34 records	136
490(h)(2)	Document and retain attendance for weekly H_2S drills and monthly safety mtgs until operations completed or for 1 year for production facilities at nearest field office.	2	2,514 records	5,028
490(i)	Display warning signs—no burden as facilities would display warning signs and use other visual and audible systems.			0
490(j)(7–8)	Record H_2S detection and monitoring sensors during drilling testing and calibrations; make available upon request.	4	4,328 records	17,312
490(j)(12)	Propose alternatives to minimize or eliminate SO_2 hazards—submitted with contingency plans—burden covered under § 250.490(f)			0
490(j)(13) (vi)	Label breathing air bottles—no burden as supplier normally labels bottles; facilities would routinely label if not.			0
490(l)	Notify without delay of unplanned H_2S releases (approx. 2/year).			
		Oral 0.2	24 notifications	5
		Written 5	24 written reports.	120
490(o)(5)	Request approval to use drill pipe for well testing	2	4 requests	8
490(q)(1)	Seal and mark for the presence of H_2S cores to be transported—no burden as facilities would routinely mark transported cores			0
490(q)(9)	Request approval to use gas containing H_2S for instrument gas.	2	2 requests	4
490(q)(12)	Analyze produced water disposed of for H_2S content and submit results to BSEE.	3	164 submittals	492

Citation 30 CFR 250 subpart D and NTL(s)	Reporting and recordkeeping requirement*	Hour burden	Average number of annual responses	Annual burden hours (rounded)
Subtotal			7,122	23,945
Miscellaneous				
400–490	General departure or alternative compliance requests not specifically covered elsewhere in subpart D.	2	30 requests	60
NTL	Voluntary submit to USCG read only access to the EPIRB data for their moored drilling rig fleet before hurricane season.	.25	80 submittals	20
Subtotal			110	80
Total Burden			88,953	102,512

*The forms mentioned in this collection, for the most part, are currently submitted electronically using eWell. In the future, BSEE will be allowing the option of electronic reporting for certain requirements not necessarily associated with a form.

Estimated Reporting and Recordkeeping Non-Hour Cost Burden: We have not identified any non-hour cost burdens associated with this collection of information.

Public Disclosure Statement: The PRA (44 U.S.C. 3501, *et seq.,)* provides that an agency may not conduct or sponsor a collection of information unless it displays a currently valid OMB control number. Until OMB approves a collection of information, you are not obligated to respond.

Comments: Section 3506(c)(2)(A) of the PRA (44 U.S.C. 3501, *et seq.,*) requires each agency ''. . . to provide notice . . . and otherwise consult with members of the public and affected agencies concerning each proposed collection of information . . .'' Agencies must specifically solicit comments to: (a) Evaluate whether the collection is necessary or useful; (b) evaluate the accuracy of the burden of the proposed collection of information; (c) enhance the quality, usefulness, and clarity of the information to be collected; and (d) minimize the burden on the respondents, including the use of technology.

To comply with the public consultation process, on April 14, 2014, we published a **Federal Register** notice (79 FR 20897) announcing that we would submit this ICR to OMB for approval. The notice provided the required 60-day comment period. In addition, § 250.199 provides the OMB Control Number for the information collection requirements imposed by the 30 CFR Part 250, Subpart D regulations and forms. The regulation also informs the public that they may comment at any time on the collections of information and provides the address to which they should send comments. We received one comment in response to the **Federal Register** notice. We offer the following in response: the commenter has expressed concern over the certification statement we are adding to the forms associated with this collection will be ''*elevating*'' the accuracy of information submitted on the forms to ''*criminal*'' status. The certification statement on the forms is a standard statement on many Government forms. Anyone who knowingly submits false information to the Government may be subject to civil and criminal penalties even if the statement does not appear on the form. The statement is intended to remind submitters that there are penalties for intentional false statements and BSEE has a range of enforcement options available to ensure the Government has the information it needs to promote safe and environmentally protective operations on the OCS.

Another concern expressed by the commenter was in reference to information/questions on Form BSEE–0123 being unnecessary or already submitted in eWell. With respect to the information submitted on paper forms versus eWell, BSEE has initiated the eWell System for all three BSEE OCS Regions. To date, only the Gulf of Mexico Region has eWell fully operational. With that said, operators/lessees must be given the option to use paper forms until all three BSEE OCS Regions can utilize eWell. Currently 100 percent of all paper forms are being submitted in the Pacific OCS Region and the Alaska OCS Region.

In regards to the commenters concerns about proposed changes to Form BSEE–0125 being redundant with Form BOEM–0140, BSEE agrees this is duplicative information and has removed Nos. 34(a)-Bottom Hole Pressure and 34(b)-Bottom Hole Temperature from Form BSEE–0125.

With respect to the commenters concerns that BSEE is significantly underestimating the burden hours associated with Form BSEE–0123-Application for Permit to Drill (APD), BSEE agrees. Between the 60-day FR notice (79 FR 20897, April 14, 2014) associated with this collection and this submission, we removed the APD—BSEE–0123, including a revised APD, Supplemental APD Information Sheet (BSEE–0123S), and those regulatory requirements that were previously associated with this collection. We separated out these requirements and burdens and put them into a separate information collection so that both industry and BSEE will have a better understanding of the complexities associated with all the information that is submitted and will reflect more accurate burden estimates. The OMB approved the request and assigned the APD ICR with OMB Control Number 1014–0025 on April 29, 2014. As stated previously, all information collection **Federal Register** notices provide an opportunity to comment on the burdens during the 60- and 30-day comment period, as well as commenting to OMB anytime on the information collection burdens. We received no comments during the 60- or 30-day comment period during the APD ICR process.

Public Availability of Comments: Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Information Collection Clearance Officer: Cheryl Blundon, 703–787–1607.

Dated: August 21, 2014.

Robert W. Middleton,

Deputy Chief, Office of Offshore Regulatory Programs.

[FR Doc. 2014–21586 Filed 9–9–14; 8:45 am]

BILLING CODE 4310–VH–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–R4–ES–2014–N134; FXES11130400000C2–145–FF04E00000]

Endangered and Threatened Wildlife and Plants; Notice of Availability of a Technical/Agency Draft Recovery Plan for the Dusky Gopher Frog

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of availability and request for public comment.

SUMMARY: We, the Fish and Wildlife Service, announce the availability of the technical/agency draft recovery plan for the endangered dusky gopher frog. We request review and comment on this draft recovery plan from local, State, and Federal agencies, and the public.

DATES: In order to be considered, comments on the draft recovery plan must be received on or before November 10, 2014.

ADDRESSES: If you wish to review this technical/agency draft recovery plan, you may obtain a copy by visiting the Service's Mississippi Field Office Web site at *http://www.fws.gov/mississippiES/* or by contacting Linda LaClaire, U.S. Fish and Wildlife Service, Mississippi Ecological Services Field Office, 6578 Dogwood View Parkway, Jackson, MS 39213; tel. (601) 321–1126. If you wish to comment, you may submit your comments by one of the following methods:

1. You may submit written comments and materials to Linda LaClaire, at the above address.

2. You may hand-deliver written comments to our Mississippi Field Office, at the above address, or fax them to (601) 965–4340.

3. You may send comments by email to *linda_laclaire@fws.gov*. Please include ''Dusky Gopher Frog Recovery Plan Comments'' on the subject line.

For additional information about submitting comments, see the ''Request for Public Comments'' section below.

FOR FURTHER INFORMATION CONTACT: Linda LaClaire (see **ADDRESSES** above).

SUPPLEMENTARY INFORMATION: We, the Fish and Wildlife Service (Service), announce the availability of the technical/agency draft recovery plan for the endangered dusky gopher frog (*Rana sevosa*). The draft recovery plan includes specific recovery objectives and criteria the dusky gopher frog would have to meet in order for us to downlist it to threatened under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.;* Act). We request review and comment on this draft recovery plan from local, State, and Federal agencies, and the public.

Background

The dusky gopher frog was listed as an endangered species under the Act on December 4, 2001 (66 FR 62993). At the time of the original listing, the species was identified as the Mississippi gopher frog, a distinct population segment of what was then considered the dusky gopher frog (*Rana capito sevosa*). Subsequent to the listing, taxonomic research was completed that indicated the Mississippi gopher frog was different from other gopher frogs and warranted acceptance as its own species. In 2012, the Service officially recognized the listed entity as the dusky gopher frog, *Rana sevosa,* based on this research and the original description of the species given this name.

Dusky gopher frogs are terrestrial amphibians endemic to the longleaf pine ecosystem of southeastern Louisiana, coastal Mississippi, and coastal Alabama to the Mobile River drainage. Currently, it is only found at four localities in two Mississippi counties and has not been recently observed in either Alabama or Louisiana.

Approximately 625 hectares (1,544 acres) have been designated as critical habitat for the dusky gopher frog in St. Tammany Parish, Louisiana, and 1,996 hectares (4,933 acres) are designated in Forrest, Harrison, Jackson, and Perry Counties, Mississippi (77 FR 35118).

The dusky gopher frog has a Federal recovery priority number of 5, which indicates the species faces a high degree of threat and also has a low recovery potential.

Restoring an endangered or threatened animal or plant to the point where it is again a secure, self-sustaining member of its ecosystem is a primary goal of our endangered species program. To help guide the recovery effort, we prepare recovery plans for most listed species. Recovery plans describe actions considered necessary for conservation of the species; establish criteria for downlisting or delisting; and estimate time and cost for implementing recovery measures.

The Act requires the development of recovery plans for listed species, unless such a plan would not promote the conservation of a particular species. Section 4(f) of the Act requires us to provide public notice and an opportunity for public review and comment during recovery plan development. We will consider all information presented during a public comment period prior to approval of each new or revised recovery plan. We and other Federal agencies will take these comments into account in the course of implementing approved recovery plans.

Recovery Plan Components

The Service's recovery objectives are to work to reduce threats so that the dusky gopher frog may be downlisted to threatened status. Defining reasonable delisting criteria is not possible at this time, given the current low number of populations and individuals, lack of information about the species' biology, and magnitude of threats. Therefore, this recovery plan only establishes downlisting criteria for the dusky gopher frog.

Downlisting of the dusky gopher frog will be considered when:

1. Six viable metapopulations * are documented within blocks of recovery focus areas (described in Section II of the recovery plan) and are widely distributed across the range of the species. The six metapopulations would include a minimum of 12 breeding ponds and would be distributed as follows:

a. One metapopulation in Block #1 (*Louisiana.* Portions of St. Tammany, Tangipahoa, and Washington Parishes, west to the Tangipahoa River);

b. Two metapopulations each in Block #2 (*South-Central Mississippi.* North of State Hwy. 26, between the Pearl and Pascagoula Rivers; Forrest County and portions of Lamar, Pearl River, Perry, and Stone Counties) and Block #3 (*South Mississippi.* South of Hwy. 26, between the Pearl and Pascagoula Rivers; Hancock and Harrison Counties, and portions of Jackson, George, Pearl River, and Stone Counties); and

c. One metapopulation in either Block #4 (*Eastern Mississippi.* East of Pascagoula/Leaf Rivers; portions of George, Greene, Jackson, and Wayne Counties) or Block #5 (*Alabama.* West of the Mobile River Delta; Mobile and Washington Counties, small portion of Choctaw County).

2. Long-term monitoring (10+ years) of each metapopulation documents population viability (viability standard to be defined through a recovery task). The 10-year timeframe will allow

monitoring recruitment events and other population attributes in a species that has been characterized by highly variable reproductive and survival rates. In each of at least two annual breeding events within a 3-year period, a total of 30 egg masses per metapopulation must be documented and recruitment must be verified.

3. Breeding and adjacent upland habitats within the six metapopulations are protected long term through management agreements, public ownership, or other means, in sufficient quantity and quality (to be determined by recovery task) to support growing populations.

4. Studies of the dusky gopher frog's biological and ecological requirements have been completed, and any required recovery measures discovered during these studies are developed and implemented.

* Information defining what constitutes a viable metapopulation can be found in the Service's Technical/Agency draft recovery plan.

Request for Public Comments

We request written comments on the draft recovery plan. We will consider all comments we receive by the date specified in **DATES** prior to final approval of the plan.

Public Availability of Comments

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority

The authority for this action is section 4(f) of the Endangered Species Act, 16 U.S.C. 1533 (f).

Dated: September 3, 2014.

Mike Oetker,

Acting Regional Director, Southeast Region, U.S. Fish and Wildlife Service.

[FR Doc. 2014–21549 Filed 9–9–14; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16314; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from two sites in Sheboygan County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1906, human remains representing, at minimum, one individual (1969A.90.40–.56) were removed from an unknown site within the Black River Village complex in Sheboygan County, WI. The fragmentary human remains were collected from the surface by Charles E. Brown, who donated them to the State Historical Society in 1910. The human remains were determined to represent one individual of indeterminate age and sex. No known individuals were identified. No associated funerary objects are present.

In 1927, human remains representing, at minimum, two individuals (1978.362.118) were removed from the Andrae Village Site (47–SB–0062), which is within the Black River Village complex, in Sheboygan County, WI. The cremated human remains were excavated by archeologist Leland Cooper, who donated the human remains to the State Historical Society at an unknown date. The human remains were determined to represent an adult and an infant, both of indeterminate sex. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of three individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains were removed is the aboriginal land of the Citizen Potawatomi Nation,

Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.

- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Menominee Indian Tribe of Wisconsin.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Menominee Indian Tribe of Wisconsin; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona (hereafter referred to as ''The Aboriginal Land Tribes'').

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21453 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16402; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: U.S. Department of Defense, Army, National Museum of Health and Medicine, Silver Spring, MD

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The National Museum of Health and Medicine has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the National Museum of Health and Medicine. If no additional requestors come forward, transfer of control of the human remains to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the National Museum of Health and Medicine at the address in this notice by October 10, 2014.

ADDRESSES: Dr Franklin E. Damann, National Museum of Health and Medicine, 2460 Linden Lane, Building 2500, Silver Spring, MD 20910, telephone (301) 319–3306, email *franklin.e.damann2.civ@mail.mil.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the National Museum of Health and Medicine, Silver Spring, MD. The human remains were removed from Amaknak Island, Captain's Bay, Unalaska, AK.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the National Museum of Health and Medicine professional staff in consultation with representatives of the Qawalangin Tribe of Unalaska.

History and Description of the Remains

A single human skeleton was collected in 1872 by W.H. Dall on behalf of the Smithsonian Institution. The human remains were found in a compartment of what had been a large community house on Amaknak Island, Captain's Bay, Unalaska, AK.

The human remains were received at the Army Medical Museum (AMM) from the U.S. National Museum Smithsonian Institution on November 15, 1872, and accessioned into the AMM as PS 12937 on November 21, 1872.

On August 24, 1904 by order of the AMM Curator James Carroll, the human remains were returned to the U.S. National Museum, Smithsonian Institution, except for the pathological portions of the skeleton. These portions remain to this day as PS 12937 at the National Museum of Health and Medicine (NMHM), formally known as the AMM.

Accession documents relating to the collection history of these human remains were retained by the Smithsonian. Through a recent review of records in consultation with the Smithsonian Institution Repatriation Office, provenance for these remains has been reassociated. No known individuals were identified. No associated funerary objects are present.

The human remains consist of the spine, hips, and ribs. The remains show ankylosing spondylitis, kyphosis, and fusion of the interpubic joint. Morphological characteristics of the hips indicate male sex. The remains are those of an adult.

Accession file information indicates that the individual is an Aleut male approximately 40 years of age from Amaknak Island, Captain's Bay, Unalaska. Evidence of a male with ankylosing spondylitis and kyphosis is consistent with the biological and pathological description in the accession file documents.

Determinations Made by the National Museum of Health and Medicine

Officials of the National Museum of Health and Medicine have determined that:

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and the Qawalangin Tribe of Unalaska.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Dr Franklin E. Damann, National Museum of Health and Medicine, 2460 Linden Lane, Building 2500, Silver Spring, MD 20910, telephone (301) 319–3306, email *franklin.e.damann2.civ@mail.mil,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Qawalangin Tribe of Unalaska may proceed.

The National Museum of Health and Medicine is responsible for notifying the Qawalangin Tribe of Unalaska that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21518 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16313; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the Diedrick Burials site, Rock County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

Between 1985 and 1990, human remains representing, at minimum, three individuals (HP.RO–0364.1) were removed from the Diedrick Burials site (47–RO–0364) in Rock County, WI. The human remains were initially disturbed by plowing and subsequently surface collected by the land owners over the course of several years. Archeological field schools from College of Lake County were held on the site in 1989 and 1990, at which time more human remains were discovered. In 1990, the human remains were reported to the State Historical Society's Burial Sites Preservation Office and possession of the human remains was transferred to the State Historical Society. The human remains were determined to represent two adults and one juvenile, all of indeterminate sex. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial and State Historical Society records.

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of three individuals of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.

• According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.

• Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay

Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter referred to as ''The Aboriginal Land Tribes'').

- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21500 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16308; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and associated funerary objects and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains and associated funerary objects were removed from the Kolterman Mound Group, Dodge County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1954, human remains representing, at minimum, one individual (1954.1458) were removed from Mound 17 in the Kolterman Mound Group (47–DO–0155) in Dodge County, WI. Two otter mounds were excavated by archeologists from several institutions, including the State Historical Society of Wisconsin, before they were destroyed by road construction. Both mounds contained cremated burials and funerary objects, which were donated to the State Historical Society by the Wisconsin Archeological Survey in 1954. Sometime between 1954 and 1969, the human remains from both mounds were loaned to the University of Wisconsin-Madison, Department of Anthropology. The remains from Mound 17 were returned to the State Historical Society in 2011, but the remains from Mound 18 were destroyed through chemical testing done by the University of Wisconsin-Madison. No known individuals were identified. The seven associated funerary object are a chert flake (1954.1458.1), a reconstructed Madison cord impressed ceramic vessel (1954.1449), a group of ceramic sherds not used in the vessel reconstruction (1954.1449A–I), a quartz projectile point (1954.1450), a chert project point (1954.1451), a chert flake (1954.1454.1), and a fragmentary pipe (1954.1457).

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, funerary objects, and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(3)(A), the seven objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.

• Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and associated funerary objects and any present-day Indian tribe.

• According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Ho-Chunk Nation of Wisconsin; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona; and the Winnebago Tribe of Nebraska.

• Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter, with the Ho-Chunk Nation of Wisconsin and the Winnebago Tribe of Nebraska, referred to as ''The Aboriginal Land Tribes'').

• Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains and associated funerary objects may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21511 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16409; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: Stephen F. Austin State University, Nacogdoches, TX

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Stephen F. Austin State University has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the Stephen F. Austin State University. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the Stephen F. Austin State University at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Jerry Williams, Stephen F. Austin State University, P.O. Box 13047, SFA Station, Nacogdoches, TX 75962, telephone (936) 468–2306.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of Stephen F. Austin State University, Nacogdoches, TX. The human remains and associated funerary objects were removed from sites in the Big Cypress Creek Basin in Camp County, TX.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in

this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the Stephen F. Austin University (SFA) professional staff, Barbara Jackson, and SFA students Melanie Johnson, Brittney Simpson, and Sarah Calabrese, under the supervision of George Avery and Leslie Cecil, and in conjunction with Archeological & Environmental Consultants, LLC, Austin, TX, and included Tim Pertulla, Mark Walters, Bo Nelson, and Zac Selden, SFA Research Associate, in consultation with representatives of representatives of the Caddo Nation of Oklahoma.

History and Description of the Remains

The Robert L. Turner Jr. Collection contains human remains and associated funerary objects from four sites, all of which are from the Big Cypress Creek Basin. In 2012, Robert L. Turner Jr. donated associated funerary objects to the SFA Archaeological Laboratory. A few pieces of bone and some teeth were also in the collection. Most of the human remains were donated to the Texas Archaeological Research Laboratory (TARL) at the University of Texas in Austin. In 2013, the human remains were transferred from TARL to the SFA Archaeology Laboratory.

Between 1963 and 1967, human remains representing, at minimum, 29 individuals (Turner 1978:1) were removed from the Tuck Carpenter site (41CP5) in Camp County, TX. The human remains from Burial 6 are from an adult female. The human remains from Burial 7 are from an adult female. The human remains from Burial 9 include two teeth. One is a molar and the other is a canine. There is also a fragment of a tooth that is too small to identify. The human remains from Burial 10 are from an adult female. The human remains from Burial 11 are from an adult of indeterminate gender. The human remains from Burial 13 are from an adult female. The human remains from Burial 14 are from an adult female. The human remains from Burial 15 are from an older adult male. The human remains from Burial 16 are from an adult of indeterminate gender. The human remains from Burial 17 are from an adult female. The human remains from Burial 18 are from an older adult male. The human remains from Burial 19 are from an adult female. The human remains from Burial 20 are from an adult female. The human remains from Burial 21 North are from an adult male. The human remains from Burial 21 South are from an adult of indeterminate gender. The human remains from Burial 26 are from an adult of indeterminate gender. The human remains from Burial 27 include two teeth and four bone fragments. One tooth is a molar and the other is either a molar or a premolar. Three of the bone fragments are tooth roots and the fourth is a bone fragment from the right mandible bone. The human remains from Burial 29 are from an adult of indeterminate gender. The human remains from Burial 31 are from an adult of indeterminate gender. The human remains from Burial 32 are from an adult male. The human remains from Burial 33 are from an adult of indeterminate gender. The human remains from Burial 34 are from an adult male and an adolescent of indeterminate gender. The human remains from Burial 36 are from an adolescent of indeterminate gender. The human remains from Burial 38 are from an adult female. The human remains from Burial 39 are from an adult female. The human remains from Burial 40 are from an older adult female. The human remains from Burial 41 are from an adult male. The human remains from Burial 45 are from an adult female. No known individuals were identified. The 715 associated funerary objects are 106 vessels, 159 lithics, 2 pipes, 38 shell fragments, 108 animal bones, 210 miscellaneous sherds, and 92 other objects.

Between 1963 and 1967, human remains representing, at minimum, 2 individuals (Turner 1978:1) were removed from an unknown location, possibly from the Tuck Carpenter site (41CP5) in Camp County, TX. The human remains from two unknown burials are from two adult males. No known individuals were identified. No associated funerary objects are present.

Between 1966 and 1984, human remains representing, at minimum, 2 individuals (Perttula et al. 2010b) were removed from the Johns site (41CP12) in Camp County, TX. The human remains from Burial 4 in the collection include fourteen teeth. There are five molars, seven premolars, and two incisors. The human remains from Burial 16 include fourteen teeth. There are twelve molars, one premolar, and an incisor. No known individuals were identified. The 13 associated funerary objects are 8 vessels and 5 lithics.

In 1958, human remains representing, at minimum, 1 individual (Perttula et al. 2010a) were removed from the Craydon Adkins #2 site (41CP17) in Camp County, TX. The human remains are several teeth (n=5) and bone fragments (n=3) from Burial 4. No known individuals were identified. The 1 associated funerary object is a vessel.

Determinations Made by the Stephen F. Austin University

Officials of Stephen F. Austin State University have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 34 individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the 729 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and associated funerary objects and the Caddo Nation of Oklahoma.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Dr. Jerry Williams, Stephen F. Austin State University, P.O. Box 13047, SFA Station, Nacogdoches, TX 75962, telephone (936) 468–2306, before October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Caddo Nation of Oklahoma may proceed.

Stephen F. Austin State University is responsible for notifying the Caddo Nation of Oklahoma that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21486 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16315; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and associated funerary objects and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org*.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains and associated funerary objects were removed from three sites in Grant County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1948, human remains representing, at minimum, one individual (1949.154) were removed from the Dewey Mound Group 2 site (47–GT–0022) in Grant County, WI. The human remains and associated funerary objects were discovered by property renter George Foehring when he was digging post holes in a conical mound located on the site. State Historical Society curator John Jenkins acquired the human remains and associated funerary objects from Foehring in 1949. The human remains were determined to represent an adult male. No known individuals were identified. The associated funerary objects are one lot of seed beads (1949.155).

In 1980, human remains representing, at minimum, three individuals (F1998.114.1) were removed from the Bade Site (47–GT–0365) in Grant County, WI. The human remains and associated funerary object were excavated from a conical mound by archeologists from the State Historical Society for a highway expansion project. The human remains were determined to be those of a juvenile and two infants. No known individuals were identified. The associated funerary object is one Spring Hollow Plain vessel (F1998.114.2).

In 1964, human remains representing, at minimum, twelve individuals (F1996.6.1) were removed from the Linden Valley Mound Group (47–GT–0610) in Grant County, WI. The human remains were disturbed by construction of a culvert in Wyalusing State Park. A park employee collected the human remains and contacted the State Historical Society. State Historical Society archeologists took possession of the human remains, excavated the area, and discovered more human remains. The human remains were determined to represent two children of indeterminate sex, two young adult females, four adult males, three adult of indeterminate sex, and one infant. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, reported funerary objects, in some instances, skeletal analysis, in some instances, and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of sixteen individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the two objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and associated funerary objects and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Sac & Fox Nation of Missouri in Kansas and Nebraska; Sac & Fox Nation, Oklahoma; Sac & Fox Tribe of the Mississippi in Iowa; Ho-Chunk Nation of Wisconsin, and Winnebago Tribe of Nebraska.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Ho-Chunk Nation of Wisconsin; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of

Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Sac & Fox Nation of Missouri in Kansas and Nebraska; Sac & Fox Nation, Oklahoma; Sac & Fox Tribe of the Mississippi in Iowa; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; White Earth Band of the Minnesota Chippewa Tribe, Minnesota; and the Winnebago Tribe of Nebraska (hereafter referred to as ''The Aboriginal Land Tribes'').

• Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains and associated funerary objects may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21452 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16311; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from two sites in Racine County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1909, human remains representing, at minimum, one individual (A00952.1) were removed from an unknown site in Racine County, WI. The human remains were discovered when the foundation of a house located on the junction of the Fox and White Rivers gave way. Richard Leach acquired the human remains from the landowner and donated them to the State Historical Society in 1909. The human remains were determined to represent a young adult female. No known individuals were identified. No associated funerary objects are present.

In 1907, human remains representing, at minimum, one individual (A00029) were removed from the Gaetz Group (47–RA–0022) in Racine County, WI. The human remains were excavated by Charles E. Brown from a conical mound located on the northeast shore of Wind Lake. Brown left most of the remains in situ and the mound was restored. However, he retained a calvarium in three fragments, which the Wisconsin Archaeological Society donated to the State Historical Society in 1908. The calvarium was determined to be from an adult of indeterminate sex. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, skeletal analysis, and State Historical Society records.

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of two individuals of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.

• According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains

were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.

• Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter referred to as ''The Aboriginal Land Tribes'').

• Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21508 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16412; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, University of Arizona, has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the Arizona State Museum, University of Arizona. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the Arizona State Museum, University of Arizona, Tucson, AZ. The human remains and associated funerary objects were removed from Pima County, AZ.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the Arizona State Museum (ASM) professional staff in consultation with representatives of Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona.

History and Description of the Remains

In 1996, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ AA:12:—Camino de la Tierra, in Tucson, Pima County, AZ. The remains were collected by the Pima County Sheriff's Department and assigned a case number. The medical examiner determined that the human remains

were prehistoric and likely Native American. The human remains were transferred from the Pima County Office of the Medical Examiner to ASM but were not assigned an accession number. No known individuals were identified. No associated funerary objects are present.

In 1967, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ AA:12:—Tucson Site 9, located on private land in Tucson, Pima County, AZ. The legally authorized excavation was conducted by ASM under the direction of James Ayres and Walter Birkby. The collection was brought to ASM but no accession number was assigned. The remains were assessed as likely Native American, based on their condition. No known individuals were identified. The one associated funerary object is an animal bone.

In 1991, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ AA:16:—ML91–0611, located on private land in Tucson, Pima County, AZ. The human remains were collected by the Tucson Police Department and assigned case number ML91–0611. Forensic anthropologists at the Human Identification Laboratory, University of Arizona determined that the human remains were prehistoric and likely Native American. The collection was then brought to ASM but was not assigned an accession number. No known individuals were identified. The eight associated funeral objects are eight stones.

The absence of diagnostic artifacts and lack of known archeological contexts related to these discoveries prevents identification of an earlier group.

Determinations Made by the Arizona State Museum

Officials of ASM have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the physical characteristics of the remains.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 3 individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the 9 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and associated funerary objects and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Tohono O'odham Nation of Arizona.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains and associated funerary objects may be to the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona may proceed.

The Arizona State Museum is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21491 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16432; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org*.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the Holman Burial site, Waupaca County, WI.

This notice is published as part of the National Park Service's administrative

responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1941, human remains representing, at minimum, two individuals (F1996.14) were removed from the Holman Burial site (47–WP–0060) in Waupaca County, WI. Beach Holman, the grandson of the property owner, and Robert Jones discovered the human remains after they were partially exposed, and partly destroyed, by a washout on the north shore of Lake Holman in the Town of Dayton. Jones donated the human remains to the State Historical Society in 1942. They were determined to represent two adults of indeterminate sex. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of two individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Menominee Indian Tribe of Wisconsin.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to the Menominee Indian Tribe of Wisconsin.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Menominee Indian Tribe of Wisconsin may proceed.

The State Historical Society of Wisconsin is responsible for notifying the Forest County Potawatomi Community, Wisconsin; the Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin that this notice has been published.

Dated: August 3, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21496 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16309; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the Dumb Bell Group, Fond du Lac County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1992, human remains representing, at minimum, one individual (HP.FD–0065.1) were removed from the Dumb Bell Group (47–FD–0065) in Fond du Lac, WI. The human remains were originally disturbed in the 1980s during the construction of a swimming pool. In October 1992, human remains were discovered by the property owners in backfill from the swimming pool construction. Archeologists from the State Historical Society's Burial Sites Preservation Office took possession of the human remains. The human remains were determined to represent a young adult male. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice

are Native American based on the location and context of the burial, skeletal analysis, and State Historical Society records.

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.

• Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter referred to as ''The Aboriginal Land Tribes'').

• Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21504 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16316; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from an unknown site in Manitowoc County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

At an unknown date, human remains representing, at minimum, one individual (A00036) were removed from an unknown site within the Two River Village Sites complex in Manitowoc County, WI. The remains were donated to the State Historical Society by the Wisconsin Archeological Society in 1908. They were determined to be those of a young child 16–32 months old. No known individuals were identified. No associated funerary objects are present.

At an unknown date, human remains representing, at minimum, one individual (A00570) were removed from an unknown site within the Two River Village Sites complex in Manitowoc County, WI. The remains were donated to the Historical Society by the Wisconsin Trust Company in 1909. There were determined to be those of an adult male. No known individuals were

identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, skeletal analysis, and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of two individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Menominee Indian Tribe of Wisconsin.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Menominee Indian Tribe of Wisconsin; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona (hereafter referred to as ''The Aboriginal Land Tribes'').

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21451 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16312; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the Cooper's Shores site, Rock County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1930, human remains representing, at minimum, five individuals (F1996.2.1 and F1996.2.2) were removed from the Cooper's Shores site (47–RO–0002) in Rock County, WI. The human remains were disturbed by the land owner during a construction project on the north shore of the Rock River at the point where it flows into Lake Koshkonong. The land owner removed the human remains and contacted Charles E. Brown of the Historical Society, who investigated the site and took possession of the human remains. The human remains were determined to be those of an adult female, two adult males, and two children of indeterminate sex. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burials, objects found with the burials (not in the collection), and State Historical Society records.

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of five individuals of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.

• According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.

• Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter referred to as ''The Aboriginal Land Tribes'').

• Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21502 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16319; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the Richter's Landing site, Winnebago County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1900, human remains representing, at minimum, two individuals (A10542 & A10543) were removed from the Richter's Landing site (47–WN–0075) in Winnebago County, WI. Two crania were removed from a Native American cemetery on the northeast shore of Boom Bay on Lake Poygan by Professor E.A. Notz. Dr. E.G.W. Notz donated the crania to the State Historical Society in 1932. One cranium (A10542) was loaned to the University of Wisconsin-Madison, Department of Anthropology in 1949 and returned to the State Historical Society in 2011. The human remains were determined to represent two adult females. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, skeletal analysis, and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of two individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska may proceed.

The State Historical Society of Wisconsin is responsible for notifying the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21447 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16321; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and associated funerary objects and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains and associated funerary objects were removed from seven sites in Door County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1986 or 1987, human remains representing, at minimum, two individuals (HP.DR–0001.1) were removed from the Heins Creek site (47–DR–0001) in Door County, WI. The human remains were exposed by erosion from the Lake Michigan shore near the mouth of Heins Creek, were collected by a local resident, and were turned over to the Door County Sheriff's Office. The human remains were transferred to the State Historical Society's Burial Sites Preservation Program in 1988. The human remains were determined to be those of an adult male and an adult of indeterminate sex. No known individuals were identified. No associated funerary objects are present.

In 1994, human remains representing, at minimum, one individual (2005.161.9.DR11.AS1E2BP–14–16 & 2005.161.9.DR11.AS1E2BP–20–31) were

removed from the Shanty Bay site (47–DR–0011) in Door County, WI. The human remains were uncovered during a DNR excavation of the site, located in Peninsula State Park on the east shore of Nicolet Bay, in preparation of a drainage project. The State Historical Society's Burial Sites Preservation Program was notified, and it was agreed that the burial be exposed, documented, and reburied. However, some fragmentary human remains were discovered during washing and sorting of other artifacts and were misidentified as faunal bone. The limited skeletal analysis done of the human remains left in situ suggested that they were of an elderly female. No known individuals were identified. No associated funerary objects are present.

In 1989, human remains representing, at minimum, 22 individuals (HP.DR–0036.1) were removed from the Circle Ridge site (47–DR–0036) in Door County, WI. The human remains were disturbed by sewer and water line construction in the Circle Ridge Subdivision. The City of Sturgeon Bay Police Department notified the State Historical Society's Burial Sites Preservation Program staff of the disturbance, and they excavated the human remains. The human remains were determined to be those of seven adult males, five adult females, two adults of indeterminate sex, and eight children of indeterminate sex. No known individuals were identified. The one associated funerary object is a tubular copper bead (HP.DR–0036.2).

In 2004, human remains representing, at minimum, one individual (HP.DR–0043.1) were removed from the Shoemaker's Point Mounds and Cemetery (47–DR–0043) in Door County, WI. The human remains were discovered by the landowner in sand backfill during house construction. The landowner sent the remains to the State Historical Society's Burial Sites Preservation Program on September 23, 2004, for identification. The human remains were determined to be those of an adult female. No known individuals were identified. No associated funerary objects are present.

In 1991, human remains representing, at minimum, one individual (HP.DR–0085.1) were removed from the Cave Point Park site (47–DR–0085) in Door County, WI. The human remains were exposed by a downed tree along the Lake Michigan shoreline. The manager of Cave Point Park notified the State Historical Society's Burial Sites Preservation Program of the exposed remains. A staff archeologist collected the exposed remains and reported that much of the burial had fallen into Lake Michigan. The human remains were determined to be those of an adult female. No known individuals were identified. No associated funerary objects are present.

In 1988, human remains representing, at minimum, three individuals (HP.DR–0113.1) were removed from the Boyer's Bluff Cave Burial site (47–DR–0113) in Door County, WI. The human remains were discovered in a cave on Boyer's Bluff by a rock climber, who reported the discovery to the police. The police then transferred them to the State Historical Society's Burial Sites Preservation Program. The human remains were determined to be those of an adult male, a juvenile of indeterminate sex, and a young adult of indeterminate sex. No known individuals were identified. No associated funerary objects are present.

At an unknown date, human remains representing, at minimum, two individuals (HP.DR–0457.1) were removed from the Whitefish Dunes State Park Burial site (47–DR–0457) in Door County, WI. The human remains, consisting of a cranium and a mandible, were transferred from the Door County Sheriff's Office to the State Historical Society's Burial Sites Office in October 1988. The human remains were determined to be those of an adult male and an adult female. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial sites, skeletal analysis, in some instances, and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 32 individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the one object described in this notice is reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Forest County Potawatomi Community, Wisconsin.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Menominee Indian Tribe of Wisconsin.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains and associated funerary objects may be to the Forest County Potawatomi Community, Wisconsin, and the Menominee Indian Tribe of Wisconsin.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Forest County Potawatomi Community, Wisconsin, and the Menominee Indian Tribe of Wisconsin may proceed.

The State Historical Society of Wisconsin is responsible for notifying the Forest County Potawatomi Community, Wisconsin, and the Menominee Indian Tribe of Wisconsin that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21495 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16301; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: University of Wisconsin-Madison, Department of Anthropology, Madison, WI, and the State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The University of Wisconsin-Madison Department of Anthropology and the State Historical Society of

Wisconsin have completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and have determined that there is no cultural affiliation between the human remains and associated funerary objects and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the University of Wisconsin-Madison Department of Anthropology. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the University of Wisconsin-Madison Department of Anthropology at the address in this notice by October 10, 2014.

ADDRESSES: Sissel Schroeder, University of Wisconsin-Madison, Department of Anthropology, 1180 Observatory Drive, 5240 Social Sciences Building, Madison, WI 53706, telephone (608) 262–0317, email *sschroeder2@wisc.edu.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the University of Wisconsin-Madison Department of Anthropology, Madison, WI and State Historical Society of Wisconsin, Madison, WI. The human remains and associated funerary objects were removed from Winnebago County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the University of Wisconsin-Madison (UW-Madison) Department of Anthropology professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Menominee Indian Tribe of Wisconsin; Sokaogon Chippewa Community, Wisconsin; and the Stockbridge Munsee Community of Wisconsin. The Winnebago Tribe of Nebraska was invited to consult but did not send representatives.

History and Description of the Remains

In 1953, human remains representing, at minimum, 46 individuals were removed from the Reigh site in Winnebago County, WI. The Reigh site was identified decades earlier and reports of site disturbances date to the 1890s. The human remains were originally discovered when the landowner (M.C. Reigh) used heavy machinery to remove gravel from the vicinity of the site in 1953. This prompted archeological salvage excavations conducted by Hiroshi Daifuku and Warren Wittry, both of the Wisconsin Historical Society, and David Baerreis of the University of Wisconsin-Madison. The site was later disturbed and excavated by avocationals in 1956. The site is affiliated with the Old Copper Culture of the Middle Archaic Period (c.a.1000 B.C. to 3000 B.C.). The human remains have been housed at both the State Historical Society of Wisconsin and the UW-Madison Department of Anthropology since the time of excavation.

Since there were two major institutions involved in the 1953 excavations of this site, human remains and associated funerary objects are controlled by both the UW-Madison and State Historical Society of Wisconsin. The vast majority of the human remains are controlled by UW-Madison and the funerary objects by State Historical Society of Wisconsin. At the request of the Wisconsin Inter-Tribal Repatriation Committee (WITRC), the associated funerary objects have been reunited with the human remains under a loan agreement between the State Historical Society of Wisconsin and UW-Madison Department of Anthropology.

Human remains recovered from the site include nearly complete, partial, fragmentary, and cremated individuals. Many of the human remains were highly fragmentary. No known individuals were identified. There are 63 associated funerary objects. The following are in the control of State Historical Society of Wisconsin: 1 Side-notched knife/projectile point from Burial 4; 1 elk antler axe and 3 side-notched projectile points from Burial 5; 2 conical antler points (one of which is fragmentary), 2 sets of crane bills, and 1 set of headdress components that included twenty-three copper pieces from Burial 6; 1 chert projectile point and 1 white chert flake from Burial 8; 1 antler tine from Burial 10; 1 chipped stone knife, 1 worked swan ulna, 1 group of antler fragments, 1 ulna of a small mammal, and 1 group of lower leg bones of a great horned owl from Burial 11; 1 sandal soled gorget made of marine conch shell, 1 set of copper beads, and 5 shell beads from Burial 13; 1 rolled copper projectile point fragment from Burial 18; 1 chert projectile point from Burial 21; 1 conical copper point, 1 elk antler axe, 1 knife/projectile point, 3 hematite pebbles, and 2 worked swan humeri from Burial 23; 1 side-notched projectile point from Burial 25; 1 conical copper point, 1 chipped stone knife/projectile point, and 2 hematite pebbles from Burial 26; and 2 groups of fragmentary faunal bones. The following are in the control and possession of UW-Madison: 6 soil matrix samples, one each from Burial 5, Burial 6, Burial 7, Burial 9, Burial 20, and Burial 22; 2 rounded blocks of soft sandstone and 1 portion of a tortoise shell from Burial 11; 1 lot of small shell fragments from Burial 10; 1 soil matrix sample, 1 lot of shell fragments, 1 lot of charcoal, and 1 lot of small bone fragments from Burial 21; 3 bags of soil matrix and charcoal from Burial 21; 2 soil matrix samples and 1 lot of bone fragments from Burial 26; 1 lot of small land shells from a non-specific location at the site.

Determinations Made by the University of Wisconsin-Madison Department of Anthropology and the Wisconsin Historical Society

Officials of the University of Wisconsin-Madison Department of Anthropology and the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on an examination by a physical anthropologist and the recovery of these remains at a known Native American archeological site associated with prehistoric artifacts, recovered from a

documented excavation with radiocarbon dates.

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 46 individuals of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(3)(A), the 63 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.

• Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and associated funerary objects and any present-day Indian tribe.

• According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Ho-Chunk Nation of Wisconsin and the Winnebago Tribe of Nebraska.

• Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska.

• Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains and associated funerary objects may be to the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Sissel Schroeder, University of Wisconsin-Madison, Department of Anthropology, 1180 Observatory Drive, 5240 Social Sciences Building, Madison, WI 53706, telephone (608) 262–0317, email *sschroeder2@wisc.edu* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska may proceed.

The University of Wisconsin-Madison Department of Anthropology and the State Historical Society of Wisconsin are responsible for notifying the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; Stockbridge Munsee Community, Wisconsin; and the Winnebago Tribe of Nebraska that this notice has been published.

Dated: July 17, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21505 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16443; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, PA

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The University of Pennsylvania Museum of Archaeology and Anthropology has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the University of Pennsylvania Museum of Archaeology and Anthropology. If no additional requestors come forward, transfer of control of the human remains to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the University of Pennsylvania Museum of Archaeology and Anthropology at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Julian Siggers, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, PA 19104, telephone (215) 898–4050.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the University of Pennsylvania Museum Archaeology and Anthropology, Philadelphia, PA. The human remains were removed from an unknown grave in Pequaming, Baraga County, MI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the University of Pennsylvania Museum of Archaeology and Anthropology professional staff in consultation with representatives of Bay Mills Indian Community, Michigan; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Little River Band of Ottawa Indians, Michigan; Little Traverse Bay Bands of Odawa Indians, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Minnesota Chippewa Tribe, Minnesota (Six components reservations: Bois Forte Band (Nett Lake); Fond du Lac Band; Grand Portage Band; Leech Lake Band; Mille Lacs Band; White Earth Band); Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Saginaw Chippewa Indian Tribe of Michigan; and Sault Ste. Marie Tribe of Chippewa Indians, Michigan. The Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Sokaogon Chippewa Community, Wisconsin; and St. Croix Chippewa

Indians of Wisconsin were invited to consult, but did not respond.

History and Description of the Remains

At an unknown date prior to 1921, human remains representing, at minimum, one individual were removed from an unknown grave in Pequaming in Baraga County, MI, by Mr. Morgan Hebard, a summer resident of Pequaming. Hebard subsequently donated the human remains to the Academy of Natural Sciences of Philadelphia in 1921. In 1936, the human remains were loaned to the University of Pennsylvania Museum of Archaeology and Anthropology. In 1997, the remains were formally gifted to the University of Pennsylvania. The human remains consist of three cranial fragments (temporal, parietal, and occipital bones) of one adult male. No known individuals were identified. No associated funerary objects are present.

Museum and collector documentation indicate that the human remains have been dated to the early Historic Period. Consultation, published information, and land cessions associated with Baraga County indicate that the geographic location from which the remains were removed is aboriginal to the Chippewa tribe or people.

Determinations Made by the University of Pennsylvania Museum of Archaeology and Anthropology

Officials of the University of Pennsylvania Museum of Archaeology and Anthropology have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Keweenaw Bay Indian Community; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Minnesota Chippewa Tribe, Minnesota (Leech Lake Band; Mille Lacs Band; White Earth Band); and Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Dr. Julian Siggers, Director, University of Pennsylvania Museum of Archaeology and Anthropology, University of Pennsylvania, 3260 South Street, Philadelphia, PA 19104, telephone (215) 898–4050, by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Keweenaw Bay Indian Community; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Minnesota Chippewa Tribe, Minnesota (Leech Lake Band; Mille Lacs Band; White Earth Band); and Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin may proceed.

The University of Pennsylvania Museum of Archaeology and Anthropology is responsible for notifying the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Little River Band of Ottawa Indians, Michigan; Little Traverse Bay Bands of Odawa Indians, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Minnesota Chippewa Tribe, Minnesota (Six components reservations: Bois Forte Band (Nett Lake); Fond du Lac Band; Grand Portage Band; Leech Lake Band; Mille Lacs Band; White Earth Band); Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; and St. Croix Chippewa Indians of Wisconsin that this notice has been published.

Dated: August 7, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21516 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16403; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: U.S. Department of Defense, Army, National Museum of Health and Medicine, Silver Spring, MD

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The National Museum of Health and Medicine has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the National Museum of Health and Medicine. If no additional requestors come forward, transfer of control of the human remains to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the National Museum of Health and Medicine at the address in this notice by October 10, 2014.

ADDRESSES: Dr Franklin E. Damann, National Museum of Health and Medicine, 2460 Linden Lane, Building 2500, Silver Spring, MD 20910, telephone (301) 319–3306, email *franklin.e.damann2.civ@mail.mil.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the National Museum of Health and Medicine, Silver Spring, MD. The human remains were removed from Chernofski, Unalaska, AK.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the National Museum of Health and Medicine professional staff in consultation with representatives of the Qawalangin Tribe of Unalaska.

History and Description of the Remains

On July 7, 1886, human remains representing, at minimum, two individuals were transferred from the U.S. National Museum (today the Smithsonian Institution's National Museum of Natural History) to the Army Medical Museum (today the National Museum of Health and Medicine). In 1880, affiliates of the U.S. National Museum removed human skeletal remains from Chernofski Harbor in Unalaska, AK. Original records of the collection are maintained by the Smithsonian Institution, and through coordination, we are able to determine that one cranium was removed by T.H. Bean and a second cranium was removed by W.H. Dall. No known individuals are identified in the historic records, and no associated funerary objects are present.

The cranium collected by T.H. Bean was from a prehistoric Aleutian site at Chernofski, Unalaska, and was given Smithsonian Number 20825. Upon transfer to the Army Medical Museum in 1886, the cranium was accessioned under a second number, PS 9666. This human cranium is of a single adult, with extensive loss of bone and several perforations of the frontal and parietals.

The cranium collected by W.H. Dall, also from a prehistoric Aleutian site at Chernofski, Unalaska, was given Smithsonian Number 20842. Upon transfer to the Army Medical Museum in 1886, the cranium was accessioned under a second number, PS 9667. This human cranium is of a single adult female, with extensive hyperostosis and several perforations of the frontal and parietal bones.

No information exists about the collection sites, other than both craniums were collected at Chernofski, Unalaska in 1880. The museum's consultation efforts identify one tribe that remains geographically affiliated with Unalaska: The Qawalangin Tribe of Unalaska.

Determinations Made by the National Museum of Health and Medicine

Officials of the National Museum of Health and Medicine have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of two individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and the Qawalangin Tribe of Unalaska.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Dr Franklin E. Damann, National Museum of Health and Medicine, 2460 Linden Lane, Building 2500, Silver Spring, MD 20910, telephone (301) 319–3306, email *franklin.e.damann2.civ@mail.mil,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Qawalangin Tribe of Unalaska may proceed.

The National Museum of Health and Medicine is responsible for notifying the Qawalangin Tribe of Unalaska that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21517 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16317; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and associated funerary objects and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains and associated funerary objects were removed from two sites in Waukesha County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1992, human remains representing, at minimum, two individuals (HP.WK–0498.1) were removed from Nick's Site (47–WK–0498) in Waukesha County, WI. The human remains were discovered during construction of a retaining wall near Bark River in the town of Delafield. The homeowners reported the human remains to the Delafield police. An archeologist from the University of Wisconsin-Madison, Department of Anthropology, initially investigated the site and collected some of the human remains. Archeologists from the State Historical Society's Burial Sites Preservation Office took possession of these human remains and then excavated the rest of the burial. The human remains were determined to represent an adult female over the age of fifty and a child between the ages of three and five. No known individuals were identified. The five associated funerary objects are two pointed bone awls (HP.WK–0498.2 & HP.WK–0498.3), two flint spear points (HP.WK–0498.4 & HP.WK–0498.5), and one fragmentary clam shell (HP.WK–0498.6)

At an unknown date, human remains representing, at minimum, one individual (A01960) were removed from Hudley Gravel Pit Burial (47–WK–0500) in Waukesha County, WI. A cranium stained with red ochre was uncovered by J. B. Hudley from a small gravel pit at the western edge of Pewaukee Lake. Mr. Hudley gave the cranium to Paul Joers, and Joers donated it to the State Historical Society in 1912. The human remains were determined to represent an adult male. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of three individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the five objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and associated funerary objects and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter referred to as ''The Aboriginal Land Tribes'').
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains and associated funerary objects may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21450 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16306; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: U.S. Department of Defense, Army, Fort Sill National Historic Landmark and Museum, Fort Sill, OK

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Fort Sill National Historic Landmark and Museum has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate

Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the Fort Sill National Historic Landmark and Museum. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the Fort Sill National Historic Landmark and Museum at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email *scott.a.neel2.civ@mail.mil.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the Fort Sill National Historic Landmark and Museum, Fort Sill, OK.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the Fort Sill National Historic Landmark and Museum and Fort Sill Environmental Quality Division professional staff in consultation with representatives of the Apache Tribe of Oklahoma; Caddo Nation of Oklahoma; Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma); Comanche Nation, Oklahoma; Delaware Nation, Oklahoma; Fort Sill Apache Tribe of Oklahoma; Kiowa Indian Tribe of Oklahoma; The Chickasaw Nation; and the Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma.

History and Description of the Remains

In 1966, Morgan Otis died in a car accident in California, and he was interred in the Fort Sill Post Cemetery shortly thereafter. A collection of items were recovered from the vehicle and later sent to the Fort Sill Museum where Morgan Otis was a volunteer honorary associate curator. There is no documentary evidence concerning how and when these items entered the museum's collections. Human teeth representing, at minimum, one individual were included in the collection. Morgan Otis was the great nephew of Chief Big-Bow, a Kiowa Chief, and documentation records his ancestry as Kiowa. Historical records also indicate that he was also related to Spotted Wolf, who was Southern Arapaho. No lineal descendents have been identified. The 322 associated funerary objects consist of 311 beads of various types and colors, 1 ceramic disk, 1 metal key, 2 buttons, 2 metal tokens, 3 copper rings and 2 copper bracelets.

Determinations Made by the Fort Sill National Historic Landmark and Museum

Officials of the Fort Sill National Historic Landmark and Museum have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the 322 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and associated funerary objects and the Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma) and the Kiowa Indian Tribe of Oklahoma.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email *scott.a.neel2.civ@mail.mil,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma) and the Kiowa Indian Tribe of Oklahoma may proceed.

The Fort Sill National Historic Landmark and Museum is responsible for notifying the Apache Tribe of Oklahoma; Caddo Nation of Oklahoma; Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma); Comanche Nation, Oklahoma; Delaware Nation, Oklahoma; Fort Sill Apache Tribe of Oklahoma; Kiowa Indian Tribe of Oklahoma; The Chickasaw Nation; and the Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma, that this notice has been published.

Dated: July 17, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21531 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16188; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion for Native American Human Remains and Associated Funerary Objects in the Possession of the U.S. Department of the Interior, National Park Service, Rocky Mountain National Park, Estes Park, CO; Correction

AGENCY: National Park Service, Interior.

ACTION: Notice; correction.

SUMMARY: The U.S. Department of the Interior, National Park Service, Rocky Mountain National Park, has corrected an inventory of human remains, published in a Notice of Inventory Completion in the **Federal Register** on June 18, 2001. This notice corrects the cultural affiliation. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written

request to Rocky Mountain National Park. If no additional requestors come forward, transfer of control of the human remains to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Rocky Mountain National Park at the address in this notice by October 10, 2014.

ADDRESSES: Vaughn Baker, Superintendent, Rocky Mountain National Park, 1000 Highway 36, Estes Park CO 80517–8397, telephone (970) 586–1200, email *vaughn_baker@nps.gov.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the correction of an inventory of human remains under the control of Rocky Mountain National Park, Estes Park, CO. The human remains were removed from the Thompson River entrance area in Larimer County, CO.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the Superintendent, Rocky Mountain National Park.

This notice corrects the list of culturally affiliated Indian tribes published in a Notice of Inventory Completion in the **Federal Register** (66 FR 32843–32844, June 18, 2001). After publication of the notice, two additional Indian tribes were determined to be culturally affiliated. Transfer of control of the items in this correction notice has not occurred.

Correction

In the **Federal Register** (66 FR 32843–32844, June 18, 2001), paragraph six, sentence two is corrected by substituting the following sentence:

The Rocky Mountain National Park superintendent also has determined that, pursuant to 43 CFR 10.2 (e), there is a relationship of shared group identity that can be reasonably traced between these Native American human remains and the Arapaho Tribe of the Wind River Reservation, Wyoming; Cheyenne and Arapaho Tribes, Oklahoma (previously listed as the Cheyenne-Arapaho Tribes of Oklahoma); Jicarilla Apache Nation, New Mexico; Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado; Ute Indian Tribe of the Uintah & Ouray Reservation, Utah; and Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Vaughn Baker, Superintendent, Rocky Mountain National Park, 1000 Highway 36, Estes Park CO 80517–8397, telephone (970) 586–1200, email *vaughn_baker@nps.gov,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Arapaho Tribe of the Wind River Reservation, Wyoming; Cheyenne and Arapaho Tribes, Oklahoma (previously listed as the Cheyenne-Arapaho Tribes of Oklahoma); Jicarilla Apache Nation, New Mexico; Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado; Ute Indian Tribe of the Uintah & Ouray Reservation, Utah; and Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah may proceed.

Rocky Mountain National Park is responsible for notifying the Arapaho Tribe of the Wind River Reservation, Wyoming; Cheyenne and Arapaho Tribes, Oklahoma (previously listed as the Cheyenne-Arapaho Tribes of Oklahoma); Jicarilla Apache Nation, New Mexico; Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado; Ute Indian Tribe of the Uintah & Ouray Reservation, Utah; and Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah that this notice has been published.

Dated: July 10, 2014.

Sherry Hutt,

Manager, National NAGPRA Program.

[FR Doc. 2014–21487 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16415; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, University of Arizona, has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the Arizona State Museum, University of Arizona. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the Arizona State Museum, University of Arizona, Tucson, AZ. The human remains and associated funerary objects were removed from Pima County, AZ.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the Arizona State Museum (ASM) professional staff in consultation with representatives of the Ak Chin Indian Community of the

Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona.

History and Description of the Remains

In 1975, human remains representing, at minimum, one individual were removed from the Bechtel Burial site, AZ AA:12:98(ASM), in Pima County, AZ. The legally authorized excavation of an inadvertently discovered human burial was conducted by ASM under the direction of Valetta Reid. At the end of excavation, the archeological collection was brought to the museum and assigned an accession number. No known individuals were identified. The 39 associated artifacts are 1 chipped stone core, 17 chipped stone flakes, 1 chipped stone knife, 2 chipped stone scrapers, 1 mineral, 13 stone bifaces, and 4 stone projectile points. The objects in association with this individual have been interpreted by archaeologists as a toolkit for the manufacture of stone projectile points. The projectile points are classified as Sobaipuri or Upper Piman types, suggesting a chronological range of A.D. 1500 to 1800 for this burial.

In 1985, human remains representing, at minimum, one individual were removed from private property at an unnamed site, AZ BB:13:— Ramada, in Tucson, Pima County, AZ. The human remains were inadvertently found by Carl Harshman of the Hook Crane Service at the Ramada Inn while excavating a hole for a palm tree. The human remains and associated artifacts were brought to the museum and assigned an accession number. No known individuals were identified. The 17 associated funerary objects are 1 antler artifact, 1 bone artifact, 3 bone awls, 2 ceramic jars, 7 chipped stone flakes, 2 stone artifacts, and 1 stone projectile point preform. The archeological context of the discovery is unknown, but the artifact assemblage, especially including the ceramic types, suggests that the inhumation is likely from the proto-historical or historical period (A.D. 1450–1750). The assemblage has been interpreted by archeologists as including a flint-knapping toolkit.

Ethnographic accounts of the Upper Piman inhabitants of Southern Arizona record that burials during the historical period were often accompanied by the decedent's personal possessions. These notably included weaponry and toolkits for the manufacture of weaponry in the case of male burials. The term Piman was used by the Spanish to refer to the O'odham people, who are the present-day inhabitants of the region.

In 1949, human remains representing, at minimum, 63 individuals were removed from Sections A and B of the San Agustìn de Tucson Mission site, AZ BB:13:6(ASM), in Tucson, Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona under the direction of Terah L Smiley. The human remains and associated artifacts were collected prior to clay mining activities of the Tucson Pressed Brick Company. At the end of excavations, the archeological collections were brought ASM and assigned accession numbers. No known individuals were identified. The 13 associated funerary objects are 6 lots of glass beads, 2 metal artifacts, 3 metal crucifixes, 1 lot of shell beads, and 1 stone projectile point.

AZ BB:13:6(ASM) is a multicomponent habitation and agricultural site. In the 1690s, Father Eusebio Kino traveled through southern Arizona and reported the presence of a Piman village on the west bank of the Santa Cruz River near Sentinel Peak. He named this village San Cosme de Tucson after Chuk-son, the Piman name for the village. By the early years of the 18th century, a visita was established at San Cosme as an extension of the mission of San Xavier del Bac, located a few miles to the south. Priests from San Xavier would come to the visita occasionally to conduct baptisms and other rites for the village inhabitants. Beginning in the early 1770's construction began on more permanent facilities. The mission complex, renamed San Agustìn, eventually included a chapel, a two-story convent building, an orchard, a granary, and a cemetery for the Native American population. The mission was in use until the middle of the 19th century. Historical records indicate that Sections A and B of the cemetery were used for the interment of baptized Native Americans who were the inhabitants of the O'odham village. The O'odham people today are comprised of the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona.

Determinations Made by the Arizona State Museum

Officials of the ASM have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 65 individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the 69 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and associated funerary objects and Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona may proceed.

The ASM is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21469 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16320; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the Tomahawk Drive Burial site, Washington County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1987, human remains representing, at minimum, one individual (HP.WT–0220.1) were removed from the Tomahawk Drive Burial site (47–WT–0220) in Washington County, WI. The human remains were discovered by three juveniles in the New Star Valley West subdivision in the Town of Farmington. The State Historical Society's Burial Sites Preservation Office was contacted by the Washington County Sheriff's Department. An archeologist from the State Historical Society took possession of the human remains and excavated the remainder of the burial. Further investigation of the site revealed no additional burials. The human remains were determined to represent a young adult female. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, skeletal analysis, and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter referred to as ''The Aboriginal Land Tribes'').
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21498 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16411; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, University of Arizona, has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the Arizona State Museum, University of Arizona. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the Arizona State Museum (ASM), University of Arizona, Tucson, AZ. The human remains and associated funerary objects were removed from Pima County, AZ.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the ASM professional staff in consultation with representatives of the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico.

History and Description of the Remains

In 1959, human remains representing, at minimum, three individuals were removed from a wash at an unrecorded archeological site, AZ AA:12:—1009, in Pima County, AZ. The human remains and associated funerary objects were donated by the excavator to ASM and were assigned an accession number. No known individuals were identified. The nine associated funerary objects are two animal bones, two ceramic jars, one ceramic sherd, two chipped stones, one chipped stone flake, and one shell bracelet fragment. The site is located within the Tucson Basin. No further information about the context of the discovery is available. The human remains likely date to the Hohokam Classic period, A.D. 1150–1450, based on the ceramic typology.

In 1975, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ AA:12:—Avra Valley, located on privately-owned land in Pima County, AZ. The burial was inadvertently discovered and the human remains and associated funerary objects were removed by ASM under the direction of Emil Haury at the request of the landowner. The collection was subsequently brought to ASM and assigned an accession number. No known individuals were identified. The two associated funerary objects are one ceramic bowl and one ceramic jar. The unnamed site in the Avra Valley appears to be a large village site, and the human remains removed from the site likely date to the Hohokam Classic period, A.D. 1150–1450, based on the ceramic typology.

Between 1968 and 1970, human remains representing, at minimum, one individual were removed by an unknown individual from an unknown site, AZ AA:12:—Cortaro Farms, in Pima County, AZ. The human remains were received by ASM in 1996 as an anonymous donation. A note with the human remains stated the years of collection and gave the location as ''Cortaro.'' This location may be related to a site named Los Morteros, AZ AA:12:57(ASM). No known individuals were identified. No associated funerary objects are present. Based on the possible relationship with Los Morteros, the human remains likely date to the Hohokam period, A.D. 500–1450.

In 1997, human remains representing, at minimum, one individual were removed from a private residence from an unrecorded site, AZ AA:12:—Rillito, in Pima County, AZ. The legally authorized excavation was conducted by ASM under the direction of Thomas Mulinski. The human remains were brought to ASM but were not assigned an accession number. No known individuals were identified. No associated funerary objects are present. The location where the human remains were found is in the vicinity of Los Morteros, AZ AA:12:57(ASM). Based on the possible relationship with Los Morteros, the human remains likely date to the Hohokam period, A.D. 500–1450.

In 1968 and 1969, human remains representing, at minimum, two individuals were removed from an unrecorded site, AZ AA:12:—Tucson Site 14, at a privately-owned trailer park on Romero Road in Pima County, AZ.

The legally authorized excavations were conducted by ASM under the direction of James Ayres and Walter Birkby. The archeological collections were brought to ASM and accessioned. No known individuals were identified. The four associated funerary objects are four chipped stone flakes. Field notes mention the presence of sherds that were not collected. On this basis, the burials are likely dated to the period A.D. 200–1450, which encompasses the Early Ceramic and Hohokam periods.

In 1968, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ AA:12:—Romero Road, in Pima County, AZ. No accession information was found in museum records, but it is likely that these human remains are from the excavations conducted by James Ayres and Walter Birkby at AZ AA:12:—Tucson Site 14. No known individuals were identified. No associated funerary objects are present. Based on association with AZ AA:12:—Tucson Site 14, the human remains likely date to the ceramic period, A.D. 200–1450.

In the years 1936–1938 and in 1985, human remains representing, at minimum, 47 individuals were removed from the Hodges Site, AZ AA:12:18(ASM), in Tucson, Pima County, AZ. The legally authorized excavations in 1936–1938 were conducted by the Gila Pueblo Archaeological Foundation under the direction of Carl Miller and Isabel Kelly. At the end of the excavations, the collections were brought to the Gila Pueblo Archaeological Foundation in Globe, AZ. In 1944, these archeological collections were transferred to ASM. The legally authorized excavations in 1985 were conducted by the Cultural Resource Management Division of ASM under the direction of Robert W. Layhe. At the end of these excavations, the archeological collections were brought to ASM and accessioned. No known individuals were identified. The 756 associated funerary objects are 167 animal bones, 3 bone artifacts, 8 ceramic bowls, 1 ceramic disk, 6 ceramic jars, 1 ceramic jar fragment, 2 ceramic pitchers, 1 ceramic scoop, 272 ceramic sherds, 2 lots of charcoal, 10 chipped stones, 6 pieces of chipped stone debris, 2 crystals, 2 flotation fraction lots, 1 flotation sample, 2 ground stones, 1 pollen sample, 2 shells, 5 lots of shell beads, 2 shell bracelets, 99 shell bracelet fragments, 1 shell fragment, 1 shell pendant, 3 shell pendant fragments, 3 soil samples, 118 stones, 3 stone artifacts, 4 stone bowls, 3 stone palettes, 1 stone pendant, 23 stone projectile points, and 1 unidentified object. Hodges Ruin was a large Hohokam village that was occupied from the Tortolita phase to Tanque Verde phase (A.D. 350–1300) based on ceramic typologies.

In 1973, human remains representing, at minimum, one individual were removed from the El Rancho Chaparral site, AZ AA:12:31(ASM), in Tucson, AZ. The human remains were inadvertently discovered near a house and the landowner requested the assistance of ASM. The legally authorized excavations were conducted under the direction of Sharon Urban and Gayle Hartman. The collection was subsequently brought to ASM, but no accession number was assigned. No known individuals were identified. No associated funerary objects are present. The El Rancho Chaparral site is a large prehistoric artifact scatter measuring more than 40 acres in area. The site likely dates to the Hohokam Classic period, A.D. 1150–1450, based on ceramic typologies of sherds found near the human remains that were described but not collected.

In 1969 and in 1988–1989, human remains representing, at minimum, 80 individuals were removed from Rabid Ruin, AZ AA:12:46(ASM), in Pima County, AZ. The legally authorized excavations in 1969 were conducted by ASM under the direction of Laurens Hammack. The legally authorized excavations in 1988–1989 were conducted by Culture and Environmental Systems under the direction of Laurie Slawson. The later excavations were the more extensive of the two projects and were undertaken to mitigate impacts prior to the placement of sewer and water lines through the site. Following completion of each excavation, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The 1,895 associated funerary objects are 37 animal bones, 1 lot of beads (unknown material), 4 bone artifacts, 3 bone awls, 40 bone awl fragments, 2 bone whistles, 35 lots of botanical material, 23 ceramic bowls, 36 ceramic bowl fragments, 2 ceramic disks, 13 ceramic jars, 34 ceramic jar fragments, 1 ceramic ladle, 16 ceramic pitchers, 2 ceramic scoops, 1,262 ceramic sherds, 1 ceramic sherd artifact, 1 ceramic vessel, 8 lots of charcoal, 38 chipped stones, 1 piece of chipped stone debris, 3 chipped stone flakes, 1 chipped stone knife, 1 chipped stone scraper, 1 chipped stone tool, 4 clay fragments, 1 crystal, 1 daub fragment, 3 ground stones, 2 metallic cylinders, 13 mineral fragments, 1 lot of organic material, 2 pebbles, 2 lots of plant fiber matting, 4 pollen samples, 3 shells, 18 lots of shell and stone beads, 18 shell artifacts, 23 shell artifact fragments, 48 lots of shell beads, 4 shell bracelets, 8 shell bracelet fragments, 31 shell fragments, 5 shell pendants, 1 shell pendant fragment, 2 soil samples, 7 stones, 2 stone balls, 3 lots of stone beads, 2 stone cylinders, 1 stone disk, 1 stone pendant, 79 stone projectile points, 2 stone projectile point fragments, 4 lots of textile cord, 7 lots of textile fragments, 1 turquoise tessera, and 26 wood fragments. The Rabid Ruin was a Hohokam multi-component village site located on the west bank of the Santa Cruz River on the grounds of the Pima County Animal Control Center (formerly the Rabies Control Center). Based on artifact and ceramic typologies, the site was occupied from the Archaic period through the prehistoric-historic transition, (8000 B.C.–A.D. 1500/1700). The principal site component is a cemetery with a large number of primary and secondary cremations, which dates to the Hohokam Classic period (A.D. 1150–1450), and the human remains are primarily from this period.

In 1979–1983 and in 1987–1988, human remains representing, at minimum, 229 individuals were removed from Los Morteros, AZ AA:12:57(ASM), in Pima County, AZ. The legally authorized excavations were conducted in 1979–1983 by ASM under the direction of Richard Lange and William Deaver, and in a separate project in 1987–1988 by the Institute for American Research under the direction of Mary Bernard-Shaw. Following completion of each excavation, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The 2,460 associated funerary objects are 174 animal bones, 3 lots of beads (unidentified material), 5 bird bones, 10 bone awls, 9 lots of botanical materials, 10 ceramic bowls, 23 ceramic bowl fragments, 7 ceramic jars, 2 ceramic scoops, 1,109 ceramic sherds, 2 ceramic sherd artifacts, 29 ceramic vessels, 56 lots of charcoal, 180 chipped stones, 1 chipped stone flake, 3 clay fragments, 13 daub fragments, 23 flotation fraction lots, 48 flotation samples, 33 ground stones, 2 metates, 4 mineral fragments, 6 lots of organic material, 33 pollen samples, 509 shell fragments, 1 lot of shell and stone beads, 3 shell artifacts, 31 shell artifact fragments, 10 lots of shell beads, 1 shell bracelet, 1 shell bracelet fragment, 19 shell necklace fragments, 9 shell pendants, 15 shell rings, 39 soil samples, 7 stones, 6 stone artifacts, 10 lots of stone beads, 7 stone palette

fragments, 5 textile fragments, 1 turquoise bead, and 1 unidentified object. Los Morteros is a large, multi-component village site and the center of an extended community of related sites bordering the Santa Cruz River. The site contained a large ball court, a fortified hillside village, large mounds, stone house foundations, an adobe-walled compound enclosure, and acres of artifact scatter. Occupation at the site began during the Late Archaic/Early Agricultural period, but the most intensive period of occupation was during the Tanque Verde phase of the Hohokam Classic period, from about A.D. 1150 to 1300. Based on the associated funerary object typologies, most of the human remains are likely associated with this latter period.

In 1964, human remains representing, at minimum, one individual were removed from an unnamed site, AZ AA:12:59(ASM), located on private land in Pima County, AZ. The burial was inadvertently discovered by children in an eroded riverbank. The legally authorized excavations were conducted by ASM under the direction of E. Lewitt and A. Johnson. Following the excavation, the collection was brought to ASM and assigned an accession number. No known individuals were identified. The 29 associated funerary objects are 4 animal bones and 25 corn kernels. Site AZ AA:12:59(ASM) is described as a Hohokam village site. Based on ceramic typologies, the site is associated with the Hohokam Classic period (A.D. 1150–1450).

In 1973 and from 1980–1985, human remains representing, at minimum, 10 individuals were removed from the Huntington Site, AZ AA:12:73(ASM), in Pima County, AZ. The human remains removed in 1973 were excavated at the landowner's request by ASM under the direction of Bruce Huckell. The collection was subsequently brought to ASM but no accession number was assigned. The human remains removed in the years 1980 to 1985 were collected during the Northern Tucson Basin Survey conducted by ASM under the direction of John Madsen and Paul Fish. The archeological collections from the survey were brought to ASM but were not accessioned. In 2010, ASM staff found fragmentary human remains from the site in the survey boxes. No known individuals were identified. No associated funerary objects are present. The Huntington site was a prehistoric settlement and dates to the Early to Middle Rincon phases of the Hohokam cultural sequence (A.D. 950–1150) based on ceramic typologies as well as archaeomagnetic and radiocarbon dating and local stratigraphy. The human remains appear to be associated with this period.

In 1972 and 1981, human remains representing, at minimum, three individuals were removed from the Arizona Ranch School Site, AZ AA:12:85(ASM), in Pima County, AZ. The human remains removed in 1972 were discovered inadvertently during building construction. The legally authorized excavations were conducted by ASM under the direction of J. Ayres and R. Windhiller. These human remains were subsequently brought to ASM but no accession number was assigned. The human remains removed in 1981 were discovered in an eroded riverbank at the same site. The legally authorized excavation of these remains was conducted for the City of Tucson by Archaeological Resources under the direction of Geroge Shott. This collection was subsequently brought to ASM and was assigned an accession number. No known individuals were identified. No associated funerary objects are present. The Arizona Ranch School Site is a multi-component village site with the primary occupation estimated to have been during the Hohokam Tanque Verde phase, approximately A.D. 1150–1300.

In 1975, human remains representing, at minimum, three individuals were removed from an unnamed site referred to as Gravel Pit 6117, AZ AA:12:88(ASM), in Pima County, AZ. The legally authorized excavations were conducted by ASM under the direction of Thomas Mulinski. The archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The two associated funerary objects are one bone awl and one ceramic bowl. Site AZ AA:12:88(ASM) is located close to Los Morteros, AZ AA:12:57(ASM). The area has been badly disturbed by gravel mining activities. Ceramic typologies at the site place it within the Hohokam pre-Classic and Classic Periods (A.D. 800–A.D. 1450).

In 1959, human remains representing, at minimum, four individuals were removed from the Wetlands site AZ AA:12:90(ASM). The legally authorized excavations were conducted by ASM under the direction of William W. Wasley, following the inadvertent find of prehistoric human remains during construction at the Tucson Sewage Disposal Plant. The archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The one associated funerary object is a ceramic jar. The Wetlands Site is a multicomponent site, and the cremation dates to Hohokam Pre-Classic Rillito to Rincon phases (A.D. 1000–1300) based on the ceramic typology of the jar that contained the cremated human remains.

In 1986, 1991, and from 1995–1996, human remains representing, at minimum, eight individuals were removed from Los Pozos AZ AA:12:91(ASM), Pima County, AZ. Legally authorized excavations in 1986 and 1991 were conducted by Desert Archaeology, Inc. under the direction of Bruce Huckell. In 1995–1996, legally authorized excavations were conducted by Desert Archaeology, Inc. under the direction of David Gregory. At the end of excavations, the archeological collections were brought to ASM and assigned accession numbers. No known individuals were identified. The 54 associated funerary objects are 4 animal bones, 31 ceramic sherds, 16 chipped stones, and 3 soil samples. The Los Pozos site is a multi-component habitation site, and the major occupation is associated with the Cienega Phase of the Early Agricultural period (800 B.C.–A.D. 200). A radiocarbon date of A.D. 200 was obtained from the feature associated with Burial 1.

In 1979, human remains representing at minimum one individual were removed from the Las Capas site, AZ AA:12:111(ASM), in Pima County, AZ. The legally authorized survey was conducted by ASM under the direction of Lisa Huckell and Bruce Huckell as part of the Tucson Urban Study Survey. Human remains were not reported at the time of the survey. The archeological collections were brought to ASM but there are no accession records. In 2010, human remains from Las Capas were found in the site survey collections. No known individuals were identified. No associated funerary objects are present. Las Capas is a multiple component large village site, but the features associated with human remains all date to the San Pedro Phase of the Late Archaic/Early Agricultural Period, approximately 1500–800 B.C.

In 1981 and 1983, human remains representing, at minimum, three individuals were removed from the Chicken Ranch site, AZ AA:12:118(ASM) in Pima County, AZ. The legally authorized excavations were conducted by ASM under the direction of John Madsen. Archeological collections were brought to ASM at the conclusion of the excavations and were assigned an accession number. No known individuals were identified. The 24 associated funerary objects are 10 animal bones, 6 ceramic bowl fragments, 7 ceramic sherds, and 1 chipped stone tool. The Chicken Ranch site was a small village that contained

trash mounds, large depressions, a possible canal, cremations, and several unidentified features. Based on associated artifacts the human remains date to the Hohokam Classic period, A.D. 1150–1450.

In 1987, human remains representing, at minimum, 11 individuals were removed from the Lonetree site, AZ AA:12:120(ASM) in Pima County, AZ. The legally authorized excavations were conducted by the Institute of American Research under the direction of Mary Bernard-Shaw for the American Continental Corporation. Archeological collections were brought to ASM at the conclusion of the excavations and were assigned an accession number. No known individuals were identified. The 105 associated funerary objects include 73 animal bones, 4 bone awls, 7 ceramic sherds, 1 ceramic vessel, 1 lot of charcoal, 15 chipped stones, 1 ground stone, 1 mineral, and 2 soil samples. The Lonetree Site was identified as a multicomponent site occupied during the Hohokam Pioneer period, A.D. 550–650, the Hohokam Sedentary period, A.D. 940–1150, and during the historical period. The human remains were associated with the prehistoric components of the site.

In 1988, human remains representing, at minimum, two individuals were removed from the Pepper Tree Farms site, AZ AA:12:146(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the Institute of American Research under the direction of Henry D. Wallace and Allen Dart for the Pepper Tree Farms Development project. In 1990, the collections were brought to ASM and were assigned an accession number. No known individuals were identified. The 24 associated funerary objects are 24 ceramic sherds. The Pepper Tree Farms site is described as an artifact scatter belonging to the Hohokam Rillito and Rincon Phase A.D. 800–1150, based on the ceramic typologies from the surrounding site.

In the years 1981 to 1987, human remains representing, at minimum, 53 individuals were removed from the Redtail Village site, AZ AA:12:149(ASM), in Tucson, Pima County, AZ. The legally authorized test excavations were conducted by the Arizona Archaeological and Historical Society (AAHS) under the direction of W.D. Hohmann in 1981. A second phase of excavations was conducted in 1983–1987 by the Institute of American Research under the direction of Mary Bernard-Shaw. In 1995, the collections from the Arizona Archaeological and Historical Society excavations were loaned to ASM for a NAGPRA inventory and were later assigned an accession number. Archeological collections from the Institute of American Research excavations were brought to ASM at a later date and assigned a separate accession number. No known individuals were identified. The 908 associated funerary objects are 51 animal bones, 2 ceramic bowls, 2 ceramic jars, 1 ceramic scoop, 670 sherds, 5 lots of charcoal, 72 chipped stones, 79 flotation fraction lots, 2 ground stones, 1 metate, 5 pollen samples, 3 shells, 2 stone projectile points, and 13 turquoise fragments. The Redtail Village site is a large multi-component site including a cemetery and plaza with multiple burials. While there is evidence at the site of earlier and later occupations, Redtail Village was occupied for the greater part of the Hohokam Colonial period, and was most intensively occupied between A.D. 750–850, based on ceramic typologies.

In 1996, human remains representing, at minimum, three individuals were removed from the Red Hawk site, AA:12:237(ASM), in Pima County, AZ. The legally authorized survey and test excavations were conducted by Desert Archaeology, Inc. under the direction of Deborah Swartz. No human burials were recorded at the time of the excavations, but fragmentary human remains were later identified. Archeological collections from the project were received by ASM in 1998 and were assigned an accession number. No known individuals were identified. No associated funerary objects are present. The Red Hawk site is described as a moderately dense artifact scatter with a bedrock mortar and a rock overhang that likely dates from the Late Archaic/Early Agricultural to the Hohokam Classic Period, 2000 B.C.–A.D. 1450, based on artifacts found at the site.

In the years 1984 to 2004, human remains representing, at minimum, 53 individuals were removed from the Marana Platform Mound site, AZ AA:12:251(ASM) in Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona under the direction of Paul Fish and Suzanne Fish as a series of archeological field schools. The collections were brought to ASM at the end of each field season but were not assigned an accession number. No known individuals were identified. The 672 associated funerary objects are 31 animal bones, 1 ceramic bowl, 601 ceramic sherds, 1 ceramic vessel, 1 lot of charcoal, 30 chipped stones, 1 shell, 4 lots of shell beads, 1 stone palette fragment, and 1 stone projectile point. The Marana Platform Mound site is considered a large Hohokam habitation area and regional center. The most prominent features include adobe-walled compounds and a platform mound. Based on ceramic typologies, the site dates to the Hohokam Classic Period, A.D. 1150–A.D. 1450, and it appears that the site was most heavily occupied during the Hohokam Tanque Verde phase, A.D. 1150–1300.

In 1985, human remains representing, at minimum, nine individuals were removed from the Dairy Site AZ, AA:12:285(ASM), in Pima County, AZ. The legally authorized excavations were conducted by ASM under the direction of John Madsen. The collections were brought to ASM at the end of the field season but no accession number was assigned. No known individuals were identified. The 143 associated funerary objects are 2 animal bones, 2 lots of botanical material, 126 ceramic sherds, 1 lot of charcoal, 11 chipped stones, and 1 hammerstone. The Dairy Site is a multi-component site, including Late Archaic through Historical period occupations (2000 B.C.–A.D. 1950). However, the majority of the occupation is associated with the Late Archaic through Early Ceramic component (2000 B.C.–A.D. 400) and the burials inventoried here are likely from this time period.

In 1980–1985, human remains representing, at minimum, one individual were removed from the Yuma Wash Site, AZ AA:12:311(ASM), in Pima County, AZ. The legally authorized survey was conducted by ASM under the direction of John Madsen and Paul Fish as part of the Northern Tucson Basin Survey. No human remains were reported at the site at the time of survey. Following survey completion, the archeological collections were brought to ASM but no accession number was assigned. In 2010, ASM staff found fragmentary human remains in the site survey collections from the Yuma Wash Site. No known individuals were identified. No associated funerary objects are present. The Yuma Wash Site is a prehistoric settlement that likely dates to the Hohokam Classic Period, A.D. 1150–1450, based on the ceramic typologies.

In 1982, human remains representing, at minimum, one individual were removed from Manzanita School site, AZ AA:12:409(ASM), in Pima County, AZ. The legally authorized survey was conducted by ASM under the direction of J. Mayberry as part of the Northern Tucson Basin Survey. No human remains were reported at the time of the survey. Following survey completion, the archeological collections were brought to ASM but no accession

number was assigned. In 2010, ASM staff found the human remains in site survey collections from the Manzanita School site. No known individuals were identified. No associated funerary objects are present. The survey recorded the Manzanita School site as a Tanque Verde Phase compound consisting of 18 rectangular pit houses, 22 structural/trash mounds, check dams, burned rock middens, and hearths. Based on ceramic typologies, the site was occupied during the Hohokam Classic period from A.D. 1150 to 1450.

During the years 1981 to 1989, human remains representing, at minimum, one individual were removed from an unnamed site, AZ AA:16:2(ASM), in Pima County, AZ. The legally authorized survey was conducted by ASM under the direction Gayle Hartmann as part of a land exchange survey for the Pima County Land Department. No human remains were reported at the time of the survey. Following completion, the archeological collections were brought to ASM and were assigned an accession number. In 2010, ASM staff found human remains intermingled with animal bone collections during an inventory of the survey collections. No known individuals were identified. No associated funerary objects are present.

In 1984 and 1993, human remains representing, at minimum, 86 individuals were removed from the West Branch Site, AZ AA:16:3(ASM), in Pima County, AZ. The legally authorized excavations in 1984 were conducted by the Institute for American Research under the direction of William H. Doelle and Frederick W. Huntington for the Pima County Department of Transportation. The legally authorized excavations in 1993 were conducted by Statistical Research, Inc. under the direction of Stephanie Whittlesey and Karen Harry. After the completion of both projects, the archeological collections were brought to ASM and were assigned accession numbers. No known individuals were identified. The 279 associated funerary objects are 5 ceramic bowls, 2 ceramic jars, 54 ceramic jar fragments, 154 ceramic sherds, 1 lot of charcoal, 25 chipped stones, 2 chipped stone knives, 2 flotation fraction lots, 21 flotation samples, 1 glass fragment, 1 ground stone, 1 mano, 3 mineral fragments, 2 polishing stones, 1 shell, 1 shell bracelet, 1 soil sample, and 2 stone artifacts. The West Branch site was a large prehistoric settlement area and has Middle Archaic (4800 B.C.–1500 B.C.), Late Archaic (1500 B.C.–A.D. 200), and Hohokam Pre-Classic Period (A.D. 450–1150) components. The cremations and burials found likely date to when the site was most intensively occupied during the Hohokam Pre-Classic Period (A.D. 450–1150), based on the ceramic typologies.

In 1987, human remains representing, at minimum, one individual were removed from private property in the vicinity of the West Branch Site, AZ AA:16:3 Vicinity, in Pima County, AZ. The human remains were inadvertently found by Mark Riley, and reported to the Tucson Police Department. The Tucson Police Department collected the human remains and contacted the Human Identification Laboratory at the University of Arizona. Forensic anthropologists from the laboratory determined that the human remains were prehistoric. Immediately thereafter, the human remains were brought to ASM, but were not assigned an accession number. No known individuals were identified. The three associated funerary objects are one animal bone and two ceramic sherds. This unnamed site is potentially a Hohokam sheet midden because of the lithics and the ceramic sherds found elsewhere on the private property and the site's close vicinity to the West Branch site, AZ AA:16:3(ASM). Ceramic typologies at the West Branch Site suggest the human remains may date sometime during the Hohokam period (A.D. 850–1300).

In 1967, human remains representing, at minimum two individuals were removed from a private residence from an unnamed site near South Mission Road, AZ AA:16:33(ASM), in Pima County, AZ. The cremations were inadvertently discovered by James Sphar while digging a sewer trench on his property. The collections were transferred to ASM and assigned an accession number. No known individuals were identified. The 12 associated funerary objects are 1 animal bone, 1 bone awl, 1 ceramic bowl, 2 ceramic jars, 1 ceramic jar fragment, 4 ceramic sherds, and 2 manos. The site is likely part of a Hohokam village site, AZ AA:16:49(ASM), a multi-component site located on a terrace remnant above the west bank of the West Branch of the Santa Cruz River. Ceramic typologies of the associated funerary objects indicate the human remains likely date from the Hohokam Snaketown to Tanque Verde phases (A.D. 700–1300).

Prehistoric settlements in the Tucson Basin of southern Arizona are characterized by archeologists as belonging to two distinctive and consecutive cultural traditions beginning with the Late Archaic/Early Agricultural period and concluding with the Hohokam period. Recent archeological investigations have added support to the hypothesis that the Hohokam tradition arose from the earlier horizon, based on continuities in settlement pattern, architectural technologies, irrigation technologies, subsistence patterns, and material culture. It has been difficult for archeologists to date the beginning of the Hohokam period because the appearance of its distinctive cultural traits, including ceramic technologies and mortuary patterns was a gradual process spanning several hundred years. This adds further support to the hypothesis that the Hohokam tradition evolved in place from earlier Late Archaic traditions. Linguistic evidence furthermore suggests that the Hohokam tradition was multiethnic in nature.

Cultural continuity between these prehistoric occupants of the Tucson Basin and present day O'odham peoples is supported by continuities in settlement pattern, architectural technologies, basketry, textiles, ceramic technology, and ritual practices. Oral traditions that are documented for the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation, Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and the Tohono O'odham Nation of Arizona support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in southern Arizona.

Oral traditions that are documented for the Hopi Tribe also support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in the region. Several Hopi clans and religious societies are derived from ancestors who migrated from the south and likely identified with the Hohokam tradition.

Oral traditions of medicine societies and kiva groups of the Zuni Tribe recount migration from distant portions of the Southwest to present day Zuni and supports affiliation with Hohokam and Late Archaic traditions. Historical linguistic analysis also suggests interaction between ancestral Zuni and Uto-Aztecan speakers during the late Hohokam period.

Determinations Made by the Arizona State Museum

Officials of ASM have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 622 individuals of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(3)(A), the 7,382 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.

• Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and associated funerary objects and Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico may proceed.

The ASM is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico, that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21494 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16318; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the Lied's Nursery Burial site, Waukesha County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1996, human remains representing, at minimum, one individual (HP.WK–0619.1) were removed from the Lied's Nursery Burial site (47–WK–0619) in Waukesha County, WI. The human remains were discovered by an employee of Lied's Nursery, located in the Village of Menominee Falls, while he was digging a hole to plant a tree. The Menominee Falls Police Department was contacted, and, along with the Waukesha County Coroner, they investigated the site. Archeologists from the State Historical Society's Burial Sites Preservation Office took possession of the human remains. The human remains were determined to represent an adult male between the ages of 35 and 55. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, skeletal analysis, and State Historical Society records.

• Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.

• Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.

• According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains were removed is the aboriginal land of the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community, Wisconsin; Hannahville Indian Community, Michigan; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Pokagon Band of Potawatomi Indians, Michigan and

Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); and the Quechan Tribe of Fort Yuma Indian Reservation, California & Arizona.

• Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin; Bay Mills Indian Community, Michigan; Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe, Minnesota; Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana; Citizen Potawatomi Nation, Oklahoma; Fond du Lac Band of the Minnesota Chippewa Tribe, Minnesota; Forest County Potawatomi Community, Wisconsin; Grand Portage Band of the Minnesota Chippewa Tribe, Minnesota; Grand Traverse Band of Ottawa and Chippewa Indians, Michigan; Hannahville Indian Community, Michigan; Keweenaw Bay Indian Community, Michigan; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan; Leech Lake Band of the Minnesota Chippewa Tribe, Minnesota; Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan; Mille Lacs Band of the Minnesota Chippewa Tribe, Minnesota; Minnesota Chippewa Tribe, Minnesota; Nottawaseppi Huron Band of the Potawatomi, Michigan (previously listed as the Huron Potawatomi, Inc.); Ottawa Tribe of Oklahoma; Pokagon Band of Potawatomi Indians, Michigan and Indiana; Prairie Band Potawatomi Nation (previously listed as the Prairie Band of Potawatomi Nation, Kansas); Quechan Tribe of the Fort Yuma Indian Reservation, California & Arizona; Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin; Red Lake Band of Chippewa Indians, Minnesota; Saginaw Chippewa Indian Tribe of Michigan; Sault Ste. Marie Tribe of Chippewa Indians, Michigan; Sokaogon Chippewa Community, Wisconsin; St. Croix Chippewa Indians of Wisconsin; Turtle Mountain Band of Chippewa Indians of North Dakota; and the White Earth Band of the Minnesota Chippewa Tribe, Minnesota (hereafter referred to as ''The Aboriginal Land Tribes'').

• Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to The Aboriginal Land Tribes.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to The Aboriginal Land Tribes may proceed.

The State Historical Society of Wisconsin is responsible for notifying The Aboriginal Land Tribes that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21449 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16430; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: California State University, Long Beach, and California State University, Sacramento, CA

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: California State University, Sacramento and California State University, Long Beach have completed an inventory of human remains and associated funerary objects in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and have determined that there is a cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the California State University, Sacramento. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to California State University, Sacramento at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Orn Bodvarsson, Dean of the College of Social Sciences and Interdisciplinary Studies, CSUS, 6000 J Street, Sacramento, CA 95819–6109, telephone (916) 278–4864, email *obbodvarsson@csus.edu.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the California State University, Long Beach, and in the physical custody of California State University, Sacramento. The human remains and associated funerary objects were removed from 4–SJo–17, San Joaquin County, CA.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the California State University, Long Beach professional staff in consultation with representatives of the Buena Vista Rancheria of Me-wuk Indians of California; California Valley Miwok Tribe, California; Chicken Ranch Rancheria of Me-Wuk Indians of California; Ione Band of Miwok Indians of California; Jackson Rancheria of Me-Wuk Indians of California; Picayune Rancheria of the Chukchansi Indians of California; Santa Rosa Indian Community of the Santa Rosa Rancheria, California; Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California; Table Mountain Rancheria of California; Tule River Indian Tribe of the Tule River Reservation, California; and Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California.

History and Description of the Remains

In 1967, human remains representing, at minimum, 15 individuals were removed from 4–SJo–17 in San Joaquin County, CA, during a salvage excavation project on private property. Faculty and students from what was then Long Beach State College (now California State University, Long Beach) and local volunteers conducted the excavations. The human remains and associated funerary objects included in this notice were transferred to California State University, Sacramento, from California State University, Long Beach, via California State University, Fresno, during the 1990s. The human remains of ten individuals from five burial features include one infant, one child, one juvenile, and seven adults (one female, one male, and five individuals of unknown sex). The human remains of two individuals, one infant and one adult, were documented as isolated human remains during the inventory of associated funerary objects from the site. The human remains of three individuals, one infant and two adults, were found during the review of sediment samples. No known individuals were identified. The 42 associated funerary objects are 33 fragments of non-human bone, 4 pieces of baked clay, 1 piece of daub, 1 flaked stone, 1 thermally altered rock, 1 modified human bone, and 1 piece of historic metal.

Based on burial patterns and artifact types, the human remains and associated funerary objects are dated to the Middle Horizon (2,500–2,000 B.P.). The establishment of a cultural chronology of the 4–SJo–17 collection relied upon the California Prehistoric Cultural Chronology and Artifact Classification System used by most regional archeologists. Multiple lines of evidence were used to determine the antiquity of this collection. Geographic, linguistic, archeological, and ethnographic evidence, as well as oral historical evidence presented at consultation, were used to determine cultural affiliation to the Eastern Miwok and Central Valley Yokuts peoples. The Eastern Miwok and Yokuts cultures of the Late Horizon (from 1,500 years ago to the European contact) are believed to have descended from the Middle Horizon cultures represented at this site, which lies on the border of the traditional territory of the Eastern Miwok and the Northern Valley Yokuts.

Determinations Made by the California State University, Sacramento, and California State University, Long Beach

Officials of California State University, Sacramento, and California State University, Long Beach have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of a minimum of 15 individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the 42 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and associated funerary objects and the Buena Vista Rancheria of Me-wuk Indians of California; California Valley Miwok Tribe, California; Chicken Ranch Rancheria of Me-Wuk Indians of California; Ione Band of Miwok Indians of California; Jackson Rancheria of Me-Wuk Indians of California; Picayune Rancheria of the Chukchansi Indians of California; Santa Rosa Indian Community of the Santa Rosa Rancheria, California; Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California; Table Mountain Rancheria of California; Tule River Indian Tribe of the Tule River Reservation, California; and Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Dr. Orn Bodvarsson, Dean of the College of Social Sciences and Interdisciplinary Studies, CSUS, 6000 J Street, Sacramento, California, 95819–6109; telephone: (916) 278–4864, email: *obbodvarsson@csus.edu,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Buena Vista Rancheria of Me-wuk Indians of California; California Valley Miwok Tribe, California; Chicken Ranch Rancheria of Me-Wuk Indians of California; Ione Band of Miwok Indians of California; Jackson Rancheria of Me-Wuk Indians of California; Picayune Rancheria of the Chukchansi Indians of California; Santa Rosa Indian Community of the Santa Rosa Rancheria, California; Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California; Table Mountain Rancheria of California; Tule River Indian Tribe of the Tule River Reservation, California; and Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California may proceed.

California State University, Sacramento is responsible for notifying the Buena Vista Rancheria of Me-wuk Indians of California; California Valley Miwok Tribe, California; Chicken Ranch Rancheria of Me-Wuk Indians of California; Ione Band of Miwok Indians of California; Jackson Rancheria of Me-Wuk Indians of California; Picayune Rancheria of the Chukchansi Indians of California; Santa Rosa Indian Community of the Santa Rosa Rancheria, California; Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California; Table Mountain Rancheria of California; Tule River Indian Tribe of the Tule River Reservation, California; and Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California that this notice has been published.

Dated: August 3, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21482 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16413; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, University of Arizona, has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written

request to the Arizona State Museum, University of Arizona. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the Arizona State Museum, University of Arizona, Tucson, AZ. The human remains and associated funerary objects were removed from Pima County, AZ.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the Arizona State Museum (ASM) professional staff in consultation with representatives of the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and. Zuni Tribe of the Zuni Reservation, New Mexico.

History and Description of the Remains

In 1999 or before, human remains representing, at minimum, one individual were removed from an unknown location, AZ BB:—:— Rillito Wash, in Pima County, AZ. The collection was deposited with ASM in 1999 by an unknown individual. No known individuals were identified. The six associated funerary objects are one mano fragment and five ceramic sherds. The condition of the human remains is consistent with a prehistoric human burial and the nature of the associated objects suggests that the burial may be dated to the ceramic period, approximately A.D. 200–1500.

In 1938, human remains representing, at minimum, one individual were removed from an unnamed site, AZ BB:9:— Tanque Verde Creek, in Pima County, AZ. The human remains were found inadvertently and donated to ASM by G.E.P. Smith. The human remains and a ceramic vessel were brought to ASM and assigned an accession number. The ceramic vessel is missing. No known individuals were identified. No associated funerary objects are present. This unnamed site is 7 miles northeast of Tucson. No further contextual information is available. Based on ceramic typology, the human remains likely date to the Hohokam cultural period (A.D. 500–1450).

In 1969, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ BB:9:— Tucson Site 17, in Pima County, AZ. The excavation was conducted by the property owner, who donated the human remains to ASM in 1970. No accession number was assigned. No known individuals were identified. No associated funerary objects are present. The site is on the east side of the Santa Cruz River floodplain in a region with a long history of human occupation. Ceramics were reportedly collected at the same time as the human remains, but they have not been found. Based the reported typology of the ceramics, the human remains likely date to the late Agua Caliente phase of the Early Ceramic Period (A.D. 300–500).

In 1976–1978, human remains representing, at minimum, 72 individuals were removed from the Hardy Site, AZ BB:9:14(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona and ASM under the direction of Linda Gregonis and Karl Reinhard as part of a field school. At the end of excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The six associated funerary objects are one bone awl, one bone tool, one ceramic disk, one ceramic figurine, one ceramic jar, and one lot of mineral fragments. The Hardy Site is a multi-component site with occupations in the historical period associated with Fort Lowell, as well as prehistoric components from the Early Ceramic and Hohokam cultural periods. Based on ceramic typologies, the human remains likely date to a major occupation during the Canada del Oro phase of the Hohokam Colonial Period (A.D. 750–900).

In 1931–1940 and 2010–2013, human remains representing, at minimum, 44 individuals were removed from University Indian Ruin AZ BB:9:33(ASM), Pima County, AZ. Legally authorized excavations were conducted by the University of Arizona and Arizona State Museum in the years 1931–1939 under the direction of Byron Cummings and Emil Haury. In 1940, legally authorized excavations were conducted by the Civilian Conservation Corps under the direction of Julian D. Hayden. In 2010 to 2013, legally authorized excavations were conducted by the University of Arizona and ASM under the direction of Paul and Suzanne Fish. At the end of each excavation, the archeological collections were brought to ASM and assigned accession numbers. No known individuals were identified. The 63 associated funerary objects are 1 bone awl, 6 bone awl fragments, 1 ceramic disk, 25 ceramic jars, 4 ceramic pitchers, 8 ceramic sherds, 1 ceramic vessel, 2 chipped stones, 1 shell bead, 1 shell pendant, 11 shell pendant fragments, and 2 stone artifacts. The University Indian Ruin site consists of surface remains, sub-surface dwellings, a platform mound, possible smaller mounds, and adobe room blocks. Temporally diagnostic ceramics recovered from the site indicate that it was occupied during the Tanque Verde and Tucson phases of the Hohokam Classic period (A.D. 1100–1450).

In 1991, human remains representing, at minimum, one individual were removed from the Brown site, AZ BB:9:79(ASM), in Pima County, AZ. The legally authorized excavations were conducted by ASM under the direction of Sharon Urban. At the end of excavations, the archeological collection was brought to ASM but was not assigned an accession number. No known individuals were identified. The 194 associated artifacts are 194 ceramic sherds. The Brown site is located on private property on a terrace above Sabino Creek and consists of an artifact scatter and a large mound. Based on ceramic typologies and site dates, the human remains likely date to the Early Ceramic to Pre-Classic Hohokam periods (A.D. 200–1000).

In the 1930s and in the years 1988–1989, human remains representing, at

minimum, 33 individuals were removed from the Honey Bee Village site, AZ BB:9:88(ASM), in Pima County, AZ. In the 1930s, members of the Ronstadt family collected human remains from the Honey Bee Village site. In 2006, these human remains were transferred to ASM and assigned an accession number. In 1988–1989, legally authorized excavations were conducted by the Institute for American Research under the direction of Douglas B. Craig. At the end of excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The 319 associated funerary objects are 1 animal bone, 1 bone awl, 314 ceramic sherds, 1 chipped stone, and 2 soil samples. Honey Bee Village consists of a large habitation village, a ball court, over 20 trash mounds, pit features, dense sherd and lithic scatters, and cremation burials. Based on ceramic typologies, the site dates to the Hohokam Pre-Classic (A.D. 450–1150) and Classic periods (A.D. 1150–1450).

In 1989, human remains representing, at minimum, one individual were removed from private property at the Collier Creek Side Site, AZ BB:9:126(ASM), in Pima County, AZ. The legally authorized excavation was conducted by ASM under the direction of Sharon Urban and Richard Lange. At the end of excavations, the archeological collection was brought to ASM, but no accession number was assigned. No known individuals were identified. No associated funerary objects are present. The Collier Creek Side Site is an artifact scatter along Collier Creek in Tucson, AZ. Based on ceramic typologies at the site, the human remains likely date to the Pre-Classic to Classic Hohokam periods (A.D. 450–1500).

In 1984, human remains representing, at minimum, one individual were removed from the La Paloma Site, AZ BB:9:127(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona under the direction of Paul Fish as part of a field school. At the conclusion of the excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The 19 associated funerary objects are 1 animal bone, 6 chipped stones, 2 chipped stone tools, 3 flotation fraction lots, and 7 pollen samples. The La Paloma Site consists of a moderate scatter of lithics at the confluence of two washes. Artifact typologies suggest that La Paloma was occupied in the Late Archaic/Early Agricultural Period (2000 B.C.–A.D. 200). Radiocarbon dates from the excavation date the burial and other parts of the site to the late Early Ceramic to early Pre-Classic Hohokam period (A.D. 302–625).

In 2005, human remains representing, at minimum, one individual were removed from an unnamed site, AZ BB:9:377(ASM), in Pima County, AZ. The human remains were removed from an eroding riverbank by the Tucson Police Department. The human remains were brought to the Pima County Office of the Medical Examiner where the human remains were assigned a case number. The Medical Examiner determined that the human remains were prehistoric and subsequently transferred them to the Arizona State Museum. No known individuals were identified. No associated funerary objects are present. Site AZ BB:9:377(ASM) is a dense artifact scatter and was occupied during the later Hohokam cultural period (A.D. 1000–1300), and then later occupied during the later historical period (A.D. 1700–1950). The condition of the human remains suggests long-term burial, plausibly associating the burial with the prehistoric period.

In 1968 to 1969, human remains representing, at minimum, 52 individuals were removed from Whiptail Ruin, AZ BB:10:3(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the Arizona Archaeological and Historical Society, the University of Arizona, and Pima Community College under the direction of Linda Gregonis, Gayle Hartmann, and Sharon Urban. At the end of excavations, the archeological collections were brought to ASM and assigned accession numbers. No known individuals were identified. The 457 associated funerary objects are 5 ceramic bowls, 2 ceramic bowl fragments, 5 ceramic jars, 414 ceramic sherds, 13 chipped stones, 3 chipped stone flakes, 1 ground stone, 4 pollen samples, 1 shell, 2 lots of shell beads, 1 stone drill, and 6 stone projectile points. Whiptail Ruin is a multi-component village site with Late Archaic (1500 B.C.–A.D. 200), Hohokam (A.D. 500–1300), and historical components (A.D. 1800–1950). The human remains come from Hohokam period features that date to the Hohokam Classic period from A.D. 1200–1300.

In 1966, human remains representing, at minimum, one individual were removed from an unnamed site, AZ BB:10:20(ASM), in Pima County, AZ. The legally authorized survey collection was conducted by Arizona State Museum under the direction of L.D. Agenbroad and James Ayres. At the end of the survey, the archeological collections were brought to ASM, but no accession number was assigned. In 2010, ASM staff found fragmentary human remains intermingled with the survey collections. No known individuals were identified. No associated funerary objects are present. Site AZ BB:10:20(ASM) dates to the Hohokam cultural period, from A.D. 800–1450, based on ceramic typologies. Because these human remains were from a survey surface collection and had no provenience, there were no diagnostic artifacts that could be associated that could date the human bone more securely.

In 1975 or before, human remains representing, at minimum, two individuals were removed from an unknown site, AZ BB:13:—Nogales, in Pima County, AZ. The circumstances of discovery are unknown. In 1975, Leslie Hess donated the human remains to ASM. Accession records describe the human remains as two individuals associated with the Classic Hohokam period, A.D. 1150–1450. No known individuals were identified. The four associated funerary objects are four bird bones.

In 1969, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ BB:13:—River Road, in Pima County, AZ. The human remains were inadvertently discovered within a ceramic vessel by a private citizen, who brought them to ASM. No accession number was assigned and there is no record that the ceramic vessel was received by ASM. No known individuals were identified. No associated funerary objects are present. No information about the archeological context is available. The human remains were found in a Rincon Plain jar, and likely date to the Pre-Classic Hohokam period (A.D. 500–1150).

In 1896, human remains representing, at minimum, two individuals were removed from an unrecorded site, AZ BB:13:—Santa Cruz Valley, in Pima County, AZ. The exact location of the discovery and the name of the collector are unknown. ASM received the collection at an unknown date. No accession number was assigned. No known individuals were identified. The five associated funerary objects are one bone awl, one bone tool, two ceramic jar fragments, and one ceramic sherd. Ownership of the land on which the human remains were found is unknown. Based on the ceramic typology of the associated ceramic vessels, the cremation likely dates to the Tanque Verde phase of the Classic Hohokam period (A.D. 1150–1300).

In 1984–1985, human remains representing, at minimum, two individuals were removed from the Zanardelli Site, AZ BB:13:1(ASM), in Pima County, AZ. The legally authorized survey was conducted by the Institute for American Research under the direction of Allen Dart as part of the South Tucson Basin Survey project. At the end of the survey, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. No associated funerary objects are present. The Zanardelli Site was a large Classic period Hohokam village located in the east half of the Santa Cruz River floodplain. Based on ceramic typologies the site likely was occupied during the Hohokam Classic Period (A.D. 1150–1450).

In 1987 and during the years 2000 to 2003, human remains representing, at minimum, four individuals were removed from site AZ BB:13:6(ASM), in Tucson, Pima County, AZ. Legally authorized excavations were conducted in 1987 by the Institute for American Research under the direction of Mark Elson. Legally authorized excavations were conducted during 2000 through 2003 by Desert Archaeology, Inc. under the direction of Homer Thiel and Jonathan Mabry. At the end of each project, the archeological collections were brought to ASM and assigned accession numbers. The human remains were discovered by ASM staff in 2013, while searching through animal bone collections. No known individuals were identified. No associated funerary objects are present. Site AZ BB:13:6(ASM) is a multicomponent habitation and agricultural site, including occupations during the Late Archaic/Early Agricultural period (1500 B.C.–A.D. 200), the Early Ceramic and Hohokam periods (A.D. 200–1450), and the San Agustìn mission period from approximately A.D. 1700–1850. The human remains reported here are associated with the prehistoric components.

In 1958, human remains representing, at minimum, one individual were removed from the Joe Ben Site, AZ BB:13:11(ASM), in Pima County, AZ. The legally authorized excavations were conducted by ASM under the direction of E.B. Sayles and William Wasley. At the end of excavations, the archeological collections were brought to ASM, but were not formally accessioned. In 2011, ASM staff discovered cremated human bone fragments in the site survey collection. No known individuals were identified. No associated funerary objects are present. The Joe Ben site is a multicomponent site with Archaic (8000 B.C.–A.D. 200), ceramic period (A.D. 200–1100), and Hohokam Classic period (A.D. 1100–1450) components. The provenience of the human remains is unknown and no artifacts appear to have been collected with the human remains, however human cremations were extremely rare during the Archaic Period, it is therefore very likely that these human remains are from the Early Ceramic or Hohokam periods (A.D. 200–1450).

In 1982–1983, human remains representing, at minimum, five individuals were removed from the Valencia Site, AZ BB:13:15(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the Institute for American Research under the direction of William H. Doelle. At the end of excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The 10 associated funerary objects are nine ceramic sherds and one stone projectile point. The Valencia Site is a multi-component site that includes Paleoindian (12000 B.C.–8000 B.C.), Archaic (8000 B.C.–A.D. 200), Early Ceramic (A.D. 200–450), Hohokam Preclassic Period (A.D. 450–1100), and Hohokam Classic Period (A.D. 1100–1450) occupations. The human remains were found in association with features from the occupations that occurred during the Hohokam Preclassic and Classic periods.

In 1961 human remains representing, at minimum, one individual were removed from an unnamed site, AZ BB:13:23(ASM), in Tucson, Pima County, AZ. The human remains and associated funerary objects were found inadvertently during sewer line excavation, and were removed by construction workers. The human remains and associated funerary objects were subsequently donated to ASM and were assigned an accession number. No known individuals were identified. The two associated funerary objects are one ceramic bowl and one ceramic jar. Site AZ BB:13:23(ASM) is a large, Classic period Hohokam village located on a gravel terrace above the west bank of the Santa Cruz River. Based on ceramic typologies, the human remains likely date to the Tanque Verde phase of the Hohokam Classic period (A.D. 1150–1300).

In 1984, human remains representing, at minimum, 15 individuals were removed from the Tanque Verde Wash Site, AZ AA:BB:13:68(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the Institute for American Research under the direction of Mark Elson. At the end of excavations, the human remains were brought to ASM and assigned an accession number. No known individuals were identified. The 144 associated funerary objects are 1 bead, 1 ceramic bowl, 5 ceramic bowl fragments, 101 ceramic sherds, 9 lots of charcoal, 26 chipped stones, and 1 shell bracelet fragment. The Tanque Verde Wash Site is a multicomponent site with occupation during the Archaic (8000 B.C.–A.D. 200) and ceramic (A.D. 200–1450) periods. Based on ceramic typologies, the human remains date to the Middle Rincon phase of the Hohokam Sedentary period (A.D. 950–1100), when the site was most heavily occupied.

In 1979, human remains representing, at minimum, one individual were removed from the Rincon Community at Valencia site, AZ BB:13:74(ASM), in Pima County, AZ. The legally authorized excavations were conducted by Complete Archaeological Services Associates under the direction of Bruce A. Bradley for the City of Tucson. At the end of the excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The one associated funerary object is a ceramic jar. The Rincon Community at Valencia Site is a multicomponent site with several Late Archaic and Hohokam pithouses. The human remains were found in vessels that, based on ceramic typologies, date to the Hohokam Classic Period during the Tanque Verde phase (A.D. 1150–1300).

In 1978, human remains representing at minimum, 10 individuals were removed from the West 22nd Street Extension site, AZ BB:13:90(ASM), in Tucson, Pima county, AZ. The legally authorized excavations were conducted by Archaeological Resources, Inc. under the direction of George Schott for the City of Tucson. In 1982, the archeological collections from the excavations were brought to ASM and assigned an accession number. No known individuals were identified. The 47 associated funerary objects are 1 bone bead, 2 ceramic jars, 1 ceramic pitcher, 21 ceramic sherds, 1 slag fragment, 20 soil samples, and 1 lot of stone beads. The West 22nd Street Extension site is located in the floodplain of the Santa Cruz River and consists of a cremation area that is eroding out of the floodplain into a borrow pit and dumping area. Based on ceramic typologies of the vessels associated with the cremations, the human remains likely date to the Rincon phase of the Pre-Classic or the Tanque Verde phase of the Classic

Hohokam period, approximately A.D. 850–1300.

In 1985, human remains representing, at minimum, one individual were removed from the Spence Site, AZ BB:13:120(ASM), in Pima County, AZ. The legally authorized survey was conducted by the Institute for American Research under the direction of William Doelle, Allen Dart, and Henry D. Wallace as part the of Southern Tucson Basin Survey. At the end of the survey, the archeological collections were brought to ASM and assigned an accession number. In 2010, ASM staff discovered fragmentary human remains in the site survey collection. No known individuals were identified. No associated funerary objects are present. The Spence Site was a large Classic period Hohokam village with dense artifact scatters and trash mounds. The site has components from the Early Ceramic and Pre-Classic Hohokam (A.D. 200–1100) to the Classic Hohokam (A.D. 1100–1450) period, and the human remains likely date to this time period.

In 1988, human remains representing, at minimum, one individual were removed from an unnamed site, AZ BB:13:160(ASM), in Tucson, Pima County, AZ. The legally authorized excavations were conducted by ASM under the direction of James Ayres. At the end of excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. No associated funerary objects are present. Site AZ BB:13:160(ASM) is a multicomponent site in downtown Tucson with occupations from the prehistoric to the historical period. The human remains were found in disturbed overburden above a privy that was used in the early and late historical period (A.D. 1500–1950), but the presence of prehistoric materials at the site indicate occupation during the Archaic period (8000 B.C.–A.D. 200) and the Hohokam period (A.D. 450–1450). It is likely that the human remains are associated with the prehistoric components.

In 1986, human remains representing, at minimum, one individual were removed from an unnamed site, AZ BB:13:320(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the Institute for American Research under the direction of William Doelle for the El Rio Monitoring project. At the end of the excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The three associated funerary objects are one animal bone and two chipped stone fragments. Site AZ BB:13:320(ASM) was a village site and artifact scatter located on the west side of the Santa Cruz River that is dated to the ceramic period (A.D. 200–1450). Based on other features found near the discovery, the burial likely dates to the Rincon phase of the Hohokam period (A.D. 1000–1150).

In 1990–1991, human remains representing, at minimum, 14 individuals were removed from the Houghton Road site, AZ BB:13:398(ASM), in Pima County, AZ. The legally authorized excavations were conducted by Statistical Research, Inc. under the direction of Richard Ciolek-Torrelo. At the end of the excavations, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The 611 associated funerary objects are 2 animal bones, 1 bone bead, 263 ceramic sherds, 7 lots of charcoal, 3 chipped stones, 1 chipped stone artifact, 310 chipped stone fragments, 1 dog skeleton, 15 flotation fraction lots, 1 flotation sample, 1 ground stone, 3 pollen samples, 1 shell bead, 1 shell bracelet fragment, and 1 turquoise bead. The Houghton Road site was a habitation site with occupation spanning the Late Archaic through Hohokam periods (1500 B.C.–A.D. 1300). The human remains from Houghton Road Site likely date to the late Archaic (1500 B.C.–A.D. 200) or Early Ceramic (A.D. 200–400) components, based on material culture and radiocarbon dates from an associated feature.

In 1969, human remains representing, at minimum, one individual were removed from an unnamed site, AZ BB:14:—Colossal Cave vicinity, in Pima County, AZ. The human remains and associated funerary object were collected from an unknown provenience by Kenneth Hartsock. The human remains were later donated to ASM and assigned an accession number. No known individuals were identified. The one associated funerary object is a ceramic jar. The unnamed site in the Colossal Cave vicinity is an area that has a long history of prehistoric human occupation, and is located southeast of Tucson. Based on artifact typology and the mortuary pattern, it is likely that the human remains date to the Hohokam Period (A.D. 500–1450).

In 1927, human remains representing, at minimum, 11 individuals were removed from the Tanque Verde Ruin, AZ BB:14:1(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona under the direction of Edward John Hands. At the end of the excavations, the archeological collections were brought to ASM, but no accession number was assigned. No known individuals were identified. The 15 associated funerary objects are 1 bone awl, 2 bone awl fragments, 10 ceramic jars, 1 ceramic jar fragment, and 1 ceramic sherd. Tanque Verde Ruin was a Hohokam pit house village on a flat-topped ridge and is located in the Rincon Valley of the Tucson Basin. Based on ceramic typologies of the associated funerary vessels, these burials likely date to the Hohokam Classic period during the Tanque Verde phase (A.D. 1150–1300).

In 1943, human remains representing at minimum, one individual were removed from an unnamed site, AZ BB:14:11(ASM), in Pima County, AZ. The legally authorized survey was conducted by ASM under the direction of Emil Haury. No human remains were reported at the time of the survey. At the end of the survey, the archeological collections were brought to ASM, but were not assigned an accession number. In 2010, ASM staff found isolated human remains in the site survey box. No known individuals were identified. No associated funerary objects are present. Site AZ BB:14:11(ASM) is recorded as being a village site. Based on the ceramics, the site likely dates to the Rincon Phase (A.D. 950–1150) of the Hohokam period.

In 1974 and 1979, human remains representing, at minimum, two individuals were removed from the 49ers Country Club Sewer Line site, AZ BB:14:17(ASM), in Pima County, AZ. In both cases, human remains were inadvertently discovered during construction of utility trenches, and excavations were conducted by ASM at the request of the landowners. The legally authorized excavation in 1974 was conducted under the direction of R. Gwinn Vivian and Sharon Urban. In 1979, another inadvertent discovery resulted in legally authorized excavations under the direction of Bruce Huckell. In 1982, the landowner donated the human remains and associated funerary object to the Arizona State Museum. No known individuals were identified. The one associated funerary object is a ceramic bowl fragment. Site AZ BB:14:17(ASM) is a multi-component site with a long history of human occupation from the Late Archaic period through historical times. The ceramic fragment from the 1979 burial may date to the Protohistoric period (A.D. 1450–1694). No diagnostic artifacts were collected from the human remains found in 1974, and it is difficult to date the burial. However, because the burial was intrusive into a trash area with ceramics present and that the area was likely a

Hohokam cemetery, this burial likely belongs to the Hohokam cultural period (A.D. 500–1450).

On an unknown date in 1963 or later, human remains representing, at minimum, one individual were removed from 49er Ranch Estates site, AZ BB:14:22(ASM), in Pima County, AZ. The human remains were donated to ASM by Dick Figgins, but were not assigned an accession number. No known individuals were identified. No associated funerary objects are present. The 49er Ranch Estates site is an artifact scatter located in the Rincon Mountains, northeast of Tucson. Based on ceramic typologies the site dates to the Hohokam Colonial Period (A.D. 750–950), and the human remains are most likely from this time period.

In 1916 or earlier, human remains representing, at minimum, two individuals were removed from an unknown site, AZ Cremation 12, along the Santa Cruz River in Tucson, Pima county, AZ. The human remains and a cremation vessel were donated to ASM in 1916. No accession number was assigned. No known individuals were identified. The one associated funerary object is a ceramic jar. No information regarding the archeological context is available. The burial likely dates to the Hohokam period (A.D. 450–1450) based on the ceramic typology.

In the 1920s or 1930s, human remains representing, at minimum, four individuals were removed from an unknown site or sites, AZ Unknown Pueblo, by Dr. Byron Cummings. The human remains and associated ceramic vessels were brought to ASM and assigned catalogue numbers. No known individuals were identified. The five associated funerary objects are one bone awl fragment and four ceramic jars. The catalogue cards refer to the location as ''Prehistoric Pueblo.'' Dr. Cummings used this term to refer to what are now known to be Hohokam platform mounds. The catalogue numbers are within a sequence assigned to two prominent platform mound sites in the Tucson region: University Indian Ruin, AZ BB:9:33(ASM) and Martinez Hill Ruin, AZ BB:13:3(ASM). The ceramic style is highly consistent with similar objects found at these sites and others in the Tucson Basin. The exact location of the discovery cannot be determined, but it is highly likely that these human remains and objects came from a site or sites in the Tucson region. Based on the ceramic typology, the human remains may be dated to the Hohokam period (A.D. 450–1450).

Prehistoric settlements in the Tucson Basin of southern Arizona are characterized by archeologists as belonging to two distinctive and consecutive cultural traditions beginning with the Late Archaic/Early Agricultural period and concluding with the Hohokam period. Recent archeological investigations have added support to the hypothesis that the Hohokam tradition arose from the earlier horizon, based on continuities in settlement pattern, architectural technologies, irrigation technologies, subsistence patterns, and material culture. It has been difficult for archeologists to date the beginning of the Hohokam period because the appearance of its distinctive cultural traits, including ceramic technologies and mortuary patterns was a gradual process spanning several hundred years. This adds further support to the hypothesis that the Hohokam tradition evolved in place from earlier Late Archaic traditions. Linguistic evidence furthermore suggests that the Hohokam tradition was multiethnic in nature.

Cultural continuity between these prehistoric occupants of the Tucson Basin and present day O'odham peoples is supported by continuities in settlement pattern, architectural technologies, basketry, textiles, ceramic technology, and ritual practices. Oral traditions that are documented for the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation, Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and the Tohono O'odham Nation of Arizona support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in southern Arizona.

Oral traditions that are documented for the Hopi Tribe also support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in the region. Several Hopi clans and religious societies are derived from ancestors who migrated from the south and likely identified with the Hohokam tradition.

Oral traditions of medicine societies and kiva groups of the Zuni Tribe recount migration from distant portions of the Southwest to present day Zuni and support affiliation with Hohokam and Late Archaic traditions. Historical linguistic analysis also suggests interaction between ancestral Zuni and Uto-Aztecan speakers during the late Hohokam period.

Determinations Made by the Arizona State Museum

Officials of the ASM have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 292 individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the 1,914 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and associated funerary objects and Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and the Zuni Tribe of the Zuni Reservation, New Mexico.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and the Zuni Tribe of the Zuni Reservation, New Mexico may proceed.

The ASM is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and the Zuni Tribe of the Zuni Reservation, New Mexico, that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21475 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16365; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: History Colorado, Formerly Colorado Historical Society, Denver, CO

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: History Colorado, formerly Colorado Historical Society, has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to History Colorado. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to History Colorado at the address in this notice by October 10, 2014.

ADDRESSES: Sheila Goff, NAGPRA Liaison, History Colorado, 1200 Broadway, Denver, CO 80203, telephone (303) 866–4561, email *sheila.goff@state.co.us*.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of History Colorado, Denver, CO. Three sets of remains were received from the La Plata County Coroner. They were recovered from western Durango, CO.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by History Colorado professional staff in consultation with representatives of the Hopi Tribe of Arizona; Jicarilla Apache Nation, New Mexico; Navajo Nation, Arizona, New Mexico & Utah; Pueblo of Acoma, New Mexico; Pueblo of Isleta, New Mexico; Pueblo of Jemez, New Mexico; Pueblo of Laguna, New Mexico; Pueblo of Nambe, New Mexico; Pueblo of Pojoaque, New Mexico; Pueblo of San Ildefonso, New Mexico; Pueblo of Sandia, New Mexico; Pueblo of Santa Ana, New Mexico; Pueblo of Santa Clara, New Mexico; Southern Ute Indian Tribe of the Southern Ute Indian Reservation, Colorado; Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah; Ysleta del Sur Pueblo of Texas; and Zuni Tribe of the Zuni Reservation, New Mexico. The Kewa Pueblo, New Mexico (previously listed as the Pueblo of Santo Domingo); Ohkay Owingeh, New Mexico (previously listed as the Pueblo of San Juan); Pueblo of Picuris, New Mexico; Pueblo of San Felipe, New Mexico; Pueblo of Taos, New Mexico; Pueblo of Tesuque, New Mexico and Pueblo of Zia, New Mexico, were invited to consult, but did not participate. Hereafter, all tribes listed above are referred to as ''The Consulted and Invited Tribes.''

History and Description of the Remains

In 1958, human remains representing, at minimum, three individuals were removed from dirt piles during the construction of a subdivision in the western part of Durango by a private citizen as a child. The citizen turned them over to the La Plata County Coroner in September 2013, who ruled out a forensic interest in the human remains and turned them over to the Office of the State Archaeologist (OSAC), where they are identified as Office of Archaeology and Historic Preservation (OAHP) Case Number 299. Osteological analysis by Dr. Catherine Gaither indicates that the human remains are likely of Native American ancestry. No known individuals were identified. No associated funerary objects are present.

History Colorado, in partnership with the Colorado Commission of Indian Affairs, Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado, and the Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah, conducted tribal consultations among the tribes with ancestral ties to the State of Colorado to develop the process for disposition of culturally unidentifiable Native American human remains and associated funerary objects originating from inadvertent discoveries on Colorado State and private lands. As a result of the consultation, a process was developed, *Process for Consultation, Transfer, and Reburial of Culturally Unidentifiable Native American Human Remains and Associated Funerary Objects Originating From Inadvertent Discoveries on Colorado State and Private Lands,* (2008, unpublished, on file with the Colorado Office of Archaeology and Historic Preservation). The tribes consulted are those who have expressed their wishes to be notified of discoveries in the Southwest Consultation Region as established by the *Process,* where this individual originated.

The Native American Graves Protection and Repatriation Review Committee (Review Committee) is responsible for recommending specific actions for disposition of culturally unidentifiable human remains. On November 3–4, 2006, the *Process* was presented to the Review Committee for consideration. A January 8, 2007, letter on behalf of the Review Committee from the Designated Federal Officer transmitted the provisional authorization to proceed with the *Process* upon receipt of formal responses from the Jicarilla Apache Nation, New Mexico, and the Kiowa Indian Tribe of Oklahoma, subject to forthcoming conditions imposed by the Secretary of the Interior. On May 15–16, 2008, the responses from the Jicarilla Apache Nation, New Mexico, and the Kiowa Indian Tribe of Oklahoma were submitted to the Review Committee. On September 23, 2008, the Assistant Secretary for Fish and Wildlife and Parks, as the designee for the Secretary of the Interior, transmitted the authorization for the disposition of culturally unidentifiable human remains according to the *Process* and NAGPRA, pending publication of a Notice of Inventory Completion in the **Federal Register**. This notice fulfills that requirement.

43 CFR 10.11 was promulgated on March 15, 2010, to provide a process for the disposition of culturally unidentifiable Native American human remains recovered from tribal or aboriginal lands as established by the final judgment of the Indian Claims

Commission or U.S. Court of Claims, a treaty, Act of Congress, or Executive Order, or other authoritative governmental sources. As there is no evidence indicating that the human remains reported in this notice originated from tribal or aboriginal lands, they are eligible for disposition under the *Process.*

Determinations Made by History Colorado

Officials of History Colorado have determined that:

- Based on osteological analysis, the human remains are Native American.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of three individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- Pursuant to 43 CFR 10.11(c)(2)(ii) and the *Process,* the disposition of the human remains may be to the Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado, and the Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Sheila Goff, NAGPRA Liaison, History Colorado, 1200 Broadway, Denver, CO 80203, telephone (303) 866–4531, email *sheila.goff@state.co.us* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado, and the Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah may proceed.

History Colorado is responsible for notifying The Consulted and Invited Tribes that this notice has been published.

Dated: July 30, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21522 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16310; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: State Historical Society of Wisconsin, Madison, WI

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The State Historical Society of Wisconsin has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and any present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the State Historical Society of Wisconsin. If no additional requestors come forward, transfer of control of the human remains to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the State Historical Society of Wisconsin at the address in this notice by October 10, 2014.

ADDRESSES: Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the State Historical Society of Wisconsin, Madison, WI. The human remains were removed from the F. Helmer Lakeshore Site, Marquette County, WI.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the State Historical Society of Wisconsin professional staff in consultation with representatives of the Forest County Potawatomi Community, Wisconsin; Ho-Chunk Nation of Wisconsin; and the Menominee Indian Tribe of Wisconsin.

History and Description of the Remains

In 1886, human remains representing, at minimum, one individual (A01304) were removed from the F. Helmer Lakeshore Site (47–MQ–0088) in Marquette County, WI. The human remains were removed by F.J. Turner, H.B. Newman, and M. Perkins from a conical mound on the south shore of Buffalo Lake. Tuner, Newman, and Perkins donated the human remains to the State Historical Society in 1886. The human remains were later determined to represent an adult male. No known individuals were identified. No associated funerary objects are present.

Determinations Made by the State Historical Society of Wisconsin

Officials of the State Historical Society of Wisconsin have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the location and context of the burial, skeletal analysis, and State Historical Society records.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains were removed is the aboriginal land of the Ho-Chunk Nation of Wisconsin and the Winnebago Tribe of Nebraska.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains were removed is the aboriginal land of the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; and the Winnebago Tribe of Nebraska.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains may be to the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; and the Winnebago Tribe of Nebraska.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Jennifer Kolb, Wisconsin Historical Museum, 30 North Carroll Street, Madison, WI 53703, telephone (608) 261–2461, email *Jennifer.Kolb@wisconsinhistory.org,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; and the Winnebago Tribe of Nebraska may proceed.

The State Historical Society of Wisconsin is responsible for notifying the Ho-Chunk Nation of Wisconsin; Menominee Indian Tribe of Wisconsin; and the Winnebago Tribe of Nebraska that this notice has been published.

Dated: July 24, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21506 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16307; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: U.S. Department of Defense, Army, Fort Sill National Historic Landmark and Museum, Fort Sill, OK

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Fort Sill National Historic Landmark and Museum has completed an inventory of human remains, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is a cultural affiliation between the human remains and present-day Indian tribes or Native Hawaiian organizations. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request to the Fort Sill National Historic Landmark and Museum. If no additional requestors come forward, transfer of control of the human remains to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to the Fort Sill National Historic Landmark and Museum at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email *scott.a.neel2.civ@mail.mil.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains under the control of the Fort Sill National Historic Landmark and Museum, Fort Sill, OK.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the Fort Sill National Historic Landmark and Museum and Fort Sill Environmental Quality Division professional staff in consultation with representatives of the Apache Tribe of Oklahoma; Caddo Nation of Oklahoma; Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma); Comanche Nation, Oklahoma; Delaware Nation, Oklahoma; Fort Sill Apache Tribe of Oklahoma; Kiowa Indian Tribe of Oklahoma; Navajo Nation, Arizona, New Mexico & Utah; The Chickasaw Nation; and the Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma.

History and Description of the Remains

In 1874, human remains representing, at minimum, one individual were taken near Lubbock, TX. The human remains consist of a scalp taken by Chief Big Bow, a prominent war chief of the Kiowa who, on a number of occasions, was reported to have taken scalps from defeated enemies. In 1962, Chief Big Bow's great grandson sold the scalp to Fort Sill (62.99.4). The grandson testified at the time that Chief Big Bow had taken the scalp from a Navajo in the 1870s. Historical records indicate that in 1874, Navajos stole the horses belonging to Chief Big Bow in the vicinity of Yellow House Canyon or Blanco Canyon, TX. Chief Big Bow was also a participant in the Red River War in 1874, in the vicinity of Yellow House Canyon and Blanco Canyon. Other sources record that Chief Big Bow was on a foray into New Mexico in 1855, when he almost single-handedly captured several ponies and took a Navajo scalp.

Determinations Made by the Fort Sill National Historic Landmark and Museum

Officials of the Fort Sill National Historic Landmark and Museum have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of one individual of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and the Navajo Nation, Arizona, New Mexico & Utah.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains should submit a written request with information in support of the request to Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email *scott.a.neel2.civ@mail.mil,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains to the Navajo Nation, Arizona, New Mexico & Utah may proceed.

The Fort Sill National Historic Landmark and Museum is responsible for notifying the Apache Tribe of Oklahoma; Caddo Nation of Oklahoma; Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma); Comanche Nation, Oklahoma; Delaware Nation, Oklahoma; Fort Sill Apache Tribe of Oklahoma; Kiowa Indian Tribe of Oklahoma; Navajo Nation, Arizona, New Mexico & Utah; The Chickasaw Nation; and the Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma, that this notice has been published.

Dated: July 17, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21530 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16230; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: University of Massachusetts Amherst, Department of Anthropology, Amherst, MA; Correction

AGENCY: National Park Service, Interior.

ACTION: Notice; correction.

SUMMARY: The University of Massachusetts Amherst, Department of Anthropology has corrected an inventory of human remains and associated funerary objects published in a Notice of Inventory Completion in the **Federal Register** on May 15, 2014. This notice corrects the minimum number of individuals and number of associated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the University of Massachusetts Amherst, Department of Anthropology. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the University of Massachusetts Amherst, Department of Anthropology at the address in this notice by October 10, 2014.

ADDRESSES: Julie Woods, Repatriation Coordinator, University of Massachusetts Amherst, Department of Anthropology, 215 Machmer Hall, 240 Hicks Way, Amherst, MA 01003, telephone (413) 545–2702, email *repat@anthro.umass.edu*.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the correction of an inventory of human remains and associated funerary objects under the control of the University of Massachusetts Amherst, Department of Anthropology, Amherst, MA. The human remains and associated funerary objects were removed from Gill, Franklin County, MA, and Northampton, Hampshire County, MA.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

This notice corrects the minimum number of individuals and number of associated funerary objects published in a Notice of Inventory Completion in the **Federal Register** (79 FR 27926–27928, May 14, 2014). The associated funerary objects from the Casley-Stempel site in Gill, MA, and human remains and associated funerary objects from the Bark Wigwams Site, Northampton, MA, were mistakenly omitted from this Notice of Inventory Completion. Transfer of control of the items in this correction notice has not occurred.

Correction

In the **Federal Register** (79 FR 27926–27928, May 14, 2014), paragraph 4, sentence 2 is corrected by substituting the following:

> The human remains and associated funerary objects were removed from the towns of Westfield in Hampden County, MA; Easthampton, Northampton, Hatfield, Hadley, North Hadley, and South Hadley in Hampshire County, MA; Deerfield, Gill, and Greenfield in Franklin County, MA; and Hardwick and Princeton, in Worcester County, MA.

In the **Federal Register** (79 FR 27926–27928, May 14, 2014), paragraph 16, sentences 9–11 are corrected by substituting the following:

> From the Casley-Stemple site, 4,190 associated funerary objects were removed. The associated funerary objects include individual non-lithic funerary objects and 849 lots of lithic artifacts. The non-lithic artifacts include 1,870 pottery sherds, 506 unidentified faunal bones, 838 pieces of charcoal, 5 unidentified seeds, 1 piece of whiteware, 5 pieces of brick, 1 piece of glass, 3 pieces of soapstone, 1 piece of iron, 5 sets of red ocher fragments, 14 pieces of shell and 92 unidentified artifacts. The 849 lots of lithic artifacts include a majority of flakes, fragments, and chipping debris of various materials; partial and complete projectile points; preforms and chunks of quartz and other materials; perforators; edge tools; hammerstones; and cobbles.

In the **Federal Register** (79 FR 27926–27928, May 14, 2014), after paragraph 19, insert the following:

> During a Field School in 1985, an inadvertent discovery of a burial led to the excavation of two individuals at the Bark Wigwams site, Northampton, Hampshire County, MA, by faculty and students of the University of Massachusetts, Department of Anthropology, as requested by the Massachusetts State Archaeologist. The individuals were transferred to the Massachusetts Historical Commission and were believed to be reinterred at an unknown date. Soil samples containing bone and teeth fragments representing, at minimum, one individual and associated funerary objects have remained at the University. No known individuals were identified. From the Bark Wigwams site 38 lots of associated funerary objects were removed, including 5 lots of historic material (glass, metals, ceramics and brick), 1 lot of charred nuts, 8 lots of lithic flakes, 5 lots of stone tool fragments, 1 lot of rock, 3 lots of lithic debitage, 2 lots of projectile points, 3 lots of unidentified faunal bone, 1 lot of unidentified charred bone, 1 lot of organic material, 4 lots of soil samples and 4 lots of burial soil.

In the **Federal Register** (79 FR 27926–27928, May 14, 2014), paragraph 22 is corrected by substituting the following:

> Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 95 individuals of Native American ancestry.

In the **Federal Register** (79 FR 27926–27928, May 14, 2014), paragraph 23 is corrected by substituting the following:

> Pursuant to 25 U.S.C. 3001(3)(A), the 4,234 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to Julie Woods, Repatriation Coordinator, University of Massachusetts Amherst, Department of Anthropology, 215 Machmer Hall, 240 Hicks Way, Amherst, MA 01003, telephone (413) 545–2702, email *repat@anthro.umass.edu,* by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Narragansett Indian Tribe; Stockbridge Munsee Community, Wisconsin; and Wampanoag Tribe of Gay Head (Aquinnah) may proceed.

The University of Massachusetts Amherst, Department of Anthropology is responsible for notifying the Narragansett Indian Tribe; Stockbridge Munsee Community, Wisconsin; Wampanoag Tribe of Gay Head (Aquinnah); and non-Federally recognized Indian groups, including Abenaki Nation of Missisquoi, St. Francis/Sokoki Band, VT; Abenaki Nation of New Hampshire; Cowasuck Band of the Pennacook—Abenaki People, NH; Elnu Tribe of the Abenaki, VT; Koasek (Cowasuck) Traditional Band of the Koas Abenaki Nation, VT; Koasek Traditional Band of the Sovereign Abenaki Nation, VT; Nulhegan Band of the Coosuk-Abenaki Nation, VT; and Chaubunagungamaug Nipmuck and Nipmuc Nation, MA, that this notice has been published.

Dated: July 16, 2014.

Sherry Hutt,

Manager, National NAGPRA Program.

[FR Doc. 2014–21515 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16414; PPWOCRADN0–PCU00RP14.R50000]

Notice of Inventory Completion: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, University of Arizona, has completed an inventory of human remains and associated funerary objects, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, and has determined that there is no cultural affiliation between the human remains and associated funerary objects and present-day Indian tribes or Native Hawaiian organizations. Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request to the Arizona State Museum, University of Arizona. If no additional requestors come forward, transfer of control of the human remains and associated funerary objects to the Indian tribes or Native Hawaiian organizations stated in this notice may proceed.

DATES: Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003, of the completion of an inventory of human remains and associated funerary objects under the control of the Arizona State Museum, University of Arizona, Tucson, AZ. The human remains and associated funerary objects were removed from Pima County, AZ.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3) and 43 CFR 10.11(d). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American human remains and associated funerary objects. The National Park Service is not responsible for the determinations in this notice.

Consultation

A detailed assessment of the human remains was made by the Arizona State Museum (ASM) professional staff in consultation with representatives of the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; San Carlos Apache Tribe of the San Carlos Reservation, Arizona; Tohono O'odham Nation of Arizona; Tonto Apache Tribe of Arizona; White Mountain Apache Tribe of the Fort Apache Reservation, Arizona; and Yavapai-Apache Nation of the Camp Verde Indian Reservation, Arizona.

History and Description of the Remains

In 1995, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ BB:10:—in Pima County, AZ. The human remains were exposed by erosion in a wash and reported to the Pima County Sheriff's Department. The Sheriff's Department collected the human remains, assigned a case number, and brought them to their offices where the medical examiner determined that the human remains were prehistoric. The human remains were transferred to ASM in August 1995, but were not assigned an accession number. No known individuals were identified. No associated funerary objects are present. Based on dental wear and other biological indications, the human remains likely date to the prehistoric or early historical period (9000 BC–AD 1850).

In 1999, human remains representing, at minimum, one individual were removed from private land at an unrecorded site, AZ BB:13:—South Fontana, in Tucson, AZ. The landowner reported the find to the Tucson Police Department. The police department assigned a case number and consulted with forensic anthropologist Dr. Walter Birkby, who determined that the remains were likely prehistoric. The human remains were subsequently transferred to ASM and were assigned an accession number. No known individuals were identified. No associated funerary objects are present.

In 2007, human remains representing, at minimum, one individual were removed from the Barrio Libre Site, AZ BB:13:495(ASM), in Tucson, AZ. The human remains were inadvertently found in a city-owned right-of-way during the construction of a residence. The legally authorized excavation was conducted by Desert Archaeology, Inc. under the direction of Homer Thiel. When the excavations were concluded, the archeological collections were brought to ASM and assigned an accession number. No known individuals were identified. The 13 associated funerary objects are 1 hematite fragment and 12 pieces of chipped stone. The Barrio Libre site is part of an area of known protohistoric and historical occupation of people of O'odham, Apache, and/or Hispanic descent. Based on the site dates, the human remains likely date to the early historical period (A.D. 1600–1800). The flexed position of the human remains, absence of any indications of a container, and the presence of hematite are consistent with a prehistoric or early historical period Native American burial.

In 1973, human remains representing, at minimum, one individual were removed by a boy from an unrecorded site, AZ BB:9:—Catalina vicinity, in Pima County, AZ. In 1987, the boy reburied the remains in a wooden box. In 1991, the box was re-exposed and the discovery was reported to the Pima County Sheriff's Office. A note found in the box described the original discovery

but gave no further information about the location of the original burial. The Sheriff's Office collected the human remains, brought them to their offices, and assigned a case number. Forensic anthropologists from the Human Identification Laboratory, University of Arizona, examined the remains at the sheriff's office and determined that the human remains were likely archeological in nature. Morphological traits of the dentition and the presence of cranial deformation caused by cradleboarding are consistent with Native American ancestry. The human remains were subsequently transferred to ASM but were not assigned an accession number. No known individuals were identified. The five associated funerary objects are animal bones.

In 1973, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ BB:9:—ME–115–73 in Pima County, AZ. The burial was exposed by erosion in a wash. No other contextual information about the discovery has been found. A detective from the Pima County Sheriff's Office collected the remains, assigned a case number, and delivered them to Dr. Walter Birkby of the Human Identification Lab, University of Arizona. Dr. Birkby determined the human remains to be prehistoric and likely of Native American ancestry. They were later transferred to ASM, but were not assigned an accession number. No known individuals were identified. No associated funerary objects are present.

In 1969, human remains representing, at minimum, one individual were removed from an unrecorded site, AZ BB:9:—Tucson Site 16 in Tucson, AZ. The burial was discovered on private land on the east side of the Santa Cruz River. At the request of the landowner, James Ayres and Walter Birkby of ASM conducted the excavation. The burial was found in disturbed sediments and no further information regarding the archeological context is available. The human remains were subsequently brought to ASM, but were not assigned an accession number. Based on physical attributes the human remains were determined to be consistent with Native American ancestry. No known individuals were identified. No associated funerary objects are present.

In 1973, human remains representing, at minimum, one individual were removed from site AZ BB:9:65(ASM) in Pima County, AZ. The burial was found inadvertently by a construction company in the course of excavating a sewer trench along the channel of an unnamed wash. At the request of the landowner, excavations were conducted by ASM under the direction of Bruce Huckell. The human remains were subsequently brought to the museum and assigned an accession number. No known individuals were identified. No associated funerary objects are present. Site AZ BB:9:65(ASM) consists of single human burial. Other than a hearth that was not associated with the burial, no other cultural features were found at the site. Physical attributes of the human remains are consistent with a prehistoric Native American burial.

Determinations Made by the Arizona State Museum

Officials of ASM have determined that:

- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice are Native American based on the physical characteristics of the remains and/or the burial context.
- Pursuant to 25 U.S.C. 3001(9), the human remains described in this notice represent the physical remains of 7 individuals of Native American ancestry.
- Pursuant to 25 U.S.C. 3001(3)(A), the 18 objects described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony.
- Pursuant to 25 U.S.C. 3001(2), a relationship of shared group identity cannot be reasonably traced between the Native American human remains and associated funerary objects and any present-day Indian tribe.
- According to final judgments of the Indian Claims Commission or the Court of Federal Claims, the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Tohono O'odham Nation of Arizona.
- Treaties, Acts of Congress, or Executive Orders, indicate that the land from which the Native American human remains and associated funerary objects were removed is the aboriginal land of the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; San Carlos Apache Tribe of the San Carlos Reservation, Arizona; Tohono O'odham Nation of Arizona; Tonto Apache Tribe of Arizona; White Mountain Apache Tribe of the Fort Apache Reservation, Arizona; and Yavapai-Apache Nation of the Camp Verde Indian Reservation, Arizona.
- Pursuant to 43 CFR 10.11(c)(1), the disposition of the human remains and associated funerary objects may be to the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; San Carlos Apache Tribe of the San Carlos Reservation, Arizona; Tohono O'odham Nation of Arizona; Tonto Apache Tribe of Arizona; White Mountain Apache Tribe of the Fort Apache Reservation, Arizona; and Yavapai-Apache Nation of the Camp Verde Indian Reservation, Arizona.

Additional Requestors and Disposition

Representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to request transfer of control of these human remains and associated funerary objects should submit a written request with information in support of the request to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional requestors have come forward, transfer of control of the human remains and associated funerary objects to the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; San Carlos Apache Tribe of the San Carlos Reservation, Arizona; Tohono O'odham Nation of Arizona; Tonto Apache Tribe of Arizona; White Mountain Apache Tribe of the Fort Apache Reservation, Arizona; and Yavapai-Apache Nation of the Camp Verde Indian Reservation, Arizona, may proceed.

The Arizona State Museum is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; San Carlos Apache Tribe of the San Carlos Reservation, Arizona; Tohono O'odham Nation of Arizona; Tonto Apache Tribe of Arizona; White Mountain Apache Tribe of the Fort Apache Reservation, Arizona; and Yavapai-Apache Nation of the Camp Verde Indian Reservation, Arizona, that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21473 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–NERO–CACO–16516, PPNECACOS0, PPMPSD1Z.YM0000]

Notice of September 29, 2014, Meeting for Cape Cod National Seashore Advisory Commission

AGENCY: National Park Service, Interior.

ACTION: Meeting notice.

SUMMARY: This notice sets forth the date of the 295th meeting of the Cape Cod National Seashore Advisory Commission.

DATES: The public meeting of the Cape Cod National Seashore Advisory Commission will be held on Monday, September 29, 2014, at 1:00 p.m. (EASTERN).

ADDRESSES: The Commission members will meet in the conference room at park headquarters, 99 Marconi Site Road, Wellfleet, Massachusetts 02667.

The 295th meeting of the Cape Cod National Seashore Advisory Commission will take place on Monday, September 29, 2014, at 1:00 p.m., in the meeting room at Headquarters, 99 Marconi Station Road, in Wellfleet, Massachusetts to discuss the following:

1. Adoption of Agenda
2. Approval of Minutes of Previous Meeting (June 9, 2014)
3. Reports of Officers
4. Reports of Subcommittees
   - Update of Pilgrim Nuclear Plant Emergency Planning Subcommittee
5. Superintendent's Report
   - Shorebird Management Planning
   - National Park Service Centennial
   - Improved Properties/Town Bylaws
   - Herring River Wetland Restoration
   - Highlands Center Update
   - Ocean Stewardship Topics—Shoreline Change
   - Climate Friendly Parks
   - National Seashore Web site Update
6. Old Business
   - Continue Discussion of NSTAR Spraying Plans, Clearing Alternatives and Utility Right-of-Ways
   - Live Lightly Campaign Progress Report
7. New Business
8. Date and Agenda for Next Meeting
9. Public Comment
10. Adjournment

FOR FURTHER INFORMATION CONTACT: Further information concerning the meeting may be obtained from George E. Price, Jr., Superintendent, Cape Cod National Seashore, 99 Marconi Site Road, Wellfleet, MA 02667, or via telephone at (508) 771–2144.

SUPPLEMENTARY INFORMATION: The Commission was reestablished pursuant to Public Law 87–126, as amended by Public Law 105–280. The purpose of the Commission is to consult with the Secretary of the Interior, or her designee, with respect to matters relating to the development of Cape Cod National Seashore, and with respect to carrying out the provisions of sections 4 and 5 of the Act establishing the Seashore.

The meeting is open to the public. It is expected that 15 persons will be able to attend the meeting in addition to Commission members. Interested persons may make oral/written presentations to the Commission during the business meeting or file written statements. Such requests should be made to the park superintendent prior to the meeting. Before including your address, telephone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Date: September 3, 2014.

Alma Ripps,

Chief, Office of Policy.

[FR Doc. 2014–21555 Filed 9–9–14; 8:45 am]

BILLING CODE 4310–EE–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–NERO–GATE–16130; PPNEGATEB0, PPMVSCS1Z.Y00000]

Notice of October and December 2014 Meetings for Gateway National Recreation Area Fort Hancock 21st Century Advisory Committee

AGENCY: National Park Service, Interior.

ACTION: Meeting Notice.

SUMMARY: This notice sets forth the dates of meetings of the Gateway National Recreation Area Fort Hancock 21st Century Advisory Committee occurring in October and December 2014.

DATES: The schedule for future public meetings of the Committee is, as follows:

1. October 17, 2014, at 9:00 a.m. (EASTERN).
2. December 12, 2014, at 9:00 a.m. (EASTERN).

ADDRESSES: For the October and December 2014 meetings, the Committee will meet at The Chapel at Sandy Hook, Hartshorne Drive, Middletown, NJ 07732. Please check *www.forthancock21stcentury.org* for additional information.

AGENDA: The Committee meeting will consist of the following:

The final agenda will be posted on *www.forthancock21stcentury.org* prior to each meeting.

FOR FURTHER INFORMATION CONTACT: Further information concerning the meeting may be obtained from John Warren, External Affairs Officer, Gateway National Recreation Area, 26 Hudson Road, Fort Hancock, NJ, at (732) 872–5908 or email *forthancock21stcentury@yahoo.com,* or by visiting the Committee Web site at *www.forthancock21stcentury.org.*

SUPPLEMENTARY INFORMATION: In accordance with section 9(a)(2) of the Federal Advisory Committee Act (5 U.S.C. Appendix 1–16), the purpose of the Committee is to provide advice to the Secretary of the Interior, through the Director of the National Park Service, on the development of a reuse plan and on matters relating to future uses of certain buildings at Fort Hancock within Gateway National Recreation Area.

The meeting is open to the public. Interested members of the public may present, either orally or through written comments, information for the Committee to consider during the public meeting. Attendees and those wishing to provide comment are strongly encouraged to preregister through the contact information provided. The public will be able to comment at the October and December 2014 meetings beginning at 1:00 p.m. Written comments will be accepted prior to, during, or after the meeting. Due to time constraints during the meeting, the Committee is not able to read written public comments submitted into the record. Individuals or groups requesting to make oral comments at the public committee meeting will be limited to no more than 5 minutes per speaker. At the discretion of the Committee and only with the approval of the speaker, members may ask questions or clarify issues by sharing relevant information.

Before including your address, telephone number, email address, or

other personal indentifying information in your written comments, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All comments will be made part of the public record and will be electronically distributed to all Committee members.

Date: September 3, 2014.

Alma Ripps,

Chief, Office of Policy.

[FR Doc. 2014–21556 Filed 9–9–14; 8:45 am]

BILLING CODE 4310–EE–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16418; PPWOCRADN0–PCU00RP14.R50000]

Notice of Intent To Repatriate Cultural Items: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, has determined that the cultural items listed in this notice meet the definition of unassociated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request to the Arizona State Museum. If no additional claimants come forward, transfer of control of the cultural items to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items under the control of Arizona State Museum, University of Arizona, Tucson, AZ, that meet the definition of unassociated funerary objects under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American cultural items. The National Park Service is not responsible for the determinations in this notice.

History and Description of the Cultural Items

In 1949, four cultural items were removed from San Agustìn de Tucson, AZ BB:13:6(ASM), in Tucson, Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona under the direction of Terah L Smiley. At the end of excavations, the archeological collections were brought the Arizona State Museum (ASM) and assigned accession numbers. The four unassociated funerary objects are four lots of glass beads.

Site AZ BB:13:6(ASM) is a multicomponent habitation and agricultural site. In the 1690s, Father Eusebio Kino traveled through southern Arizona and reported the presence of a Piman village on the west bank of the Santa Cruz River near Sentinel Peak. He named this village San Cosme de Tucson after Chuk-son, the Piman name for the village. By the early years of the 18th century, a visita was established at San Cosme as an extension of the mission of San Xavier Del Bac, located a few miles to the south. Priests from San Xavier would come to the visita occasionally to conduct baptisms and other rites for the village inhabitants. Beginning in the early 1770's construction began on more permanent facilities. The mission complex, renamed San Agustìn, eventually included a chapel, a two-story convent building, an orchard, a granary, and a cemetery for the Native American population. The mission was in use until the middle of the 19th century. Historical records indicate that Sections A and B of the cemetery were used for the internment of baptized Native Americans who were the inhabitants of the O'odham village. The O'odham people today are comprised of the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona, Gila River Indian Community of the Gila River Indian Reservation, Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona, and Tohono O'odham Nation of Arizona.

Determinations Made by the Arizona State Museum

Officials of the ASM have determined that:

- Pursuant to 25 U.S.C. 3001(3)(B), the 4 cultural items described above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of a Native American individual.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the unassociated funerary objects and the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional claimants have come forward, transfer of control of the unassociated funerary objects to the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona may proceed.

The Arizona State Museum is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and Tohono O'odham Nation of Arizona that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21488 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16416; PPWOCRADN0–PCU00RP14.R50000]

Notice of Intent To Repatriate Cultural Items: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, has determined that the cultural items listed in this notice meet the definition of unassociated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request to the Arizona State Museum. If no additional claimants come forward, transfer of control of the cultural items to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items under the control of Arizona State Museum, University of Arizona, Tucson, AZ, that meet the definition of unassociated funerary objects under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American cultural items. The National Park Service is not responsible for the determinations in this notice.

History and Description of the Cultural Items

In 1968 and 1969, two cultural items were removed from a private residence from an unrecorded site, AZ AA:12:—Tucson Site 14, at a privately-owned trailer park in Pima County, AZ. The legally authorized excavations were conducted by the Arizona State Museum (ASM) under the direction of James Ayres and Walter Birkby. The archeological collections were brought to ASM and accessioned. The two unassociated funerary objects are one bone bead and one clay fragment. The human remains once associated with these objects are missing. Field notes mention the presence of sherds that were not collected. On this basis, the objects are likely dated to the period A.D. 200–1500, which encompasses the Hohokam sequence.

In the years 1936 through 1938, 1,459 cultural items were removed from the Hodges Site AZ AA:12:18(ASM), in Tucson, Pima County, AZ. The legally authorized excavations were conducted by the Gila Pueblo Archaeological Foundation under the direction of Carl Miller and Isabel Kelly. At the end of the excavations, the collections were brought to the Gila Pueblo Archeological Foundation in Globe, AZ. In 1944, the archeological collections were transferred to ASM. The 1,459 unassociated funerary objects are 5 animal bones, 7 bone artifacts, 3 bone awls, 1 bone awl fragment, 126 ceramic bowls, 121 ceramic bowl fragments, 1 ceramic canteen, 3 ceramic censers, 4 ceramic disks, 2 ceramic figurines, 18 ceramic figurine fragments, 105 ceramic jars, 59 ceramic jar fragments, 8 ceramic plates, 3 ceramic plate fragments, 28 ceramic scoops, 645 ceramic sherds, 2 ceramic sherd artifacts, 7 ceramic vessels, 1 chipped stone debris fragment, 3 chipped stone knives, 1 chipped stone scraper, 1 clay fragment, 3 grinding stones, 2 hammer stones, 1 handstone, 1 mineral lot, 3 polishing stones, 12 shells, 2 shell artifacts, 24 lots of shell beads, 2 shell bracelets, 21 shell bracelet fragments, 3 shell fragments, 8 shell pendants, 6 shell pendant fragments, 1 shell ring, 15 stone artifacts, 1 stone axe, 4 lots of stone beads, 24 stone bowls, 13 stone bowl fragments, 3 stone concretions, 1 stone cylinder, 3 stone disks, 27 stone palettes, 8 stone palette fragments, 3 stone palette preforms, 3 stone pendants, 47 stone projectile points, 2 turquoise beads, 1 turquoise fragment, 1 turquoise pendant, 59 turquoise tesserae, and 1 worked ceramic sherd. Hodges Ruin was a large Hohokam village that was occupied from the Hohokam Tortolita to Tanque Verde phases (A.D. 350–1300), based on ceramic typologies.

In 1969 and in 1988–1989, 225 cultural objects were removed from Rabid Ruin AZ AA:12:46(ASM), Pima County, AZ. The legally authorized excavations in 1969 were conducted by ASM under the direction of Laurens Hammack. The legally authorized excavations in 1988–1989 were conducted by Culture and Environmental Systems under the direction of Laurie Slawson. The later excavations were the more extensive of the two projects and were undertaken to mitigate impacts prior to the placement of sewer and water lines through the site. Following completion of each excavation, the archeological collections were brought to ASM and assigned an accession number. The 225 unassociated funerary objects are 2 lots of botanical material, 1 ceramic bowl, 1 ceramic jar fragment, 1 ceramic pitcher, 201 ceramic sherds, 5 chipped stones, 2 shells, 1 lot of shell and stone beads, 3 lots of shell beads, 1 lot of stone beads, 1 stone cylinder, 4 stone projectile points, 1 lot of textile fragments, and 1 turquoise pendant. The Rabid Ruin site was a Hohokam multi-component village and is located on the west bank of the Santa Cruz River on the grounds of the Pima County Animal Control Center (formerly the Rabies Control Center). Based on artifact and ceramic typologies, the site was occupied during the Archaic period through the prehistoric historic transition, (8000 B.C.–A.D. 1500/1700). The principal component was a cemetery with a large number of primary and secondary cremations, dating to the Hohokam Classic period (A.D. 1150–1450), and the cultural items are primarily from this period.

In 1979–1983 and in 1987–1988, 301 cultural items were removed from Los Morteros AZ AA:12:57(ASM), in Pima County, AZ. The legally authorized excavations were conducted in 1979–1983 by ASM under the direction of Richard Lange and William Deaver, and in a separate project in 1987–1988 by the Center for Desert Archaeology under the direction of Mary Bernard-Shaw. Following completion of each excavation, the archeological collections were brought to ASM and assigned an accession number. The 301 unassociated funerary objects are 5 animal bones, 1 ceramic bowl, 1 ceramic jar, 284 ceramic sherds, 1 ceramic

vessel, 2 chipped stones, 6 pollen samples, and 1 soil sample. Los Morteros is a large, multi-component village site and the center of an extended community of related sites bordering the Santa Cruz River. The site contained a large ball court, a fortified hillside village, large mounds, stone house foundations, an adobe-walled compound enclosure, and acres of artifact scatter. Occupation at the site began during the Late Archaic/Early Agricultural period, but the most intensive period of occupation was during the Tanque Verde phase of the Hohokam Classic period, from about A.D. 1150 to 1300. Based on the associated funerary object typologies, most of the cultural items likely come from this latter period.

In 1927, five cultural items were removed from the Huntington Site, AZ AA:12:73(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the avocational archeologist Harvey Murdock as part of a seminar in Southwest archeology. The archeological collections were kept by Murdock as a part of his personal collection. In 1969, Murdock's personal collection was donated to the Museum of the Rockies in Idaho. In 1993, Museum of the Rockies transferred the Murdock collection to ASM. The five unassociated funerary objects are four ceramic bowls and one ceramic jar. The Huntington site was a prehistoric settlement and dates to the Early to Middle Rincon phases of the Hohokam cultural sequence (A.D. 950–1150), based on ceramic typologies as well as archaeomagnetic and radiocarbon dating and local stratigraphy. The cultural items appear to be associated with this period.

In 1987, one cultural item was removed from the Lonetree site, AZ AA:12:120(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the Center for Desert Archaeology under the direction of Mary Bernard-Shaw for the American Continental Corporation. Archeological collections were brought to ASM at the conclusion of the excavations and were assigned an accession number. The one unassociated funerary object is a bone awl. The Lonetree Site was identified as a multicomponent site occupied during the Hohokam Pioneer period, A.D. 550–650, the Hohokam Sedentary period, A.D. 940–1150, and during the historical period. The human burials were associated with the prehistoric components of the site.

In the years 1981 to 1987, 64 cultural items were removed from the Redtail Village site, AZ AA:12:149(ASM), in Tucson, Pima County, AZ. The legally authorized test excavations were conducted by Arizona Archeological and Historical Society (AAHS) under the direction of W.D. Hohmann in 1981. A second phase of excavations was conducted in 1983–1987 by the Center for Desert Archaeology under the direction of Mary Bernard-Shaw. In 1995, the collections from the Arizona Archaeological and Historical Society excavations were loaned to ASM for a NAGPRA inventory and were later assigned an accession number. Archeological collections from the Center for Desert Archaeology excavations were brought to the museum at a later date and assigned a separate accession number. The 64 unassociated funerary objects are 16 animal bones, 42 ceramic sherds, 5 chipped stones, and 1 ground stone. The Redtail Village site is a large multi-component site including a cemetery and plaza with multiple burials. While there is evidence at the site of earlier and later occupations, Redtail Village was occupied for the greater part of the Hohokam Colonial period, and was most intensively occupied between A.D. 750–850, based on ceramic typologies.

In 1985, 20 cultural items were removed from the Dairy Site AZ, AA:12:285(ASM), in Pima County, AZ. The legally authorized excavations were conducted by ASM under the direction of John Madsen. The collections were brought to the museum at the end of the field season but no accession number was assigned. The 20 unassociated funerary objects are 3 ceramic sherds, 1 chipped stone, and 16 flotation samples. The Dairy Site is a multi-component site, including Late Archaic through Historical period occupations (2000 B.C.–A.D. 1950). However, the majority of the occupation is associated with the Late Archaic through Early Ceramic component (2000 B.C.–A.D. 650) and the cultural items listed here are likely from this time period.

In 1984, two cultural items were removed from the West Branch Site AZ AA:16:3(ASM), Pima County, AZ. The legally authorized excavations were conducted by the Institute for American Research under the direction of William H. Doelle and Frederick W. Huntington for the Pima County Department of Transportation. After the completion of excavations, the archeological collections were brought to the museum and accessioned. The two unassociated funerary objects are one ceramic scoop and one flotation sample. The West Branch site was a large prehistoric settlement area and has Middle Archaic (4800 B.C.–1500 B.C.), Late Archaic (1500 B.C.–A.D. 200), and Hohokam Pre-Classic Period (A.D. 450–1100) components. The cultural items found likely date to when the site was most intensively occupied during the Hohokam Pre-Classic Period (A.D. 450–1100), based on the ceramic typologies.

Prehistoric settlements in the Tucson Basin of southern Arizona are characterized by archeologists as belonging to two distinctive and consecutive cultural traditions beginning with the Late Archaic/Early Agricultural period and concluding with the Hohokam period. Recent archeological investigations have added support to the hypothesis that the Hohokam tradition arose from the earlier horizon, based on continuities in settlement pattern, architectural technologies, irrigation technologies, subsistence patterns, and material culture. It has been difficult for archeologists to date the beginning of the Hohokam period because the appearance of its distinctive cultural traits, including ceramic technologies and mortuary patterns was a gradual process spanning several hundred years. This adds further support to the hypothesis that the Hohokam tradition evolved in place from earlier Late Archaic traditions. Linguistic evidence furthermore suggests that the Hohokam tradition was multiethnic in nature.

Cultural continuity between these prehistoric occupants of the Tucson Basin and present day O'odham peoples is supported by continuities in settlement pattern, architectural technologies, basketry, textiles, ceramic technology, and ritual practices. Oral traditions that are documented for the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation, Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and the Tohono O'odham Nation of Arizona support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in southern Arizona.

Oral traditions that are documented for the Hopi Tribe also support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in the region. Several Hopi clans and religious societies are derived from ancestors who migrated from the south and likely identified with the Hohokam tradition.

Oral traditions of medicine societies and kiva groups of the Zuni Tribe recount migration from distant portions of the Southwest to present day Zuni and supports affiliation with Hohokam and Late Archaic traditions. Historical linguistic analysis also suggests interaction between ancestral Zuni and

Uto-Aztecan speakers during the late Hohokam period.

Determinations Made by the Arizona State Museum

Officials of ASM have determined that:

• Pursuant to 25 U.S.C. 3001(3)(B), the 2,079 cultural items described above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of a Native American individual.

• Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the unassociated funerary objects and the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional claimants have come forward, transfer of control of the unassociated funerary objects to the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico may proceed.

The Arizona State Museum is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico, that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21471 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16304; PPWOCRADN0–PCU00RP14.R50000]

Notice of Intent To Repatriate Cultural Items: U.S. Department of Defense, Army, Fort Sill National Historic Landmark and Museum, Fort Sill, OK

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Fort Sill National Historic Landmark and Museum, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, has determined that the cultural items listed in this notice meet the definition of unassociated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request to the Fort Sill National Historic Landmark and Museum. If no additional claimants come forward, transfer of control of the cultural items to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to the Fort Sill National Historic Landmark and Museum at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email *scott.a.neel2.civ@mail.mil.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items under the control of the Fort Sill National Historic Landmark and Museum that meet the definition of unassociated funerary objects under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American cultural items. The National Park Service is not responsible for the determinations in this notice.

History and Description of the Cultural Items

In 1966, 29 cultural items were removed from the gravesite of Spotted Wolf who was interred near Canton, OK. The remains of Spotted Wolf were exhumed and moved to Chief's Knoll at the Fort Sill Post Cemetery, but the cultural items were not reinterred with the human remains. It is unknown when the cultural items were given to the Fort Sill National Historic Landmark and Museum. Spotted Wolf died in 1897, and is identified as Southern Arapaho on his gravestone at the Fort Sill Post Cemetery and as Arapaho in Fort Sill records. The 29 unassociated funerary objects are 12 pieces of red ochre, 2 rings, 1 metal cane handle, 1 belt buckle, 1 box, 9 metal disks, 1 metal button, 1 ceramic dog figurine, and 1 ceramic figurine.

Determinations Made by the Fort Sill National Historic Landmark and Museum

Officials of the Fort Sill National Historic Landmark and Museum have determined that:

• Pursuant to 25 U.S.C. 3001(3)(B), the 29 cultural items described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of a Native American individual.

• Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the unassociated funerary objects and the Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma).

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email

scott.a.neel2.civ@mail.mil, by October 10, 2014. After that date, if no additional claimants have come forward, transfer of control of the unassociated funerary objects to the Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma) may proceed.

The Fort Sill National Historic Landmark and Museum is responsible for notifying the Cheyenne and Arapaho Tribes, Oklahoma (previously listed as Cheyenne-Arapaho Tribes of Oklahoma) that this notice has been published.

Dated: July 17, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21489 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16417; PPWOCRADN0–PCU00RP14.R50000]

Notice of Intent To Repatriate Cultural Items: Arizona State Museum, University of Arizona, Tucson, AZ

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Arizona State Museum, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, has determined that the cultural items listed in this notice meet the definition of unassociated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request to the Arizona State Museum. If no additional claimants come forward, transfer of control of the cultural items to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to the Arizona State Museum at the address in this notice by October 10, 2014.

ADDRESSES: John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items under the control of Arizona State Museum, University of Arizona, Tucson, AZ, that meet the definition of unassociated funerary objects under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American cultural items. The National Park Service is not responsible for the determinations in this notice.

History and Description of the Cultural Items

In 1976–1978, 68 cultural items were removed from the Hardy Site, AZ BB:9:14(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona and Arizona State Museum (ASM) under the direction of Linda Gregonis and Karl Reinhard as part of a field school. At the end of excavations, the archeological collections were brought to ASM and assigned an accession number. The 68 unassociated funerary objects are 1 ceramic bowl, 1 ceramic jar, 58 ceramic sherds, 1chipped stone fragment, 1 chipped stone knife, 1 shell artifact, 1 shell artifact fragment, 1 shell bracelet fragment, 1 shell disk, and 2 stone projectile points. The Hardy Site is a multi-component site with occupations in the historical period associated with Fort Lowell, as well as prehistoric components from the Early Ceramic and Hohokam cultural periods. Based on ceramic typologies, the cultural items likely date to a major occupation during the Canada del Oro phase of the Hohokam Colonial Period (A.D. 750–900).

In 1931–1940, 29 cultural items were removed from University Indian Ruin, AZ BB:9:33 (ASM), in Pima County, AZ. Legally authorized excavations in the years 1931 to 1939 were conducted by the University of Arizona and ASM under the direction Byron Cummings and Emil Haury. In a separate project in 1940, legally authorized excavations were conducted by the Civilian Conservation Corps under the direction of Julian D. Hayden. At the end of each excavation, the archeological collections were brought to ASM and assigned accession numbers. The 29 unassociated funerary objects are 2 bone artifacts, 2 bone awls, 2 ceramic bowls, 3 ceramic bowl fragments, 1 ceramic disk, 5 ceramic jars, 3 ceramic jar fragments, 5 crystals, 4 stones, 1 stone artifact, and 1 stone pendant. The University Indian Ruin site consists of surface remains, sub-surface dwellings, a platform mound, possible smaller mounds, and adobe room blocks. Temporally diagnostic ceramics recovered from the site indicate that it was occupied during the Tanque Verde and Tucson phases of the Hohokam Classic period (A.D. 1100–1450).

In 1968–1969, 169 cultural items were removed from Whiptail Ruin, BB:10:3(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the Arizona Archaeological and Historical Society, the University of Arizona, and Pima Community College under the direction of Linda Gregonis, Gayle Hartmann, and Sharon Urban. At the end of excavations, the archeological collections were brought to ASM and assigned accession numbers. The 169 unassociated funerary objects are 127 ceramic sherds and 42 chipped stones. Whiptail Ruin is a multi-component village site with Late Archaic (1500 B.C.–A.D. 200), Hohokam (A.D. 500–1300), and historical components (A.D. 1800–1950). The cultural items come from Hohokam period features that date to the Hohokam Classic period from A.D. 1200–1300.

In 1982–1983, 2 cultural items were removed from the Rincon Community at Valencia Site, AZ BB:13:74(ASM), in Pima County, AZ. The legally authorized excavations were conducted by Complete Archaeological Services Associates under the direction of Bruce A. Bradley for the City of Tucson. At the end of the excavations, the archeological collections were brought to ASM and assigned an accession number. The 2 unassociated funerary objects are 1 ceramic pendant and 1 ceramic vessel. The Rincon Community at Valencia Site is a multicomponent site with several Late Archaic and Hohokam pithouses. Based on ceramic typologies, the cultural items date to the Hohokam Classic Period during the Tanque Verde phase (A.D. 1150–1300).

In 1927, 2 cultural items were removed from the Tanque Verde Ruin site, AZ BB:14:1(ASM), in Pima County, AZ. The legally authorized excavations were conducted by the University of Arizona under the direction of Edward John Hands. At the end of the excavations, the archeological collections were brought ASM and assigned an accession number. The 2 unassociated funerary objects are 1 ceramic jar and 1 stone pendant. Tanque Verde Ruin was a Hohokam pit house village on a flat-topped ridge and is

located in the Rincon Valley of the Tucson Basin. Based on ceramic typologies of the associated funerary vessels, these cultural items likely date to the Hohokam Classic period during the Tanque Verde phase (A.D. 1150–1300).

In 1960, 2 cultural items were removed from the 49ers Country Club Sewer Line site, AZ BB:14:17(ASM), in Pima County, AZ. Construction of a sewer line resulted in the inadvertent discovery of human cremation burials. The construction workers removed vessels associated with the burials, but did not retain the human remains. In 1964, the workers donated two of the items to ASM. The 2 unassociated funerary objects are 2 ceramic jars. AZ BB:14:17(ASM) is a multi-component site with a long history of human occupation from the Late Archaic period through historical times. Based on the ceramic typology, the cultural items likely belong to the Hohokam cultural period (A.D. 500–1450).

In 1965, 2 cultural items were removed from the Fenster Ranch School site, AZ BB:14:24(ASM), in Pima County, AZ. The excavations were conducted by Jack L. Zahniser and the Fenster Ranch School students on private land with the permission of the owner. Several cremations and inhumations were discovered, but there is no record of the human remains being collected. The archeological collections were donated to ASM in 1965. The 2 unassociated funerary objects are 2 ceramic jars. The Fenster Ranch School site is a large village complex that includes slab-lined pithouses, dense midden deposits, and bedrock mortars. Based on ceramic typologies, the site was primarily occupied during the Hohokam Classic period (A.D. 1150–1450).

Prehistoric settlements in the Tucson Basin of southern Arizona are characterized by archeologists as belonging to two distinctive and consecutive cultural traditions beginning with the Late Archaic/Early Agricultural period and concluding with the Hohokam period. Recent archeological investigations have added support to the hypothesis that the Hohokam tradition arose from the earlier horizon, based on continuities in settlement pattern, architectural technologies, irrigation technologies, subsistence patterns, and material culture. It has been difficult for archeologists to date the beginning of the Hohokam period because the appearance of its distinctive cultural traits, including ceramic technologies and mortuary patterns was a gradual process spanning several hundred years. This adds further support to the hypothesis that the Hohokam tradition evolved in place from earlier Late Archaic traditions. Linguistic evidence furthermore suggests that the Hohokam tradition was multiethnic in nature.

Cultural continuity between these prehistoric occupants of the Tucson Basin and present day O'odham peoples is supported by continuities in settlement pattern, architectural technologies, basketry, textiles, ceramic technology, and ritual practices. Oral traditions that are documented for the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation, Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; and the Tohono O'odham Nation of Arizona support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in southern Arizona.

Oral traditions that are documented for the Hopi Tribe also support cultural affiliation with Late Archaic/Early Agricultural period and Hohokam sites in the region. Several Hopi clans and religious societies are derived from ancestors who migrated from the south and likely identified with the Hohokam tradition.

Oral traditions of medicine societies and kiva groups of the Zuni Tribe recount migration from distant portions of the Southwest to present day Zuni and supports affiliation with Hohokam and Late Archaic traditions. Historical linguistic analysis also suggests interaction between ancestral Zuni and Uto-Aztecan speakers during the late Hohokam period.

Determinations Made by the Arizona State Museum

Officials of the ASM have determined that:

- Pursuant to 25 U.S.C. 3001(3)(B), the 274 cultural items described above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of a Native American individual.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the unassociated funerary objects and the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to John McClelland, NAGPRA Coordinator, P.O. Box 210026, Arizona State Museum, University of Arizona, Tucson, AZ 85721, telephone (520) 626–2950, by October 10, 2014. After that date, if no additional claimants have come forward, transfer of control of the unassociated funerary objects to the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico, may proceed.

The Arizona State Museum is responsible for notifying the Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona; Gila River Indian Community of the Gila River Indian Reservation; Hopi Tribe of Arizona; Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona; Tohono O'odham Nation of Arizona; and Zuni Tribe of the Zuni Reservation, New Mexico, that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21490 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16431; PPWOCRADN0–PCU00RP14.R50000]

Notice of Intent To Repatriate Cultural Items: California State University, Long Beach, and California State University, Sacramento, CA

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: California State University, Sacramento and California State University, Long Beach, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, have determined that the cultural items listed

in this notice meet the definition of unassociated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request to the California State University, Sacramento. If no additional claimants come forward, transfer of control of the cultural items to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to the California State University, Sacramento at the address in this notice by October 10, 2014.

ADDRESSES: Orn Bodvarsson, Dean of the College of Social Sciences and Interdisciplinary Studies, CSUS, 6000 J Street, Sacramento, CA 95819–6109, telephone (916) 278–4864, email *obbodvarsson@csus.edu.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items under the control of the California State University, Long Beach, and in the physical custody of California State University, Sacramento, that meet the definition of unassociated funerary objects under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American cultural items. The National Park Service is not responsible for the determinations in this notice.

History and Description of the Cultural Item(s)

In 1967, 199 cultural items were removed from 4–SJo-17 in San Joaquin County, CA, during a salvage excavation project on private property. Faculty and students from what was then Long Beach State College (now California State University, Long Beach) and local volunteers conducted the excavations. The unassociated funerary objects included in this notice were transferred to California State University, Sacramento, from California State University, Long Beach, via California State University, Fresno, during the 1990s. The 199 unassociated funerary objects are 22 baked clay fragments, 1 piece of daub, 114 non-human bone fragments, 3 worked bones, 20 flaked stones, 13 modified stones, 11 unmodified stones, 1 manuport, 2 pieces of charcoal, 2 shell beads, and 10 pieces of modified shell.

Based on burial patterns and artifact types, the unassociated funerary objects are dated to the Middle Horizon (2,500–2,000 B.P.). The establishment of a cultural chronology of the 4–SJo–17 collection relied upon the California Prehistoric Cultural Chronology and Artifact Classification System used by most regional archeologists. Multiple lines of evidence were used to determine the antiquity of this collection. Geographic, linguistic, archeological, and ethnographic evidence, as well as oral historical evidence presented at consultation, were used to determine cultural affiliation to the Eastern Miwok and Central Valley Yokuts peoples. The Eastern Miwok and Yokuts cultures of the Late Horizon (from 1,500 years ago to the European contact) are believed to have descended from the Middle Horizon cultures represented at this site, which lies on the border of the traditional territory of the Eastern Miwok and the Northern Valley Yokuts.

Determinations Made by the California State University, Sacramento, and California State University, Long Beach

Officials of California State University, Sacramento, and California State University, Long Beach, have determined that:

- Pursuant to 25 U.S.C. 3001(3)(B), the 199 cultural items described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of a Native American individual.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the unassociated funerary objects and the Buena Vista Rancheria of Me-wuk Indians of California; California Valley Miwok Tribe, California; Chicken Ranch Rancheria of Me-Wuk Indians of California; Ione Band of Miwok Indians of California; Jackson Rancheria of Me-Wuk Indians of California; Picayune Rancheria of the Chukchansi Indians of California; Santa Rosa Indian Community of the Santa Rosa Rancheria, California; Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California; Table Mountain Rancheria of California; Tule River Indian Tribe of the Tule River Reservation, California; and Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to Orn Bodvarsson, Dean of the College of Social Sciences and Interdisciplinary Studies, CSUS, 6000 J Street, Sacramento, California, 95819–6109; telephone: (916) 278–4864, email: *obbodvarsson@csus.edu,* by October 10, 2014. After that date, if no additional claimants have come forward, transfer of control of the unassociated funerary objects to the Buena Vista Rancheria of Me-wuk Indians of California; California Valley Miwok Tribe, California; Chicken Ranch Rancheria of Me-Wuk Indians of California; Ione Band of Miwok Indians of California; Jackson Rancheria of Me-Wuk Indians of California; Picayune Rancheria of the Chukchansi Indians of California; Santa Rosa Indian Community of the Santa Rosa Rancheria, California; Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California; Table Mountain Rancheria of California; Tule River Indian Tribe of the Tule River Reservation, California; and Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California may proceed.

California State University, Sacramento is responsible for notifying the Buena Vista Rancheria of Me-wuk Indians of California; California Valley Miwok Tribe, California; Chicken Ranch Rancheria of Me-Wuk Indians of California; Ione Band of Miwok Indians of California; Jackson Rancheria of Me-Wuk Indians of California; Picayune Rancheria of the Chukchansi Indians of California; Santa Rosa Indian Community of the Santa Rosa Rancheria, California; Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California; Table Mountain Rancheria of California; Tule River Indian Tribe of the Tule River Reservation, California; and Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California that this notice has been published.

Dated: August 3, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21477 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16410; PPWOCRADN0–PCU00RP14.R50000]

Notice of Intent To Repatriate Cultural Items: Stephen F. Austin State University, Nacogdoches, TX

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Stephen F. Austin State University, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, has determined that the cultural items listed in this notice meet the definition of unassociated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request to the Stephen F. Austin State University. If no additional claimants come forward, transfer of control of the cultural items to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to the Stephen F. Austin State University at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Jerry Williams, Stephen F. Austin State University, P.O. Box 13047, SFA Station, Nacogdoches, TX 75962, telephone (936) 468–2306.

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items under the control of the Stephen F. Austin University, Nacogdoches, TX, that meet the definition of unassociated funerary objects under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American cultural items. The National Park Service is not responsible for the determinations in this notice.

History and Description of the Cultural Item(s)

The Robert L. Turner Jr. Collection contains unassociated funerary objects from twelve sites, all of which are from the Big Cypress Creek Basin except for the Cherokee County site, which is located in the Neches-Angelina River Basin. In 2012, Robert L. Turner Jr. donated unassociated funerary objects to the Stephen F. Austin University (SFA) Archaeological Laboratory. All of the items in this collection came from burial sites, in many cases numbered burials. The human remains from these burials are not present in the collection.

In the late 1920s to early 1940s, 6 cultural items (Perttula et al. 2010a) were removed from the G.W. Rumsey site (41CP3) in Camp County, TX. The 6 unassociated funerary objects are three Ripley Engraved bowls, an incised jar, a plain carinated bowl, and an appliquéd-punctated jar.

Between 1963 and 1967, 399 cultural items (Turner 1978:1) were removed from the Tuck Carpenter site (41CP5) in Camp County, TX. The 399 unassociated funerary objects are 81 vessels, 88 lithics, 2 pipes, 50 shell fragments, 15 animal bones, and 163 miscellaneous sherds.

Between 1963 and 1967, 43 cultural items (Turner 1978:1) were removed from the Tuck Carpenter A site (41CP5), also known as the Wilkison site in Camp County, TX. The 43 unassociated funerary objects are 4 lithics, 6 animal bones, 31 miscellaneous sherds, and 2 other objects.

In 1959, 532 cultural items (Perttula et al. 2010a) were removed from the Harold Williams site (41CP10) in Camp County, TX. The 532 unassociated funerary objects are 18 vessels, 1 lithic, 1 pipe, and 512 miscellaneous sherds.

Between 1966 and 1984, 252 cultural items (Perttula 2010b) were removed from the Johns site (41CP12) in Camp County, TX. The 252 unassociated funerary objects are 62 vessels, 76 lithics, 2 animal bones, 111 miscellaneous sherds, and 1 other object.

In 1958, 8 cultural items (Perttula et al. 2010a:10) were removed from the Graydon Adkins site #2 (41UR17) in Upshur County, TX. The 8 unassociated funerary objects are two bowls, one bottle, one plain carinated bowl, one engraved bowl, one engraved bottle, one punctuated jar, and one plain bowl.

In 1958, 260 cultural items (Perttula et al. 2010a:8) were removed from the B.J. Horton site (41CP20) in Camp County, TX. The 260 unassociated funerary objects are 45 vessels, 53 lithics, and 162 miscellaneous sherds.

Before 1978 (Perttula et al. 2010a:9) 114 cultural items were removed from the Cecil Guest site (41CP78) in Camp County, Texas. The 114 unassociated funerary objects are 19 vessels, 4 lithics, and 91 miscellaneous sherds.

In 1986, 28 cultural items (Perttula et al. 2010a:9) were removed from the Lone Star Lake/Ellison Lake site (41MX65) in Morris County, TX. The 28 unassociated funerary objects are 28 vessels.

In the 1950s, 72 cultural items (Perttula et al. 2010a:9) were removed from the Keith site (41TT11) in Titus County, TX. The 72 unassociated funerary objects are 10 vessels and 62 lithics.

In 1959, 22 cultural items (Perttula et al. 2010a:10) were removed from the Alex Justiss site (41TT13) in Titus County, TX. The 22 unassociated funerary objects are 4 vessels, 17 lithics, and 1 pipe.

In 1958, 3 cultural items (Perttula et al. 2010a:10) were removed from the Graydon Adkins site #1 (41UR21) in Upsur County, TX. The 3 unassociated funerary objects are 3 vessels.

In 1930, 3 cultural items were removed from Cherokee County, TX. According to Robert L. Turner's notes, the vessels from the unknown Cherokee County site originally came from the R.G. Upton Collection. They were found in about 1930 at the ''forks of Bowles and White Oak creeks'' in west central Cherokee County. The 3 unassociated funerary objects are 3 vessels.

Determinations Made by the Stephen F. Austin University

Officials of the Stephen F. Austin University have determined that:

- Pursuant to 25 U.S.C. 3001(3)(B), the 1,742 cultural items described above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of a Native American individual.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the unassociated funerary objects and Caddo Nation of Oklahoma.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to Dr. Jerry Williams, Stephen F. Austin State University, P.O. Box 13047, SFA Station, Nacogdoches, TX 75962, telephone (936) 468–2306, by October 10, 2014. After that date, if no additional claimants have come

forward, transfer of control of the unassociated funerary objects to the Caddo Nation of Oklahoma may proceed.

The Stephen F. Austin University is responsible for notifying the Caddo Nation of Oklahoma that this notice has been published.

Dated: August 1, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21483 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NAGPRA–16303; PPWOCRADN0–PCU00RP14.R50000]

Notice of Intent To Repatriate Cultural Items: U.S. Department of Defense, Army, Fort Sill National Historic Landmark and Museum, Fort Sill, OK

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The Fort Sill National Historic Landmark and Museum, in consultation with the appropriate Indian tribes or Native Hawaiian organizations, has determined that the cultural items listed in this notice meet the definition of unassociated funerary objects. Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request to the Fort Sill National Historic Landmark and Museum. If no additional claimants come forward, transfer of control of the cultural items to the lineal descendants, Indian tribes, or Native Hawaiian organizations stated in this notice may proceed.

DATES: Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to the Fort Sill National Historic Landmark and Museum at the address in this notice by October 10, 2014.

ADDRESSES: Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email *scott.a.neel2.civ@mail.mil.*

SUPPLEMENTARY INFORMATION: Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items under the control of the Fort Sill National Historic Landmark and Museum that meet the definition of unassociated funerary objects under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the Native American cultural items. The National Park Service is not responsible for the determinations in this notice.

History and Description of the Cultural Items

In 1963, 85 cultural items were removed from the gravesite of Stumbling Bear who was interred at the Saddle Mountain KCA Intertribal Cemetery in Kiowa County, OK. The remains of Stumbling Bear were exhumed and moved to Chief's Knoll at the Fort Sill Post Cemetery, but the cultural items were not reinterred with the human remains. It is unknown when the cultural items were given to the Fort Sill National Historic Landmark and Museum. Stumbling Bear was a Kiowa chief who was born in 1830 and died on March 14, 1903. The 85 unassociated funerary objects are 21 wire bracelets, 1 metal disk, 17 metal bells, 19 metal buttons, 4 metal rings, 1 metal chain, 3 plastic beads, 1 plastic button, 17 metal horse trappings, and 1 coffin hardware.

Determinations Made by the Fort Sill National Historic Landmark and Museum

Officials of the Fort Sill National Historic Landmark and Museum have determined that:

- Pursuant to 25 U.S.C. 3001(3)(B), the 85 cultural items described in this notice are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony and are believed, by a preponderance of the evidence, to have been removed from a specific burial site of a Native American individual.
- Pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the unassociated funerary objects and the Kiowa Indian Tribe of Oklahoma.

Additional Requestors and Disposition

Lineal descendants or representatives of any Indian tribe or Native Hawaiian organization not identified in this notice that wish to claim these cultural items should submit a written request with information in support of the claim to Dr. Scott A. Neel, Director, Fort Sill National Historic Landmark and Museum, U.S. Army Fires Center of Excellence, Fort Sill, OK 73503, telephone (580) 442–6570, email *scott.a.neel2.civ@mail.mil,* by October 10, 2014. After that date, if no additional claimants have come forward, transfer of control of the unassociated funerary objects to the Kiowa Indian Tribe of Oklahoma may proceed.

The Fort Sill National Historic Landmark and Museum is responsible for notifying the Kiowa Indian Tribe of Oklahoma that this notice has been published.

Dated: July 17, 2014.

Melanie O'Brien,

Acting Manager, National NAGPRA Program.

[FR Doc. 2014–21492 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–CONC–15093; PPMVSCS1Y.Y00000, PPWOBSADC0]

Sole Source Concession Contract for Gateway National Recreation Area, NY

AGENCY: National Park Service, Interior.

ACTION: Notice of proposed award of sole source concession contract for Gateway National Recreation Area.

SUMMARY: Pursuant to 36 CFR 51.25, public notice is hereby given that the National Park Service proposes to award a sole source concession contract for the conduct of certain visitor services within Gateway National Recreation Area, New York for a term not to exceed 5 years. The visitor services include marina operations and dry storage for boats at Great Kills Marina. This action is necessary to avoid interruption of visitor services.

DATES: The term of the temporary concession contract will commence (if awarded) no earlier than 60 days from the publication of this notice.

FOR FURTHER INFORMATION CONTACT: Jo A. Pendry, Acting Chief, NPS Commercial Services Program, 1201 Eye Street NW., 11th floor, Washington, DC 20005, Telephone (202) 513–7156.

SUPPLEMENTARY INFORMATION: The Director of the National Park Service (NPS) may award a contract non-competitively (''Sole Source'' Contracts) upon a determination that extraordinary circumstances exist under which compelling and equitable considerations

require the award of the contract to a particular qualified person in the public interest (36 CFR 51.25).

The extraordinary circumstance in this instance was precipitated by Superstorm Sandy, which destroyed the water-based portion of the Great Kills Marina in October 2012, washing away the docks, slips, and a substantial number of pilings. The storm also caused severe damage to the bulkhead. The NPS requires the marina structures used under this contract to be temporary in nature, and that the concessioner coordinate closely with the NPS for construction of the temporary marina, a project which is already underway. These factors also contribute to the extraordinary circumstances that allow for a sole source concession contract.

The NPS has determined that Marinas of the Future, Inc., is a ''qualified person'' as defined by 36 CFR 51.3, and has determined that compelling and equitable considerations exist with Marinas of the Future, Inc.'s funding for the construction project, its cooperation in coordinating the project, and its waiver of any potential leasehold surrender interest in the temporary marina.

The NPS has determined that a sole source concession contract is in the public interest because it is the authorization most likely to allow interruption of visitor services to be avoided.

This action is issued pursuant to 36 CFR 51.25. This is not a request for proposals.

Dated: August 28, 2014.

Jonathan B. Jarvis,

Director, National Park Service.

[FR Doc. 2014–21018 Filed 9–9–14; 8:45 am]

BILLING CODE 4312–53–P

DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

[S1D1S SS08011000 SX066A000 67F 134S180110; S2D2S SS08011000 SX066A00 33F 13xs501520]

Notice of Proposed Information Collection

AGENCY: Office of Surface Mining Reclamation and Enforcement, Interior.

ACTION: Notice and request for comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995, the Office of Surface Mining Reclamation and Enforcement (OSM) is announcing its intention to renew the approval for the collection of information which allows the collection and processing of citizen complaints and requests for inspection. The collection described below has been forwarded to the Office of Management and Budget (OMB) for review and approval. The information collection request describes the nature of the information collection and the expected burden and cost.

DATES: OMB has up to 60 days to approve or disapprove the information collection but may respond after 30 days. Therefore, public comments should be submitted to OMB by October 10, 2014, in order to be assured of consideration.

ADDRESSES: Submit comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Department of the Interior Desk Officer, by telefax at (202) 395–5806 or via email to *OIRA_Submission@omb.eop.gov.* Also, please send a copy of your comments to John Trelease, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Ave. NW., Room 203—SIB, Washington, DC 20240, or electronically to *jtrelease@osmre.gov.* Please refer to OMB Control Number 1029–0118 in your correspondence.

FOR FURTHER INFORMATION CONTACT: To receive a copy of the information collection request contact John Trelease at (202) 208–2783, or electronically at *jtrelease@osmre.gov.* You may also review this request by going to *http://www.reginfo.gov* (Information Collection Review, Currently Under Review, Agency is Department of the Interior, DOI–OSMRE).

SUPPLEMENTARY INFORMATION: OMB regulations at 5 CFR part 1320, which implement provisions of the Paperwork Reduction Act of 1995 (Pub. L. 104–13), require that interested members of the public and affected agencies have an opportunity to comment on information collection and recordkeeping activities [see 5 CFR 1320.8(d)]. OSM has submitted a request to OMB to approve the collection of information in 30 CFR part 842—Federal inspections and monitoring. OSM is requesting a 3-year term of approval for this information collection activity.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this collection of information, 1029–0118, has been placed on the electronic citizen complaint form that may be found on OSM's Web site at *http://www.osmre.gov/resources/InformationFor/citizens/InspectionRequest.shtm.*

As required under 5 CFR 1320.8(d), a **Federal Register** notice soliciting comments on this collection of information was published on May 30, 2014 (79 FR 31135). No comments were received. This notice provides the public with an additional 30 days in which to comment on the following information collection activity:

Title: 30 CFR part 842—Federal inspections and monitoring.

OMB Control Number: 1029–0118.

Summary: For purposes of information collection, this part establishes the procedures for any person to notify the Office of Surface Mining in writing of any violation that may exist at a surface coal mining operation. The information will be used to investigate potential violations of the Act or applicable State regulations.

Bureau Form Number: None.

Frequency of Collection: Once.

Description of Respondents: Citizens.

Total Annual Responses: 53.

Total Annual Burden Hours: 40 hours.

Total Annual Non-Wage Cost: $0.

Send comments on the need for the collection of information for the performance of the functions of the agency; the accuracy of the agency's burden estimates; ways to enhance the quality, utility and clarity of the information collection; and ways to minimize the information collection burden on respondents, such as use of automated means of collection of the information, to the addresses listed under **ADDRESSES**. Please refer to the appropriate OMB control number 1029–0118 in your correspondence.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: September 2, 2014.

Harry J. Payne,

Chief, Division of Regulatory Support.

[FR Doc. 2014–21590 Filed 9–9–14; 8:45 am]

BILLING CODE 4310–05–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–909]

Certain Non-Volatile Memory Devices and Products Containing Same Commission Determination Not No Review an Initial Determination Granting an Unopposed Motion to Terminate the Investigation as to Respondent Tellabs, Inc. and for Leave to Amend the Complaint and Notice of Investigation

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined not to review an initial determination (''ID'') (Order No. 15) of the presiding administrative law judge (''ALJ'') granting an unopposed motion (1) to terminate the investigation as to respondent Tellabs, Inc. of Naperville, Illinois and (2) for leave to amend the complaint and notice of investigation to substitute Tellabs Operations, Inc. and Tellabs North America, Inc. both of Naperville, Illinois for Tellabs, Inc.

FOR FURTHER INFORMATION CONTACT: Panyin A. Hughes, Office of the General Counsel, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436, telephone (202) 205–3042. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436, telephone (202) 205–2000. General information concerning the Commission may also be obtained by accessing its Internet server at *http://www.usitc.gov.* The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://edis.usitc.gov.* Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205–1810.

SUPPLEMENTARY INFORMATION: The Commission instituted Inv. No. 337–TA–909 on February 3, 2014, based on a complaint filed by Macronix International Co., Ltd. of Hsin-chu, Taiwan and Macronix America, Inc. of Milpitas, California (collectively, ''Macronix''). 79 FR 6227–228 (Feb. 3, 2014). The complaint alleged violations of section 337 of the Tariff Act of 1930, as amended, (19 U.S.C. 1337) in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain non-volatile memory devices and products containing the same by reason of infringement of various claims of United States Patent Nos. 6,552,360; 6,100,557; and 6,002,630. The notice of investigation named several respondents. The Office of Unfair Import Investigations is a party to the investigation.

On July 25, 2014, Macronix and Tellabs, Inc. moved, unopposed, (1) to terminate the investigation as to Tellabs, Inc. and (2) for leave to amend the complaint and notice of investigation to substitute Tellabs Operations, Inc. and Tellabs North America, Inc. for Tellabs, Inc. The parties stated that the Commission investigative attorney and the other named respondents do not oppose the motion. No responses to the motion were filed.

On August 5, 2014, the ALJ issued the subject ID, granting the unopposed motion. The ALJ found that the motion to terminate Tellabs, Inc. complied with the requirements of Commission Rule 210.21(a) (19 CFR 210.21(a)) and that no extraordinary circumstances prohibited granting the motion. Regarding amending the complaint and notice of investigation, the ALJ found that, pursuant to Commission Rule 210.14(b) (19 CFR 210.14(b)), good cause existed to amend the complaint and notice of investigation. None of the parties petitioned for review of the ID.

The Commission has determined not to review the ID.

The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), and in part 210 of the Commission's Rules of Practice and Procedure (19 CFR part 210).

By order of the Commission

Issued: September 4, 2014.

Lisa R. Barton,

Secretary to the Commission.

[FR Doc. 2014–21485 Filed 9–9–14; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–902]

Certain Windshield Wipers and Components Thereof Termination of Investigation Pursuant to a Settlement Agreement

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined not to review an initial determination (''ID'') (Order No. 24) of the presiding administrative law judge (''ALJ'') granting a joint motion to terminate the above-referenced investigation pursuant to a settlement agreement.

FOR FURTHER INFORMATION CONTACT: Jia Chen, Office of the General Counsel, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436, telephone (202) 708–4737. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436, telephone (202) 205–2000. General information concerning the Commission may also be obtained by accessing its Internet server at *http://www.usitc.gov.* The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://edis.usitc.gov.* Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205–1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on November 26, 2013, based on a complaint filed by Trico Products Corporation (''Trico'') of Rochester Hills, Michigan, alleging violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337, by reason of infringement of certain claims of U.S. Patent Nos. 6,836,925 and 6,799,348. 78 FR 70575 (Nov. 26, 2013). The notice of investigation named the following respondents: Federal Mogul Corporation of Southfield, Michigan; and Federal Mogul S.A. of Aubange, Belgium (collectively, ''Federal Mogul'').

On July 29, 2014, Trico and Federal Mogul filed a joint motion to terminate the investigation in its entirety pursuant to a settlement agreement (''Settlement Agreement''). Public and confidential versions of the Settlement Agreement were attached to the motion. The motion also stated that there are no other agreements, written or oral, express or implied, between the parties concerning the subject matter of this investigation. On August 5, 2014, the Commission investigative attorney filed a response supporting the joint motion.

On August 6, 2014, the ALJ issued the subject ID granting the motion, finding that no extraordinary circumstances exist that would prevent the requested

termination from this investigation and that the motion fully complies with Commission Rule 210.21. The ALJ further found that termination of the investigation is in the public interest pursuant to Commission Rule 210.50(b)(2).

No petitions for review were filed.

The Commission has determined not to review the ID.

The authority for the Commission's determination is contained in Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), and in part 210 of the Commission's Rules of Practice and Procedure (19 CFR part 210).

By order of the Commission.

Issued: September 4, 2014.

Lisa R. Barton,

Secretary to the Commission.

[FR Doc. 2014–21484 Filed 9–9–14; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 332–549]

Rice: Global Competitiveness of the U.S. Industry

AGENCY: United States International Trade Commission.

ACTION: Cancellation of hearing.

SUMMARY: The public hearing in this investigation scheduled for September 10, 2014, has been cancelled. The two interested parties that filed requests to appear at the hearing have withdrawn their requests to appear.

DATES: December 9, 2014: Deadline for filing all written submissions. April 14, 2015: Transmittal of Commission report to the Committee.

ADDRESSES: All Commission offices, including the Commission's hearing rooms, are located in the United States International Trade Commission Building, 500 E Street SW., Washington, DC. All written submissions should be addressed to the Secretary, United States International Trade Commission, 500 E Street SW., Washington, DC 20436. The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://www.usitc.gov/secretary/edis.htm.*

FOR FURTHER INFORMATION CONTACT: Project leader John Giamalva (202–205–3329 or *john.giamalva@usitc.gov*) or deputy project leader Marin Weaver (202–205–3461 or *marin.weaver@usitc.gov*) for information specific to this investigation. For information on the legal aspects of this investigation, contact William Gearhart of the Commission's Office of the General Counsel (202–205–3091 or *william.gearhart@usitc.gov*). The media should contact Margaret O'Laughlin, Office of External Relations (202–205–1819 or *margaret.olaughlin@usitc.gov*). Hearing-impaired individuals may obtain information on this matter by contacting the Commission's TDD terminal at 202–205–1810. General information concerning the Commission may also be obtained by accessing its Internet server (*http://www.usitc.gov*). Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000.

Background: The Commission published notice of institution of the investigation and the scheduling of a public hearing in the **Federal Register** of June 20, 2014 (79 FR 35381). Except for dates and instructions related to the hearing and hearing submissions, all other information in the June 20 notice remains the same, including with respect to the deadline for filing written submissions and the instructions relating to the filing of those submissions. The Commission instituted the investigation on June 17, 2014, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), following receipt on May 15, 2014, of a request from the Committee on Ways and Means of the House of Representatives.

By order of the Commission.

Issued: September 4, 2014.

Lisa R. Barton,

Secretary to the Commission.

[FR Doc. 2014–21422 Filed 9–9–14; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF JUSTICE

Notice of Lodging of Proposed Consent Decree Under the Clean Air Act

On September 3, 2014, the Department of Justice lodged a proposed consent decree with the United States District Court for the Northern District of California in the lawsuit entitled *United States* v. *Costco Wholesale Corporation,* Civil Action No. 3:14-cv-3989.

The United States filed this lawsuit under the Clean Air Act. The United States' complaint seeks injunctive relief and civil penalties for violations of the regulations governing the service and repair of commercial refrigeration appliances that use ozone-depleting refrigerant. The consent decree requires Costco Wholesale Corporation to perform injunctive relief and pay a $335,000 civil penalty.

The publication of this notice opens a period for public comment on the consent decree. Comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and should refer to *United States* v. *Costco Wholesale Corporation,* D.J. Ref. No. 90–5–2–1–09643. All comments must be submitted no later than thirty (30) days after the publication date of this notice. Comments may be submitted either by email or by mail:

To submit comments:	*Send them to:*
By email	*pubcomment-ees.enrd@usdoj.gov.*
By mail	Assistant Attorney General U.S. DOJ—ENRD P.O. Box 7611 Washington, DC 20044–7611.

During the public comment period, the consent decree may be examined and downloaded at this Justice Department Web site: *http://www.usdoj.gov/enrd/Consent_Decrees.html.* We will provide a paper copy of the consent decree upon written request and payment of reproduction costs. Please mail your request and payment to: Consent Decree Library, U.S. DOJ—ENRD, P.O. Box 7611, Washington, DC 20044–7611.

Please enclose a check or money order for $12.75 (25 cents per page reproduction cost) payable to the United States Treasury.

Maureen M. Katz,

Assistant Section Chief, Environmental Enforcement Section, Environment and Natural Resources Division.

[FR Doc. 2014–21441 Filed 9–9–14; 8:45 am]

BILLING CODE 4410–15–P

DEPARTMENT OF LABOR

Advisory Committee on Veterans' Employment, Training and Employer Outreach (ACVETEO): Meeting

AGENCY: Veterans' Employment and Training Service (VETS), Department of Labor.

ACTION: Notice of open meeting.

SUMMARY: This notice sets forth the schedule and proposed agenda of a forthcoming meeting of the ACVETEO. The ACVETEO will discuss the VETS core programs and services regarding efforts that assist veterans seeking

employment and raise employer awareness as to the advantages of hiring veterans. There will be an opportunity for persons or organizations to address the committee. Any individual or organization that wishes to do so should contact Mr. Anthony Camilli at 202–693–4708. Time constraints may limit the number of outside participants/presentations.

Individuals who will need accommodations for a disability in order to attend the meeting (e.g., interpreting services, assistive listening devices, and/or materials in alternative format) should notify the Advisory Committee no later than Thursday, September 25, 2014 by contacting Mr. Gregory Green at 202–693–4734. Requests made after this date will be reviewed, but availability of the requested accommodations cannot be guaranteed. The meeting site is accessible to individuals with disabilities. This Notice also describes the functions of the ACVETEO. Notice of this meeting is required under Section 10(a)(2) of the Federal Advisory Committee Act. This document is intended to notify the general public.

DATE AND TIME: Thursday, October 2, 2014 beginning at 9 a.m. and ending at approximately 5:00 p.m. (E.S.T.).

ADDRESSES: The meeting will take place at the U.S. Department of Labor, Frances Perkins Building, 200 Constitution Avenue NW., Washington, DC 20210, Suite C–5320, Room 6. Members of the public are encouraged to arrive early to allow for security clearance into the Frances Perkins Building.

Security Instructions: Meeting participants should use the visitors' entrance to access the Frances Perkins Building, one block north of Constitution Avenue at 3rd and C Streets NW. For security purposes meeting participants must:

1. Present a valid photo ID to receive a visitor badge.
2. Know the name of the event being attended: The meeting event is the Advisory Committee on Veterans' Employment, Training and Employer Outreach (ACVETEO).
3. Visitor badges are issued by the security officer at the Visitor Entrance located at 3rd and C Streets NW. When receiving a visitor badge, the security officer will retain the visitor's photo ID until the visitor badge is returned to the security desk.
4. Laptops and other electronic devices may be inspected and logged for identification purposes.
5. Due to limited parking options, Metro is the easiest way to access the Frances Perkins Building.

Notice of Intent to Attend the Meeting: All meeting participants are being asked to submit a notice of intent to attend by Thursday, September 25, 2014, via email to Mr. Anthony Camilli at *camilli.anthony@dol.gov,* subject line ''October 2014 ACVETEO Meeting''.

FOR FURTHER INFORMATION CONTACT: Mr. Anthony Camilli, Alternate Designated Federal Official for the ACVETEO, (202) 693–4708.

SUPPLEMENTARY INFORMATION: The ACVETEO is a Congressionally mandated advisory committee authorized under Title 38, U.S. Code, 4110 and subject to the Federal Advisory Committee Act, 5 U.S.C. App. 2, as amended. The ACVETEO is responsible for: Assessing employment and training needs of veterans; determining the extent to which the programs and activities of the U.S. Department of Labor meet these needs; assisting to conduct outreach to employers seeking to hire veterans; making recommendations to the Secretary, through the Assistant Secretary of Labor for VETS, with respect to outreach activities and employment and training needs of Veterans; and carrying out such other activities necessary to make required reports and recommendations. The ACVETEO meets at least quarterly.

Agenda

9:00 a.m. Welcome and remarks, Keith Kelly, Assistant Secretary of Labor for Veterans' Employment and Training
9:05 a.m. Administrative Business, Anthony Camilli, Alternate Designated Federal Official
9:10 a.m. To be determined
9:50 a.m. Break
10:00 a.m. Outreach Subcommittee Briefing and Discussion
10:50 a.m. Break
11:00 a.m. Focused Populations Subcommittee Briefing and Discussion
12:00 p.m. Lunch
1:00 p.m. Transition Subcommittee Briefing and Discussion
1:50 p.m. Break
2:00 p.m. Discussion and work on Fiscal Year 2014 Report, J. Michael Haynie, ACVETEO Chairman
4:45 p.m. Public Forum, Anthony Camilli, Alternate Designated Federal Official
5:00 p.m. Adjourn

Signed in Washington, DC, this 28th day of August, 2014.

Keith Kelly,

Assistant Secretary of Labor for Veterans' Employment and Training.

[FR Doc. 2014–21497 Filed 9–9–14; 8:45 am]

BILLING CODE 4510–79–P

DEPARTMENT OF LABOR

Employment and Training Administration

Comment Request for Information Collection for Planning Guidance and Instructions for Submission of the Strategic State Plan and Plan Modifications for Title I of the Workforce Investment Act and Wagner-Peyser Act, Extension Without Revisions

AGENCY: Employment and Training Administration (ETA), Labor.

ACTION: Notice.

SUMMARY: The Department of Labor (Department), as part of its continuing effort to reduce paperwork and respondent burden, conducts a preclearance consultation program to provide the public and Federal agencies with an opportunity to comment on proposed and/or continuing collections of information in accordance with the Paperwork Reduction Act of 1995 [44 U.S.C. 3506(c)(2)(A)] (PRA). The PRA process helps to ensure that requested data can be provided in the desired format, reporting burden (time and financial resources) is minimized, collection instruments are clearly understood, and the impact of collection requirements on respondents can be properly assessed.

Currently, the Employment and Training Administration (ETA) is soliciting comments concerning the collection of data about the Planning Guidance and Instructions for Submission of the Strategic State Plan for title I of the Workforce Investment Act of 1998 (WIA) and the Wagner-Peyser Act in order to prevent PRA approval from lapsing.

DATES: Submit written comments to the office listed in the addresses section below on or before November 10, 2014.

ADDRESSES: Send written comments to Heather Fleck, Division of WIA Adult Services and Workforce System, Room S–4203, Employment and Training Administration, U.S. Department of Labor, 200 Constitution Avenue NW., Washington, DC 20210. Telephone number: 202–693–2956 (this is not a toll-free number). Individuals with hearing or speech impairments may access the telephone number above via TTY by calling the toll-free Federal Information Relay Service at 1–877–889–5627 (TTY/TDD). Fax: 202–693–3817. Email: *fleck.heather@dol.gov.* To obtain a copy of the proposed information collection request (ICR), please contact the person listed above.

FOR FURTHER INFORMATION CONTACT: Heather Fleck at 202–693–2956, or *fleck.heather@dol.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

The Workforce Investment Act of 1998 (WIA) requires states to submit either a ''standalone'' strategic plan for title I of the Workforce Investment Act of 1998 and the Wagner-Peyser Act (WIA Section 112) or a Unified Plan with partner programs (WIA Section 501). The State may also submit requests for waivers and work-flex as parts of the Strategic State Plan. These State Plan requirements are titled ''State Integrated Workforce Plan Requirements for Workforce Investment Act/Wagner-Peyser Act and Department of Labor Workforce Programs,'' and ''Planning Guidance for State Unified Plans and Unified Plan Modifications Submitted under Section 501 of the Workforce Investment Act (WIA).'' The Planning Guidance and Instructions provide a framework for the collaboration of governors, local elected officials, businesses and other partners to continue the development of workforce investment systems that address customer needs, deliver integrated user-friendly services, and are accountable to the customers and the public.

Sections 102 and 103 of the Workforce Innovation and Opportunity Act (WIOA), (H.R. 803, July 22, 2014) include similar provisions for States to submit State Plans. Many of WIOA's provisions take effect on July 1, 2015, but the existing WIA state and local plan provisions remain in effect until July 1, 2016. The Employment and Training Administration (ETA) is conducting a review of WIOA's implementation timeline and State Plan provisions, and may amend this information collection as part of its implementation actions.

This information collection is submitted under the legal requirements of WIA, the law in effect at this time.

II. Review Focus

The Department is particularly interested in comments which:

- Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- enhance the quality, utility, and clarity of the information to be collected; and
- minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submissions of responses.

III. Current Actions

Type of Review: Extension without revisions.

Title: Planning Guidance and Instructions for Submission of the Strategic State Plan for Title I of the Workforce Investment Act of 1998 (WIA) and the Wagner-Peyser Act.

OMB Number: 1205–0398.

Affected Public: State or local governments.

Estimated Total Annual Respondents: 10.

Estimated Total Annual Responses: 10.

Estimated Total Annual Burden Hours: 400.

Total Estimated Annual Other Costs Burden: There are no other costs.

We will summarize and/or include in the request for OMB approval of the ICR, the comments received in response to this comment request; they will also become a matter of public record.

Portia Wu,

Assistant Secretary for Employment and Training, Labor.

[FR Doc. 2014–21571 Filed 9–9–14; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

Workforce Investment Act; Native American Employment and Training Council

AGENCY: Employment and Training Administration, U.S. Department of Labor.

ACTION: Notice of meeting.

SUMMARY: Pursuant to Section 10 (a)(2) of the Federal Advisory Committee Act (FACA) (Pub. L. 92–463), as amended, and Section 166 (h)(4) of the Workforce Investment Act (WIA) [29 U.S.C. 2911(h)(4)], notice is hereby given of the next meeting of the Native American Employment and Training Council (Council), as constituted under WIA.

DATES: The meeting will begin at 9:00 a.m. (Eastern Standard Time) on Wednesday, November 5, 2014, and continue until 5:00 p.m. that day. The meeting will reconvene at 9:00 a.m. on Thursday, November 6, 2014, and adjourn at 5:00 p.m. that day. The period from 3:30 p.m. to 5:30 p.m. on November 5, 2014, will be reserved for participation and presentations by members of the public.

ADDRESSES: The meeting will be held at the Brown Hotel, 335 West Broadway, Louisville, Kentucky 40202.

SUPPLEMENTARY INFORMATION: The meeting will be open to the public. Members of the public not present may submit a written statement on or before November 3, 2014, to be included in the record of the meeting. Statements are to be submitted to Mr. Craig Lewis, Designated Federal Official (DFO), U.S. Department of Labor, 200 Constitution Avenue NW., Room S–4209, Washington, DC 20210. Persons who need special accommodations should contact Mr. Craig Lewis at (202) 693–3384, at least two business days before the meeting. The formal agenda will focus on the following topics: (1) U.S. Department of Labor, Employment and Training Administration Update; (2) Training and Technical Assistance; (3) Council and Workgroup Updates and Recommendations; (4) New Business and Next Steps; and (5) Public Comment.

FOR FURTHER INFORMATION CONTACT: Mr. Craig Lewis, DFO, Division of Indian and Native American Programs, Employment and Training Administration, U.S. Department of Labor, Room S–4209, 200 Constitution Avenue NW., Washington, DC 20210. Telephone number (202) 693–3384 (VOICE) (this is not a toll-free number).

Signed at Washington, DC, August 2014.

Portia Wu,

Assistant Secretary, Employment and Training Administration.

[FR Doc. 2014–21565 Filed 9–9–14; 8:45 am]

BILLING CODE 4501–FR–P

DEPARTMENT OF LABOR

Bureau of Labor Statistics

Comment Request on the Local Area Unemployment Statistics Program

AGENCY: Bureau of Labor Statistics, Labor.

ACTION: Request for comments on proposed action.

SUMMARY: The Department of Labor, through the Bureau of Labor Statistics (BLS) and, specifically, the Local Area Unemployment Statistics (LAUS)

program, is responsible for the development and publication of State and local area labor force statistics. The LAUS program develops and issues monthly estimates of the labor force, employment, unemployment, and the unemployment rate for approximately 7,300 areas in the Nation. A major program redesign to improve the methodological basis of the LAUS estimates and update the geography and techniques to reflect 2010 Census data was initially funded in FY 2011. After completion of various long-term research projects, the BLS plans to implement improvements to its estimating methods with State and area LAUS estimates for January 2015, to be published in March 2015.

DATES: Written comments must be submitted to the office listed in the **ADDRESSES** section of this notice on or before November 10, 2014.

ADDRESSES: Send comments to Patrick Carey, Local Area Unemployment Statistics, Bureau of Labor Statistics, Room 4675, Massachusetts Avenue NE., Washington, DC 20212 or by email to: *LAUS_FRN@bls.gov.*

FOR FURTHER INFORMATION CONTACT: Walter Sylva, Local Area Unemployment Statistics, Bureau of Labor Statistics, telephone number 202–691–6456 (this is not a toll-free number), or by email to: *LAUS_FRN@bls.gov.*

SUPPLEMENTARY INFORMATION:

I. Introduction

The Department of Labor, through the Bureau of Labor Statistics, is responsible for the development and publication of State and local area labor force statistics through the Local Area Unemployment Statistics (LAUS) program. Currently, monthly estimates of employment, unemployment, and the unemployment rate are prepared for approximately 7,300 areas, including Census regions, Census Divisions, all States and the District of Columbia, Puerto Rico, metropolitan and small labor market areas, counties, cities of 25,000 population or more, and all cities and towns in New England regardless of population. In a multi-year, multi-project initiative that began in FY 2011, the following prospective improvements to State and area labor force estimation were identified:

- Improve State time series estimating models by introducing:
  - Model-Based Benchmarking that accounts for errors in the estimates
  - Additivity of outlier effects that allocates level shifts to the appropriate State
  - More efficient model structure that reduces processing time
  - Enhanced smoothed seasonal adjustment procedures
- Incorporate American Community Survey (ACS) data to replace Census long form data that are no longer available as inputs
- Update procedures for developing other substate areas that employ innovative and dynamic estimating methods

II. Background

A hierarchy of estimation methods is used to produce the State and area labor force estimates, based in large part on the availability and quality of data from the Current Population Survey (CPS), the official measure of the labor force for the Nation. Labor force estimates are generated for the nine Census Divisions utilizing time series models and are controlled to National estimates. State estimates also are developed using time series models and are controlled to Division estimates. Finally, substate estimates are developed by means of a building-block approach using locally available data and are controlled to State estimates.

Improved Time Series Models. The estimates for States, the District of Columbia, New York City and the Los Angeles Metropolitan Division, and their respective balances of New York State and California are developed using signal-plus-noise models. These models rely heavily on monthly CPS data as well as current wage and salary employment estimates from the Current Employment Statistics (CES) program and claims data from State unemployment insurance (UI) programs.

There are signal-plus-noise models for five additional substate areas and their respective balances of State. The areas are: The Chicago-Naperville-Joliet, IL metropolitan division; the Cleveland-Elyria-Mentor, OH metropolitan area; the Detroit-Warren-Livonia, MI metropolitan area; the Miami-Miami Beach-Kendall, FL metropolitan division; and the Seattle-Bellevue-Everett, WA metropolitan division. As with the State and Census Division models, these area models are based on the classical decomposition of a time series into trend, seasonal, and irregular components. A component to identify and remove CPS sampling error is also included. Area models, like the Census Division models, are univariate in design in that only the historical relationship of the CPS is considered—UI claims data and CES employment data are not used each month in the estimation process.

The monthly estimates of employment and unemployment utilize a tiered approach to estimation known as real-time benchmarking. Model-based estimates (using a univariate form) are developed for the nine Census Divisions that geographically exhaust the Nation. These estimates are controlled to the National levels of employment and unemployment. State model-based estimates are then made and controlled to the Census Division estimates. In this manner, the monthly State employment and unemployment estimates will add to the National levels, precluding differences between the sum of States and the National estimates, and National shocks related to the business cycle or outliers like September 11 will be addressed in real time. Monthly pro-rata factors for each Census Division are used to adjust the sum of the States within each Census Division to sum to the Division totals. Census Divisions also use pro-rata factors to ensure that they sum to the Nation. Substate estimates, including the area and balance-of-State models noted above, are controlled directly to the State totals, which are themselves controlled to the National CPS via the Census Division models.

The new time series models introduce the following major improvements: (1) Model-based benchmarking, (2) additivity of outlier effects, (3) new model structure, and (4) enhanced smoothed seasonal adjustment procedure.

The improved models will directly produce estimates that automatically sum to Census Division controls and thus eliminate the need for the external pro-rata factors currently in use to benchmark State estimates to their Census Divisions. During the benchmarking process the new models account for the errors inherent in each facet of the estimating procedure. These include State-specific CPS sampling error, State model prediction errors based on historical patterns, errors in the estimates used as a benchmark (Census Division & National), and the relation of these errors to the overall size of the benchmark discrepancy. This approach provides greater flexibility (monthly benchmarking adjustments will vary by State and by type of series), smoother monthly adjustment factors, and improved reliability measures.

Another important improvement is that the new models allow for the additivity of outlier effects. Outlier estimates will be separated from the benchmarking process, resulting in the outliers being specific to where they occurred. Level shifts and onetime outliers will not be spread across all States within a Census Division so as

not to distort the magnitude of the outlier effect.

The new model structure uses CES and UI trend estimates as regressor variables to explain trend variation in the CPS. This produces results similar to current bivariate models but with a major reduction in computing time. The new structure also allows for more flexibility for model development over the long term.

An enhanced smooth seasonal adjustment procedure will be utilized to address the presence of residual seasonality that is noticeable in some of the smoothed seasonally adjusted employment series. The smoothed seasonal adjustment (SSA) procedure was implemented in 2005 with the third generation of models. The SSA procedure uses the Henderson Trend Filter to isolate the trend of the series by removing much of the volatility that is introduced to the State's estimates during the real-time benchmarking process. However, even with the application of the SSA there still remained some statistical evidence of weak residual seasonality in the SSA employment series. (The unemployment levels and the unemployment rates were not affected.)

To address this concern, the fourth generation of models utilize an improved smoothed seasonal adjustment filter. In addition to the trend filter, additional weights have been added to create a seasonal filter as well. The enhanced procedure will continue to remove the volatility introduced by real-time benchmarking, while simultaneously removing all residual seasonality that results from benchmarking to a seasonal series.

Incorporation of American Community Survey. For the 2010 Census, the long- and short-form questionnaires used from 1940 to 2000 were replaced by a single questionnaire asking 10 questions. The more detailed socio-economic data once obtained by the long-form questionnaire are now provided by the American Community Survey (ACS). The LAUS program had been reliant on the long form data as the basis for developing substate estimates for self-employed, unpaid family workers, private household workers, and agricultural workers throughout the decade. These data elements represent employment that is either not covered by unemployment insurance compensation programs or not included in the payroll survey data CES, thus the Census long form had been the sole source for this type of information at the local level.

ACS data are issued on an annual basis and they do not represent a single point in time as did the decennial Census, which represented April 1 in the year that the Census was conducted. Instead ACS data are estimates that span 1 year, 3 years, or 5 years depending on the population level of each area. To ensure coverage of all LAUS geography, which includes areas with 25,000 population or more and all cities and towns in New England regardless of population, the 5-year estimates must be used. In addition to covering all LAUS geography, the 5-year estimates use the largest sample size and are the most statistically reliable of the ACS estimates. However, since they represent a 5-year span they cannot be directly used to develop current monthly estimates.

The most current source of the needed data inputs is the CPS which does not have the geographic detail of the ACS. The proposed methodology will utilize the strengths of the CPS and the ACS to develop monthly estimates of self-employed, unpaid family, and private household workers (collectively known as ''all-other'' employment) and agricultural workers at the needed level of geography.

Enhanced procedures for developing other substate areas. Utilizing ACS data to replace the Census long form data facilitated the enhancement of some of the substate methodologies making up the building-block approach used to develop independent substate estimates. Revisions are proposed for the methodology of adjusting place-of-work data to a place-of-residence basis, the estimation of what is known as ''all-other'' employment, the estimation of agricultural employment, and the estimation of agricultural unemployment not covered by unemployment insurance. In addition, substate estimates will be developed at the county level rather than the labor market area level. A brief discussion of the new methodologies is below.

Place-of-Work Residency Adjustment. The LAUS program uses the same labor force concepts as the CPS. Thus employment inputs from the CES and Quarterly Census of Employment and Wages (QCEW) programs, which are based on place-of-work, must be adjusted to reflect the worker's place of residence per the CPS. To accomplish this, Dynamic Residency Ratios (DRRs) are applied to CES and QCEW employment inputs for LAUS estimation. This methodology assumes that resident employment in an area is a function of the relationship between employed residents and jobs not only in that area, but in other areas within commuting distance. The procedure is more dynamic than the use of a single residency ratio insofar as job count changes in commuting areas can affect resident employment.

In the past, journey-to-work data from the decennial Census were incorporated into the DRRs. Journey-to-work data were not available from 2010 Census due to the discontinuation of the long form. For the LAUS 2015 redesign, DRRs will be computed using ACS journey-to-work data in the same manner that they are computed now with one major modification. Currently, an area must be the destination workplace of at least 100 resident commuters (50 in New England) to be considered a potential commuter area. BLS proposes replacing these criteria with a percentage threshold. In the new set of DRRs, commuter areas will be limited to those areas that are the work destination of no less than 10 percent of resident commuters. This will eliminate marginal commuter areas included in the previous methodology to account for potential future growth.

The previous threshold for DRR commutation areas reflected the ten-year span between Census journey-to-work data releases. The inclusion of a relatively high number of areas would accommodate any potential changes to commuting patterns over the ensuing decade. The new data source for DRRs, ACS journey-to-work data, is intended to be updated every five years. The increased frequency in the availability of commutation data will make the list of commutation areas more responsive to changing commuting patterns, reducing the need to include minor destinations which may grow in importance over time.

Estimation of All-Other Employment. The current method uses Census 2000 data as the starting point for the self-employed, unpaid family, and private household workers (known as ''All-Other Employment'') and moves it forward through time by applying the relationship of all-other employment to the nonfarm wage and salary employment estimate at the time of the Census.

The new method uses the relationship of each area's share of ACS all-other employment to the State's total ACS all-other employment. This relationship is then used to allocate a monthly 5-year weighted average of each State's CPS estimate of all-other employment. A weighted average of the CPS estimate is used because, depending on the State's CPS sample size, the monthly estimate for this element may be volatile due to sampling error. This monthly 5-year weighted average consists of the current month's estimate averaged with the same month's estimate going back 4

years, with more weight placed on the more current estimates. This technique borrows strength from prior estimates while preserving seasonal trends.

Estimation of Agricultural Employment. The current method uses the Census 2000 data as the base and moves the estimate forward using a monthly change factor based on a State's membership in a multi-State agricultural region.

The new method for estimation of agricultural employment uses a similar approach as the all-other employment method. A monthly 5-year weighted average of each State's CPS estimate of agricultural employment is developed and allocated to substate areas using each areas' share of the State's total ACS agricultural employment. This method is State-specific and eliminates the need for an agricultural regional factor.

Estimation of non-covered agricultural unemployment. This is an optional procedure that is currently utilized by 19 States. The current procedure uses an indirect approach for the estimation of agricultural unemployment not covered by unemployment insurance. It assumes that there is unemployment associated with employment and that the unemployment rate in non-covered agriculture is related to the rate of unemployment in covered sectors of the economy. To estimate non-covered agricultural employment, the annual average of covered agricultural employment from the QCEW program is subtracted from the covered agricultural employment estimate that is developed each month (as described in the prior section). Seasonal factors derived from CPS agricultural data from 1977–1982 are applied to account for seasonality.

The new method replaces the annual average QCEW covered agricultural employment with a 1-year lagged monthly estimate of agricultural employment from the QCEW and eliminates the potentially outdated seasonal factors. Use of a 1-year lagged monthly estimate will incorporate seasonal trends into the estimate, simplifying the calculation and making it more responsive to long-term changes in seasonal patterns.

New procedure for estimating employment and unemployment at the county level. Labor market areas (LMAs) are independently estimated using a building block approach that incorporates the new methods discussed above and other methods still currently in use. The employment component is comprised of non-agricultural wage and salary employment, all-other employment and agricultural employment. While the unemployment component is derived by summing the estimates of non-covered agricultural unemployment (if applicable), total unemployment insurance (UI) continued claims without earnings, unemployed exhaustees and unemployed entrants into the labor force.

The current procedure consists of first developing these independent substate estimates at the LMA level and then disaggregating them into counties and cities. With the exception of non-agricultural wage and salary employment, all inputs for estimating the components of employment and unemployment are readily available at the county level (Minor Civil Division (MCD) level in New England, MCDs being cities and towns). Aggregating these more geographically detailed data into LMAs is an unnecessary step that results in the distortion of these data when they are reallocated backed to the county level or MCD level, particularly for some of the unemployment components.

The new method proposes to first develop the independent substate estimates at county level and then sum them to their appropriate LMA. This approach will result in more accurate estimates and will allow better operational flexibility for future updates to the geographic definitions of LMAs as counties (MCDs in New England) are the basic component of LMA geographic definitions issued by the Office of Management (OMB), as well as for small labor market areas as defined by the BLS.

The current method estimates the labor force in LMAs, which are defined to comprise one or more counties (MCDs in New England). Employment and unemployment inputs are entered at the LMA level. In a multi-county LMA, county unemployment estimates are disaggregated from the LMA using the share of UI claims for the experienced unemployed, the share of the 16–19 population for unemployed new entrants, and the share of the 20+ population for unemployed re-entrants.

The new procedures discussed above for estimating the employment components of all-other employment and agricultural employment produce these estimates at the county level. The non-agricultural wage and salary employment component, which is provided by the CES and the QCEW programs, is generally available at the LMA level and must be allocated into the counties that comprise the LMA. This will be accomplished by using ACS non-agricultural wage and salary employment ratios derived from the most recent ACS five-year dataset to distribute the CES/QCEW LMA data to its component counties (and MCDs in New England). This step is not needed for single county LMAs.

All of the necessary inputs for estimating unemployment are already available at the county (and MCD) level. The new procedure results in more accurate county estimates by estimating the level of persons who remain unemployed after exhausting their eligibility for unemployment insurance benefits (known as exhaustees) at the county level and by avoiding the disaggregation of entrants from interstate LMAs.

In the current method, if a layoff event occurs in a county that is part of a multi-county LMA, the exhaustees later associated with this event are not necessarily assigned to the county where the layoff occurred. This is because estimates of persons who have exhausted their eligibility for further UI benefits are disaggregated to a county using that county's share of persons who continue to be eligible for benefits. Using the new county-based methodology, each county will have its own independently estimated number of exhaustees, which will make it unnecessary to disaggregate exhaustees from the LMA level.

In addition, unemployed entrants to the labor force are allocated from a Statewide control total to the intrastate parts of interstate LMAs using ratios based on annually updated population data from the Census Bureau. These entrants are then summed into their respective interstate LMAs before being disaggregated again using ratios based on population data specific to each interstate LMA. In some cases this two-step process has the effect of reallocating entrant unemployment estimates across State lines. Using the new county-based methodology, each county will be allocated its share of entrants in one step.

Detailed descriptions of the current and Redesign approaches are available at the above address and at the BLS LAUS Web site *http://www.bls.gov/lau/home.htm.*

II. Desired Focus of Comments

This notice is a general solicitation of comments from the public.

Comments submitted in response to this notice will be summarized and included in the Notice of Decision on this proposal.

Signed at Washington, DC, this 29th day of August 2014.

Eric Molina,

Acting Chief, Division of Management Systems, Bureau of Labor Statistics.

[FR Doc. 2014–21241 Filed 9–9–14; 8:45 am]

BILLING CODE 4510–24–P

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION

[NARA–2014–054]

Advisory Committee on the Presidential Library-Foundation Partnerships

AGENCY: National Archives and Records Administration.

ACTION: Notice of meeting.

SUMMARY: In accordance with the Federal Advisory Committee Act, as amended (5 U.S.C. appendix 2), the National Archives and Records Administration (NARA) announces a meeting of the Advisory Committee on Presidential Library-Foundation Partnerships. The meeting will be held to discuss the Presidential Library program and topics related to the public-private partnership between Presidential Libraries and Presidential Foundations. The meeting will be open to the public.

DATES: The meeting will be held on Thursday, October 23, 2014 from 10:00 a.m. to 1:00 p.m.

ADDRESSES: National Archives Building at 700 Pennsylvania Avenue NW., Washington, DC, Room 105.

FOR FURTHER INFORMATION CONTACT: Denise LeBeck at 301–837–3250 or *denise.lebeck@nara.gov.*

SUPPLEMENTARY INFORMATION: Meeting attendees may enter from Pennsylvania Avenue entrance. Photo identification will be required. No visitor parking is available at the Archives building; however there are commercial parking lots and metered curb parking nearby.

Dated: September 4, 2014.

Patrice Little Murray,

Committee Management Officer.

[FR Doc. 2014–21558 Filed 9–9–14; 8:45 am]

BILLING CODE 7515–01U–P

NATIONAL SCIENCE FOUNDATION

Notice of Permits Issued Under the Antarctic Conservation Act of 1978

AGENCY: National Science Foundation.

ACTION: Notice of permits issued under the Antarctic Conservation of 1978, Pub. L. 95–541.

SUMMARY: The National Science Foundation (NSF) is required to publish notice of permits issued under the Antarctic Conservation Act of 1978. This is the required notice.

FOR FURTHER INFORMATION CONTACT: Li Ling Hamady, ACA Permit Officer, Division of Polar Programs, Rm. 755, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230. Or by email: *ACApermits@nsf.gov*.

SUPPLEMENTARY INFORMATION: On July 31, 2014 the National Science Foundation published a notice in the **Federal Register** of a permit modification received. The permit was issued on September 3, 2014 to:

Ron Naveen

Permit No. 2014–001

Nadene G. Kennedy,

Polar Coordination Specialist, Division of Polar Programs.

[FR Doc. 2014–21563 Filed 9–9–14; 8:45 am]

BILLING CODE 7555–01–P

NATIONAL SCIENCE FOUNDATION

Notice of Permits Issued Under the Antarctic Conservation Act of 1978

AGENCY: National Science Foundation

ACTION: Notice of permits issued under the Antarctic Conservation of 1978, Public Law 95–541.

SUMMARY: The National Science Foundation (NSF) is required to publish notice of permits issued under the Antarctic Conservation Act of 1978. This is the required notice.

FOR FURTHER INFORMATION CONTACT: Li Ling Hamady, ACA Permit Officer, Division of Polar Programs, Rm. 755, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230. Or by email: *ACApermits@nsf.gov*.

SUPPLEMENTARY INFORMATION: On July 2, 2014 the National Science Foundation published a notice in the **Federal Register** of a permit application received. The permit was issued on September 3, 2014 to:

Dr. Terrie M. Williams

Permit No. 2015–003

Nadene G. Kennedy,

Polar Coordination Specialist, Division of Polar Programs.

[FR Doc. 2014–21564 Filed 9–9–14; 8:45 am]

BILLING CODE 7555–01–P

NATIONAL SCIENCE FOUNDATION

Notice of Permit Applications Received Under the Antarctic Conservation Act of 1978

AGENCY: National Science Foundation.

ACTION: Notice of Permit Applications Received under the Antarctic Conservation Act of 1978, Public Law 95–541.

SUMMARY: The National Science Foundation (NSF) is required to publish a notice of permit applications received to conduct activities regulated under the Antarctic Conservation Act of 1978. NSF has published regulations under the Antarctic Conservation Act at Title 45 Part 670 of the Code of Federal Regulations. This is the required notice of permit applications received.

DATES: Interested parties are invited to submit written data, comments, or views with respect to this permit application by October 10, 2014. This application may be inspected by interested parties at the Permit Office, address below.

ADDRESSES: Comments should be addressed to Permit Office, Room 755, Division of Polar Programs, National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230.

FOR FURTHER INFORMATION CONTACT: Li Ling Hamady, ACA Permit Officer, at the above address or *ACApermits@nsf.gov* or (703) 292–7149.

SUPPLEMENTARY INFORMATION: The National Science Foundation, as directed by the Antarctic Conservation Act of 1978 (Pub. L. 95–541), as amended by the Antarctic Science, Tourism and Conservation Act of 1996, has developed regulations for the establishment of a permit system for various activities in Antarctica and designation of certain animals and certain geographic areas a requiring special protection. The regulations establish such a permit system to designate Antarctic Specially Protected Areas.

Application Details

1. *Applicant:* Kenneth W.W. Sims, University of Wyoming, Department of Geology and Geophysics, Dept. 3006, 1000 E. University Avenue, Laramie, WY 82071–2000.

Permit Application: 2015–007

Activity For Which Permit Is Requested: ASPA entry; Enter Cape Crozier to extract 3 5–10kg rock samples from lava outcrops.

Location: ASPA 124 Cape Crozier, Ross Island.

Dates: October 6–29, 2014.

Nadene G. Kennedy,

Polar Coordination Specialist, Division of Polar Programs.

[FR Doc. 2014–21562 Filed 9–9–14; 8:45 am]

BILLING CODE 7555–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72989; File No. SR–MIAX–2014–47]

Self-Regulatory Organizations; Miami International Securities Exchange LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fee Schedule

September 4, 2014

Pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act'') [1] and Rule 19b–4 thereunder,[2] notice is hereby given that on August 25, 2014, Miami International Securities Exchange LLC (''MIAX'' or ''Exchange'') filed with the Securities and Exchange Commission (''Commission'') a proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange is filing a proposal to amend its Fee Schedule.

The text of the proposed rule change is available on the Exchange's Web site at *http://www.miaxoptions.com/filter/wotitle/rule_filing,* at MIAX's principal office, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

A. Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend its Fee Schedule to: (i) Adopt transaction fees for market participants in non-Penny Pilot options classes; (ii) provide for additional incentives for achieving certain Priority Customer Rebate Program volume tiers; and (iii) to make a minor technical change to delete obsolete language. The proposed changes are based on the similar fees of other competing options exchange.[3]

The Exchange proposes to adopt transaction fees for Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms in non-Penny Pilot options classes. Specifically, the Exchange proposes to assess the following fees for transactions in non-Penny Pilot options classes: (i) Public Customers that are not a Priority Customer, $0.32 per contract for standard options and $0.03 per contract for mini options; (ii) Non-MIAX Market Makers, $0.62 per contract for standard options and $0.06 per contract for mini options; (iii) Non-Member Broker-Dealers, $0.62 per contract for standard options and $0.06 per contract for mini options; and (iv) Firms, $0.32 per contract for standard options and $0.03 per contract for mini options. The Exchange notes that the transaction fees for Priority Customers and Market Makers will not change and thus both will continue to be charged the same amount for non-Penny Pilot options classes and Penny Pilot options classes as they do today.

The Exchange proposes to offer MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms the opportunity to reduce transaction fees by $0.02 per contract in standard options in non-Penny Pilot options classes in the same manner as Penny Pilot options classes.[4] Specifically, any Member or its affiliates of at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A, that qualifies for Priority Customer Rebate Program volume tiers 3, 4, or 5 and is a Public Customers that are not a Priority Customer or Firm will be assessed $0.30 per contract for standard options in non-Penny Pilot options classes. Further, any Member or its affiliates of at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A, that qualifies for Priority Customer Rebate Program volume tiers 3, 4, or 5 and is a Non-MIAX Market Makers or Non-Member Broker-Dealers will be assessed $0.60 per contract for standard options in non-Penny Pilot options classes. The Exchange believes that these incentives will encourage MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms to transact a greater number of orders on the Exchange.

The Exchange also proposes a technical change to delete an obsolete fee and date from the Options Regulatory Fee schedule of the Fee Schedule. The Exchange believes that this change will reduce the potential of confusion on behalf of market participants.

The Exchange proposes to implement the new transaction fees beginning September 1, 2014.

2. Statutory Basis

The Exchange believes that its proposal to amend its fee schedule is consistent with Section 6(b) of the Act [5] in general, and furthers the objectives of Section 6(b)(4) of the Act [6] in particular, in that it is an equitable allocation of reasonable fees and other charges among Exchange members.

The Exchange believes that its proposal to assess transaction fees in non-Penny Pilot options classes, which differs from Penny Pilot options classes, is consistent with other options markets that also assess different transaction fees for non-Penny Pilot options classes as compared to Penny Pilot options classes. The Exchange believes that establishing different pricing for non-Penny Pilot options and Penny Pilot options is reasonable, equitable, and not unfairly discriminatory because Penny Pilot options are more liquid options as compared to non-Penny Pilot options. Additionally, other competing options exchanges differentiate pricing in the similar manner today.[7]

The Exchange's proposal to increase the transaction fees for Public

[3] *See* NASDAQ OMX PHLX LLC Pricing Schedule, Section II; NYSE Amex Options Fee Schedule, p. 4; Chicago Board Options Exchange, Incorporated, Fee Schedule, p. 2. *See also* Securities Exchange Act Release No. 68556 (January 2, 2013), 78 FR 1293 (January 8, 2013) (SR–BX–2012–074).

[4] *See* SR–MIAX–2014–46.

[5] 15 U.S.C. 78f(b).

[6] 15 U.S.C. 78f(b)(4).

[7] *See* NASDAQ OMX PHLX LLC Pricing Schedule, Section II; NYSE Amex Options Fee Schedule, p. 4; Chicago Board Options Exchange, Incorporated, Fee Schedule, p. 2. *See also* Securities Exchange Act Release No. 68556 (January 2, 2013), 78 FR 1293 (January 8, 2013) (SR–BX–2012–074).

Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms in non-Penny Pilot options classes is reasonable because the Exchange's fees will remain competitive with and in the range of similar transaction fees at other options exchanges.[8] The Exchange's proposal to increase the transaction fees for Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms in non-Penny Pilot options classes is equitable and not unfairly discriminatory because the increase applies equally to all such market participants, in each category of market participant. The Exchange does not assess Priority Customers transactions fees because Priority Customer order flow enhances liquidity on the Exchange for the benefit of all market participants. Priority Customer liquidity benefits all market participants by providing more trading opportunities, which attracts Market Makers and other market participants. An increase in the activity of these market participants in turn facilitates tighter spreads, which may cause an additional corresponding increase in order flow from other market participants. Market Makers are assessed lower transaction fees as compared to Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms because they have obligations to the market and regulatory requirements, which normally do not apply to other market participants.[9] They have obligations to make continuous markets, engage in a course of dealings reasonably calculated to contribute to the maintenance of a fair and orderly market, and not make bids or offers or enter into transactions that are inconsistent with a course of dealings. In addition, charging non-members higher transaction fees is a common practice amongst exchanges because Members are subject to other fees and dues associated with their membership to the Exchange that do not apply to non-members. The proposed differentiation as between Priority Customers, Market Makers, and other market participants recognizes the differing contributions made to the liquidity and trading environment on the Exchange by these market participants.

The Exchange's proposal to offer MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms the opportunity to reduce transaction fees by $0.02 per contract in standard options in non-Penny Pilot options classes in the same manner as Penny Pilot options classes, provided certain criteria are met, is reasonable because the Exchange desires to offer all such market participants an opportunity to lower their transaction fees. The Exchange's proposal to offer MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms the opportunity to reduce transaction fees by $0.02 per contract in standard options in non-Penny Pilot options classes, provided certain criteria are met, is equitable and not unfairly discriminatory because the Exchange will offer all market participants, excluding Priority Customers, a means to reduce transaction fees by qualifying for volume tiers in the Priority Customer Rebate Program. The Exchange believes that offering all such market participants the opportunity to lower transaction fees by incentivizing them to transact Priority Customer order flow in turn benefits all market participants.

The Exchange believes that the proposal to allow the aggregation of trading activity of separate Members or its affiliates for purposes of the fee reduction is fair, equitable and not unreasonably discriminatory. The Exchange believes the proposed rule change is reasonable because it would allow aggregation of the trading activity of separate Members or its affiliates for purposes of the fee reduction only in very narrow circumstances, namely, where the firm is an affiliate, as defined herein. Furthermore, other exchanges, as well as MIAX, have rules that permit the aggregation of the trading activity of affiliated entities for the purposes of calculating and assessing certain fees. The Exchange believes that offering all such market participants the opportunity to lower transaction fees by incentivizing them to transact Priority Customer order flow in turn benefits all market participants.

Finally, the Exchange believes that technical changes to delete an obsolete fee and date from the Options Regulatory Fee schedule of the Fee Schedule will protect investors and the public interest by eliminating potential confusion that could be caused by the existing language used to describe the Options Regulatory Fee.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. The proposal is similar to the transaction fees found on other options exchanges; therefore, the Exchange believes the proposal is consistent with robust competition by increasing the intermarket competition for order flow from market participants. To the extent that there is additional competitive burden on non-member market participants, the Exchange believes that this is appropriate because charging non-members higher transaction fees is a common practice amongst exchanges and Members are subject to other fees and dues associated with their membership to the Exchange that do not apply to non-members. To the extent that there is additional competitive burden on market participants that are not Priority Customers or Market Makers, the Exchange believes that this is appropriate because the proposal should incent Members to direct additional order flow to the Exchange and thus provide additional liquidity that enhances the quality of its markets and increases the volume of contracts traded here. To the extent that this purpose is achieved, all the Exchange's market participants should benefit from the improved market liquidity. Enhanced market quality and increased transaction volume that results from the anticipated increase in order flow directed to the Exchange will benefit all market participants and improve competition on the Exchange. The Exchange notes that it operates in a highly competitive market in which market participants can readily favor competing venues if they deem fee levels at a particular venue to be excessive. In such an environment, the Exchange must continually adjust its fees to remain competitive with other exchanges and to attract order flow. The Exchange believes that the proposal reflects this competitive environment.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

Written comments were neither solicited nor received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A)(ii) of the Act.[10] At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend

[8] *Id.*

[9] *See* Exchange Rules 603 and 604.

[10] 15 U.S.C. 78s(b)(3)(A)(ii).

such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov*. Please include File Number SR–MIAX–2014–47 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–MIAX–2014–47. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–MIAX–2014–47 and should be submitted on or before October 1, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[11]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21523 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72991; File No. SR–CBOE–2014–069]

Self-Regulatory Organizations; Chicago Board Options Exchange, Incorporated; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to XSP and DJX Strike Price Listings

September 4, 2014.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that, on August 28, 2014, Chicago Board Options Exchange, Incorporated (the ''Exchange'' or ''CBOE'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

[sic] proposes to amend Rule 24.9 (Terms of Index Option Contracts), including Interpretation and Policy .02(b) and Interpretation and Policy .11 thereunder regarding the strike setting regimes for Mini-S&P 500 Index (''XSP'') options and options based on one-one hundredth of the Dow Jones Industrial Average (''DJX'') under the End of Week/End of Month Expirations Pilot Program (''EOW/EOM Pilot Program'') in Rule 24.9(e) and the Short Term Options Series Program (''STOS'') in Rule 24.9(a)(2)(A). The text of the proposed rule change is provided below.

(additions are *underlined;* deletions are [bracketed])

* * * * *

Chicago Board Options Exchange, Incorporated Rules

* * * * *

Rule 24.9—Terms of Index Option Contracts

RULE 24.9(a)–(e) No change.

. . . *Interpretations and Policies:*

.01 The procedures for adding and deleting strike prices for index options are provided in Rule 5.5 and Interpretations and Policies related thereto, as otherwise generally provided by Rule 24.9, and include the following:

(a) No change.

(b) Notwithstanding the above paragraph, the interval between strike prices may be no less than $0.50 for options based on one-one hundredth of the value of the DJIA*, including for series listed under either the Short Term Options Series Program in Rule 24.9(a)(2)(A) or the EOW/EOM Pilot Program in Rule 24.9(e).*

(c)–(m) No change.

.02–.10 No change.

.11 Notwithstanding Interpretations and Policies .01(a), .01(d) and .04 to Rule 24.9, the exercise prices for new and additional series of Mini-SPX options shall be listed subject to the following:

(a) If the current value of the Mini-SPX is less than or equal to 20, the Exchange shall not list series with an exercise price of more than 100% above or below the current value of the Mini-SPX;

(b) If the current value of the Mini-SPX is greater than 20, the Exchange shall not list series with an exercise price of more than 50% above or below the current value of the Mini-SPX; and

(c) The lowest strike price interval that may be listed for *standard* Mini-SPX options is $1, including for LEAPS*, and the lowest strike price interval that may be listed for series of Mini-SPX listed under either the Short Term Option Series Program in Rule 24.9(a)(2)(A) or the EOW/EOM Pilot Program in Rule 24.9(e) is $0.50.*

.12–.14 No change.

* * * * *

The text of the proposed rule change is also available on the Exchange's Web site (*http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx*), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements

---

[11] 17 CFR 200.30–3(a)(12).

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend Rule 24.9 (Terms of Index Option Contracts) to allow the Exchange to list Weekly series of XSP and DJX in $0.50 strike price intervals.[3] Specifically, the Exchange proposes to modify Interpretation and Policy .01(b) and Interpretation and Policy .11 to Rule 24.9 to provide that Weekly series of XSP and DJX options listed under the STOS Program in Rule 24.9(a)(2)(A) and EOW/EOM Pilot Program in Rule 24.9(e) may be listed in strike price intervals of $0.50 or greater.[4] The Exchange believes that the proposed rule change is consistent with the strike setting regimes of similar competitive products and that the proposed rule change would make XSP and DJX options easier for investors and traders to use and more tailored to their investment needs.

XSP and DJX options track the performance of the S&P 500 Index (''SPX'') and Dow Jones Industrial Average (''DJIA''). Whereas SPX options reflect strike prices equal to S&P 500 Index value, the price of XSP equals 1/10th of the price of the SPX. The DJX reflects a price equal to 1/100th of the price of the DJIA. Accordingly, XSP strike prices reflect a value equal to 1/10th of the value of the SPX and DJX strike prices reflect a value equal to 1/100th of the value of the DJIA with each having a multiplier of $100. For example, if the S&P 500 Index is at 1972.56, XSP options will have a value of 197.26 and a notional value of $19,726. If the DJIA is at 16,569.98, DJX options will have a value of 165.70 and a notional value of $16,570. In general, XSP and DJX options provide retail investors and traders with the benefit of trading the broad market in a manageably sized contract. XSP and DJX Weekly options trade under the EOW/EOM Pilot Program in Rule 24.9(e) and STOS Program in Rule 24.9(a)(2)(A) respectively.

The SPX is widely regarded as the best single gauge of large cap U.S. equities. Similarly, the DJIA is widely quoted as an indicator of stock prices and investor confidence in the securities market. As a result, individual investors often use SPX- and DJIA-related products to diversify their portfolios and benefit from market trends With respect to XSP, the Commission has noted that,

> reduced-value SPX options may benefit investors by providing them with a relatively low-cost means to hedge their portfolios. The Commission also believes that the lower cost of the reduced-value SPX options should allow investors to hedge their portfolios with a smaller outlay of capital and may facilitate participation in the market for SPX options, which should, in turn, help to maintain the depth and liquidity of the market for SPX options, thereby protecting investors and the public interest.[5]

Accordingly, the Exchange believes that offering a wide range of SPX- and DJIA-based options affords traders and investors important hedging and trading opportunities. The Exchange believes that not having the proposed $0.50 strike price for series of near-term XSP and DJX options significantly constricts investors' hedging and trading possibilities.

Notably, standard DJX already trade in $0.50 strike price intervals and SPX options trade in $5.00 strike intervals, which are equivalent to $0.50 strike price intervals in XSP. XSP, however, only trades in intervals of $1.00 or greater. This disunity creates a situation where certain options trading strategies cannot be executed using options with the same underlying. For example, an XSP options investor may not be able to roll a position to a higher strike price (equivalent to a strike price listed in SPX), simply because of the strike setting regime differences between the products despite the relative notional values between standard SPX and scaled XSP options. The Exchange's proposed rule change would remedy this situation by establishing strike interval settings for XSP and DJX Weekly options in-line with the strikes listed for standard SPX and DJX options products. The Exchange believes that the proposed rule change, like other strike price programs currently offered by the Exchange, will benefit investors by giving them increased flexibility and the ability to more closely tailor their investment and hedging decisions to their needs. Moreover, the proposed rule change is consistent with similar rule changes proposed by other exchanges.[6]

Under current Interpretation and Policy .01(b) to Rule 24.9, the interval between strike prices in standard series of DJX options may be no less than $0.50. The Exchange seeks to clarify that Interpretation and Policy .01(b) to Rule 24.9 applies to all series of the DJX options, including DJX options listed under either the STOS Program or EOW/EOM Pilot Program. Accordingly, the Exchange's proposal would add language stating that the interval between strike prices may be no less than $0.50 for options based on one-one hundredth of the value of the DJIA, including for Weekly options listed under the STOS Program in Rule 24.9(a)(2)(A) or EOW/EOM Pilot Program. Similarly, the Exchange proposes to amend Interpretation and Policy .11 to Rule 24.9 to allow Weekly series XSP options to trade in $0.50 increments. Specifically, the Exchange proposes to amend Interpretation and Policy .11(c) to Rule 24.9 to state that the Exchange may list Weekly series of XSP options listed under either the STOS Program in Rule 24.9(a)(2)(A) or the EOW/EOM Pilot Program in Rule 24.9(e) in $0.50 intervals.

The Exchange believes that by having smaller strike intervals in series XSP and DJX, investors and traders would have more efficient hedging and trading opportunities. The proposed strike setting regime would permit strikes to be set to more closely reflect values in the underlying S&P 500 Index and DJIA and allow investors and traders to roll open positions from a lower strike to a higher strike in conjunction with the price movement of the underlying.

[3] The Exchange uses the term ''Weeklys'' to generally refer to the different types of security options that expire on any Friday other than the third Friday of the month. The Rules currently specify two types of security options that expire on such Fridays: STOS and EOW/EOM expirations. *See* Rules 5.5(d) (STOS program for equity classes) and 24.9(a)(2)(A) (STOS program for index classes) and Rule 24.9(e) (sets forth the terms of the EOW/EOM Pilot Program).

[4] The Exchange proposes to make the changes in this filing at the class level, *i.e.,* DJX and XSP. Currently, weekly series on DJX are listed under the STOS program and weekly series on XSP are listed under the EOW/EOM Pilot Program. A noteworthy difference between these programs is that series in the EOW/EOM Pilot Program are P.M.-settled and series in the STOS program have the same settlement style as standard expirations on that same class. The Exchange is proposing to permit $0.50 strike price intervals for DJX and XSP series listed under either program so as to create flexibility and to conform the strike setting regimes for series of these classes listed under either program.

[5] *See* Securities Exchange Act Release No. 32893 (September 14, 1993), 58 FR 49070 (September 21, 1993) (Order approving listing of reduced-value options on the Standard & Poor's 500 Stock Index) (SR–CBOE–93–12).

[6] *See* Securities and Exchange Act Release 34–72664 (July 24, 2014), 79 FR 44231 (July 30, 2014) (Notice of Filing of Proposed Rule Change, as Modified by Amendment No. 1, Relating to SPY and DIA Options) (SR–Phlx–2014–046).

With respect to DJX options, by listing Weekly series of DJX options with $0.50 intervals between strike prices, traders and investors would be able to more precisely hedge open positions with $0.50 strike prices in standard options with Weekly options and roll open positions with $0.50 strike prices in standard DJX options uniformly into DJX Weekly options positions. With respect to XSP, the proposed approach would achieve full harmonization between strikes in XSP options and SPX options. For example, if there is a 1985 strike in SPX options, the Exchange would be permitted to list a parallel 198.50 strike in XSP options. Thus, the Exchange believes that the proposed rule change would allow XSP traders and investors to tailor their investment strategies in the same manner as traders and investors in SPX—that these changes would allow traders and investors to use XSP options to hedge S&P 500 cash positions more precisely and in the same manner as SPX traders and investors.

The Exchange believes that the proposed rule change, like the other strike price programs currently offered by the Exchange, will benefit investors by providing investors the flexibility to more closely tailor their investment and hedging decisions using XSP and DJX options. In addition, the Exchange believes that the proposal would harmonize the strike setting regimes for XSP and DJX weekly series with the strike setting regimes for weekly series on certain exchange-trade options (''ETF'') option classes (that track the performance of broad based indexes such as the S&P 500 and the Dow Jones Industrial Average), for which the lowest strike price interval is $0.50. A recent rule filing proposed to amend the strike setting regimes for certain standard ETF option classes, which would result in $0.50 strike price intervals being permitted in STOs on those same ETF option classes.[7]

The Exchange notes that its proposal to list XSP and DJX Weekly options in $0.50 intervals would moderately augment the potential total number of options series available on the Exchange. However, the Exchange has analyzed its capacity and represents that it and the Options Price Reporting Authority (''OPRA'') have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange also believes that Trading Permit Holders will not have a capacity issue due to the proposed rule change. The Exchange further represents that it does not believe that this expansion will cause fragmentation of liquidity.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Act and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[8] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[9] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[10] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

In particular, the proposed rule change would add consistency to the options markets and allow investors to more easily use XSP and DJX options. Notably, the current Rules already permit the Exchange to list standard series of DJX options with $0.50 strike price intervals[11] and SPX options currently trade in strike intervals equivalent to $0.50 strike price intervals in XSP. This creates a situation where traders and investors may not be able to effectively execute certain traditional options strategies such as, for example, rolling positions out a month because of disunity in the strike settings of a product or because of the smaller notional value of a scaled product relative to the product from which it derives. This proposal remedies the situation by establishing interval regime for Weekly XSP and DJX options that is in line with standard DJX and SPX options products. The Exchange believes that the proposed rule change, like other strike price programs currently offered by the Exchange, would provide additional flexibility in the market and benefit investors and traders. Moreover, the proposed rule change would increase market competition and provide traders and investors with alternatives tailored to their investment, trading, and hedging need. Notably, the Exchanges proposal is also consistent with proposed rule changes recently filed with the Commission by other exchanges.[12]

The Exchange believes that the proposed rule change would contribute to the robustness of the market and help ensure fair competition between participants. Other proposed rule changes have recently been filed with the Commission, including by CBOE, seeking to list Weekly series of SPY and DIA options with $0.50 intervals between strikes. XSP and DJX products compete directly with SPY and DIA options products, which roughly track the S&P 500 Index and DJIA. Without the ability to list XSP and DJX options with strike prices similar to those being offered in competing series of SPY and DIA options, XSP and DJX would be unable to compete fairly with SPY and DIA options in the marketplace. The inability to list XSP and DJX options with finer $0.50 strikes in harmony with similar SPY and DIA products would put the Exchange at a competitive disadvantage and ultimately, result in fewer investment and trading opportunities for investors and traders. The Exchange believes that the proposed rule change would allow the Exchange to compete on equal footing with other exchanges that may propose to list Weekly SPY and DIA options products with finer intervals between strike price intervals and ensure that XSP and DJX options investors and traders are not at a disadvantage in the market.

The Exchange also believes the proposed rule change is consistent with Section 6(b)(1) of the Act, which provides that the Exchange be organized and have the capacity to be able to carry out the purposes of the Act and the rules and regulations thereunder, and the rules of the Exchange. The proposed rule change would allow the Exchange to respond to customer demand for finer strike prices in series of Weekly XSP and DJX options.

In addition, The Exchange does not believe that the proposed rule would create additional capacity issues or affect market functionality. With regard to the impact of this proposal on system capacity, the Exchange has analyzed its

[7] *See* Securities and Exchange Act Release 34–72664 (July 24, 2014), 79 FR 44231 (July 30, 2014) (Notice of Filing of Proposed Rule Change, as Modified by Amendment No. 1, Relating to SPY and DIA Options) (SR–Phlx–2014–046).

[8] 15 U.S.C. 78f(b).

[9] 15 U.S.C. 78f(b)(5).

[10] *Id.*

[11] *See* Interpretation and Policy .01(b) to Rule 24.9.

[12] *See* Securities and Exchange Act Release 34–72664 (July 24, 2014), 79 FR 44231 (July 30, 2014) (Notice of Filing of Proposed Rule Change, as Modified by Amendment No. 1, Relating to SPY and DIA Options) (SR–Phlx–2014–046).

capacity and represents that it and OPRA have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. Rather, the Exchange believes that the proposed rule change will result in additional investment options and opportunities to achieve the investment and trading objectives of market participants seeking efficient trading and hedging vehicles, to the benefit of investors, market participants, and the marketplace in general. Specifically, the Exchange believes that XSP and DJX option investors and traders will significantly benefit from the availability of finer strike prices being listed in series of XSP and DJX Weekly options. Moreover, the Exchange believes that the proposed rule changes will bolster intermarket competition by allowing the Exchange to list XSP and DJX strike prices commensurate with the strike prices in SPY and DIA options products with which XSP and DJX options products compete directly. The inability to list $0.50 strikes in series of XSP and DJX Weekly options would put the Exchange at a distinct competitive disadvantage with respect to SPY and DIA options. As such, the Exchange believes that the proposed rule change is essential for intermarket competitive purposes and to promote a free and open market for the benefit of investors and traders.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the proposed rule change does not (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act [13] and Rule 19b–4(f)(6) thereunder.[14]

The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Exchange stated that waiver of this requirement would allow the Exchange to list XSP and DJX strike prices commensurate with available strike prices in SPY and DIA options products against which XSP and DJX options products compete directly. The Exchange also stated that, given the current level of the S&P 500 Index, the Exchange believes that it is important to be able to list the requested strikes as soon as possible so that traders and investors have appropriately tailored products available to them to meet their needs in the current market conditions. For these reasons, the Commission believes that the proposed rule change presents no novel issues and that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest; and will allow the Exchange to remain competitive with other exchanges. Therefore, the Commission designates the proposed rule change to be operative upon filing.[15]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov*. Please include File Number SR–CBOE–2014–069 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–CBOE–2014–069. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–CBOE–2014–069 and should be submitted on or before October 1, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[16]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21525 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

[13] 15 U.S.C. 78s(b)(3)(A).

[14] 17 CFR 240.19b–4(f)(6). As required under Rule 19b–4(f)(6)(iii), the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission.

[15] For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

[16] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72986; File No. SR–CBOE–2014–017]

Self-Regulatory Organizations; Chicago Board Options Exchange, Incorporated; Order Approving a Proposed Rule Change, as Modified by Amendment 1, To Amend Its Rules Related to Complex Orders

September 4, 2014.

I. Introduction

On February 19, 2014, Chicago Board Options Exchange, Incorporated (the ''Exchange'' or ''CBOE'') filed with the Securities and Exchange Commission (the ''Commission''), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act'') [1] and Rule 19b–4 thereunder,[2] a proposed rule change to amend its rules relating to complex orders. On March 3, 2014, the Exchange filed Amendment No. 1 to the proposed rule change. The proposed rule change, as modified by Amendment No. 1 thereto, was published for comment in the **Federal Register** on March 10, 2014.[3] On April 23, 2014, the Commission extended the time period in which to either approve the proposal, disapprove the proposal, or to institute proceedings to determine whether to approve or disapprove the proposal, to June 6, 2014.[4] On June 5, 2014, the Commission instituted proceedings to determine whether to approve or disapprove the proposed rule change.[5] The Commission then received two comment letters on proposal.[6] This order approves the proposed rule change.

II. Description of Proposed Rule Change

Under current CBOE Rule 6.53C(d)(ii), a Trading Permit Holder representing a COA-eligible order may request that the Exchange initiate a complex order auction (''COA'') for the COA-eligible order before such order enters the complex order book (''COB'').[7] In this proposed rule change, the Exchange proposes to require all complex orders with three or more legs to be subject to a COA prior to entering the COB.[8] Specifically, the Exchange proposes to amend Rule 6.53C(d)(ii) to provide that CBOE's Hybrid Trading System [9] (the ''System'') will initiate a COA on receipt of: (1) A COA-eligible order with two legs and request from the Trading Permit Holder representing the order that it initiate a COA; or (2) a complex order with three or more legs, regardless of the order's routing parameters (*e.g.,* a request to route directly to the COB) or handling instructions (except for orders routed for manual handling).[10] Thus, as proposed, all complex orders in Hybrid classes with three or more legs would automatically be subject to a COA (other than those routed for manual handling) prior to entering the COB where they can leg into the market.[11]

The Exchange proposes to amend CBOE Rule 6.53C(d)(ii) to provide that CBOE's System will reject back to a Trading Permit Holder any complex order with three or more legs that includes a request pursuant to CBOE Rule 6.53C, Interpretation and Policy .04 [12] that the order not initiate a COA.[13] The Exchange also proposes to amend CBOE Rule 6.53C(d)(ii), which currently provides that only a Trading Permit Holder representing an order may request that the order initiate a COA, to also provide that PAR operators handling an order may request that a COA-eligible order initiate a COA.[14]

According to the Exchange, this proposed rule change will address the concern that market makers may reduce the size of their quotations in the leg markets because of the presence of certain complex orders that are designed to circumvent the ''Quote Risk Monitor Mechanism'' (''QRM'') settings established by market makers.[15] CBOE describes the QRM as a functionality designed to help market makers provide liquidity across most series in their appointed classes without being at risk of executing the full cumulative size of all their quotes before being given adequate opportunity to adjust their quotes.[16]

The QRM, according to CBOE, generally operates by allowing market makers to set a variety of parameters, which, if triggered, will cause the System to cancel a market maker's quotes in all series in an appointed class after executing the order that triggered the parameter.[17] CBOE states that the System performs the QRM parameter calculations to determine if the QRM has been triggered after each execution against a market maker's quotes.[18] According to the Exchange, when a complex order legs into the regular market (*i.e.,* executes against individual quotes for each of the legs in the regular market), all of the legs of a complex order are considered as a single execution for purposes of the QRM, and

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 71648 (March 5, 2014), 79 FR 13359 (''Notice'').

[4] *See* Securities Exchange Act Release No. 72008, 79 FR 24032 (April 29, 2014).

[5] *See* Securities Exchange Act Release No. 72329, 79 FR 33627 (June 11, 2014).

[6] *See* letter to Kevin M. O'Neill, Deputy Secretary, Commission, from John Kinahan, Interim-CEO, Group One Trading, L.P., dated July, 7, 2014 (''Group One Letter''); and letter to the Office of the Secretary, Commission, from Martha Redding, Chief Counsel and Assistant Corporate Secretary, NYSE, Inc., dated July 10, 2014 (''NYSE Letter'').

[7] Under current CBOE Rule 6.53C(d)(i)(2), the Exchange may determine on a class-by-class basis which complex orders are eligible for a COA, including by complex order type and origin type. The Exchange notes that currently, in all Hybrid classes, customer, firm and broker-dealer complex orders are eligible for a COA, and all complex order types except for immediate-or-cancel (''IOC'') orders are eligible for a COA in all Hybrid classes. *See* Notice, *supra* note 3, n.8. Additionally, only marketable orders and ''tweeners'' (limit orders bettering the same side of the derived net market) are eligible for a COA. For Hybrid 3.0 classes (*i.e.* SPX), all complex order types (including IOC orders) are eligible for a COA, but only customer complex orders are eligible for a COA. *See id.* (citing CBOE Regulatory Circulars RG06–73, RG08–38, and RG08–97).

[8] The Exchange explains that this proposed change applies to Hybrid classes only, and not Hybrid 3.0 classes. *See* Notice, *supra* note 3, n.7. In this regard, the proposed rule change proposes to amend CBOE Rule 6.53C, Interpretation and Policy .10 to indicate that complex orders in Hybrid 3.0 classes, regardless of the number of legs, will initiate a COA in the same manner they currently do. *See id.*

[9] The proposed rule change proposes to amend CBOE Rule 6.53C(d)(ii) to say that the System, rather than the Exchange, will send the RFR message. *See id.* at n.9. Because the System will automatically send the RFR message when the conditions set forth in CBOE Rule 6.53C(d)(ii) are met, the Exchange believes using the term ''System'' in the rule text is appropriate. *See id.*

[10] The Exchange explains that if a complex order with three or more legs contains an instruction to route for manual handling, such as to PAR, and through such manual handling routes to the COB, the proposed rule change would provide that such order will initiate a COA prior to entry on the COB, even if the PAR operator requests that the order not initiate a COA. *See* Notice, *supra* note 3, n.10.

[11] The Exchange states that this automatic initiation of a COA does not apply to stock-option orders. *See id.* at n.11.

[12] CBOE Rule 6.53C, Interpretation and Policy .04 provides that Trading Permit Holders routing complex orders directly to the COB may request that the complex orders initiate a COA on a class-by-class basis and Trading Permit Holders with resting complex orders on PAR may request that complex orders initiate a COA on an order-by-order basis.

[13] *See* Notice, *supra* note 3, at 13362.

[14] CBOE believes that permitting orders resting on PAR to initiate a COA is consistent with other CBOE rules. *See id.* at n. 15 and accompanying text (citing to CBOE Rule 6.53C(d), which, according to the Exchange, states that complex orders may be subject to a COA once on PAR, and CBOE Rule 6.53C, Interpretation and Policy .04(a), which, according to the Exchange, states that Trading Permit Holders with resting complex orders on PAR may request that complex orders initiate a COA).

[15] *See* Notice, *supra* note 3, at 13363.

[16] *See id.* at 13361.

[17] *See id.* at 13360–61. CBOE states that the System performs the parameter calculations after an execution against a market maker quote occurs in order to assure that all quotations are firm for their full size. *See id.* at 13361.

[18] *See id.*

not as a series of individual transactions, because each leg of the complex order is contingent on the other leg.[19] Thus, the System performs the QRM parameter calculations after the entire complex order executes against interest in the regular market. In contrast, if the legs of the complex order had been submitted to the regular market separately and without any complex order contingency, the System would perform the QRM parameter calculations after each leg executed against interest in the regular market. According to the Exchange, this differential treatment may result in market makers exceeding their risk parameters by a greater number of contracts when complex orders leg into the regular market.[20]

The Exchange believes that the potential risk to market makers of complex orders legging into the regular market limits the amount of liquidity that market makers are willing to provide in the regular market.[21] In particular, according to the Exchange, market makers may reduce the size of their quotations in the regular market because of the presence of these complex orders that are designed to circumvent QRM and risk the execution of the cumulative size of market makers' quotations across multiple series without market makers' being aware of these complex orders or having an opportunity to adjust their quotes.[22] Accordingly, the Exchange believes that reducing market maker risk in the regular market by requiring complex orders in Hybrid classes with three or more legs to be subject to a COA—which will allow market makers to react accordingly, including adjusting their quotes to avoid the circumvention of their QRM parameter settings—will benefit investors by encouraging market makers to provide additional liquidity in the regular market and enhance competition in those classes.[23] According to the Exchange, this potential benefit to investors far exceeds any ''perceived detriment'' to requiring certain complex orders to be subject to a COA prior to potential interaction with the leg markets.[24] The Exchange notes that complex orders with three or more legs will still have opportunities for execution through a COA, in the COB or in the leg markets if they do not execute at the end of the COA.[25]

In the Notice, the Exchange states that it will announce the implementation date of the proposed rule change in a Regulatory Circular to be published no later than 90 days following the effective date of this proposed rule change.[26] The Exchange also states that the implementation date will be no later than 180 days following the effective date of this proposed rule change.[27]

III. Summary of Comment Letters

As noted above, the Commission received two comments, both expressing support for the proposed rule change.[28] One commenter stated that it believes CBOE's proposal is a reasonable response to the problem of complex orders circumventing market makers QRM parameters.[29] The other commenter stated that it believes that the proposal will allow market makers to better rely on the Exchange's QRM to remove quotes when a market makers risk tolerance is exceed, which, according to the commenter, will allow market makers to provide quotations with large sizes and tight spreads.[30]

IV. Discussion and Commission Findings

After careful review, the Commission finds that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to a national securities exchange.[31] In particular, the Commission finds that the proposed rule change is consistent with Section 6(b)(5) of the Act,[32] which requires, among other things, that the rules of a national securities exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. The Commission notes that participating in a COA will provide complex orders with three or more legs an opportunity for price improvement through the auction mechanism. The Commission also notes that both commenters expressed support for the proposal.

V. Conclusion

It is therefore ordered, pursuant to Section 19(b)(2) of the Act,[33] that the proposed rule change (SR–CBOE–2014–017) is approved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[34]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21519 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

[19] *See id.*

[20] *See id.*

[21] *See* Notice, *supra* note 3, at 13362.

[22] *See id.*

[23] *See id.*

[24] *See id.*

[25] *See id.*

[26] *See* Notice, *supra* note 3, at 13363.

[27] *See id.*

[28] *See supra* note 6.

[29] *See* NYSE Letter, *supra* note 6, at 2.

[30] *See* Group One Letter, *supra* note 6, at 2.

[31] In approving this proposal, the Commission has considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

[32] 15 U.S.C. 78f(b)(5).

[33] 15 U.S.C. 78s(b)(2).

[34] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72990; File No. SR–CBOE–2014–068]

Self-Regulatory Organizations; Chicago Board Options Exchange, Incorporated; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to the Strike Setting Regimes for SPY and DIA Options

September 4, 2014.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that, on August 28, 2014, Chicago Board Options Exchange, Incorporated (the ''Exchange'' or ''CBOE'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend Interpretation .08 to Rule 5.5 (Series of Option Contracts Open for Trading) to modify the strike setting regimes for options on The Standard & Poor's Depository Receipts Trust (''SPY'') and The DIAMONDS Trust (''DIA''). The text of the proposed rule change is provided below. (additions are *italicized;* deletions are [bracketed])

* * * * *

Chicago Board Options Exchange, Incorporated Rules

* * * * *

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

Rule 5.5.—Series of Option Contracts Open for Trading

RULE 5.5. (a)–(e) No change.

. . . Interpretations and Policies:

.01–.07 No change.

.08

(a) Notwithstanding Interpretation and Policy .01 above, and except for options on Units covered under Interpretation and Policies .06 and .07 above, the interval between strike prices of series of options on Units, as defined under Interpretation and Policy .06 to Rule 5.3, will be $1 or greater where the strike price is $200 or less and $5.00 or greater where the strike price is greater than $200. For options on Units that are used to calculate a volatility index, the Exchange may open for trading $0.50 strike price intervals as provided for in Interpretation and Policy .19 to this Rule 5.5.

(b) Notwithstanding Interpretation and Policy .01 and Interpretation and Policy .08(a) above, the interval between strike prices of series of options on Units of the Standard & Poor's Depository Receipts Trust (''SPY'') and The DIAMONDS Trust (''DIA'') will be $1 or greater.

.09–.23 No change.

* * * * *

The text of the proposed rule change is also available on the Exchange's Web site (*http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx*), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend Interpretation and Policy .08 to Rule 5.5 to modify the strike setting regimes for SPY and DIA options. Specifically, the Exchange proposes to modify the interval setting regimes for SPY and DIA options to allow $1 strike price intervals above $200. The Exchange believes that the proposed rule change would make SPY and DIA options easier for investors and traders to use and more tailored to their investment needs. The Exchange's filing is substantially similar in all material respects to similar changes to Commentary .05 to NASDAQ OMX PHLX LLC Rule 1012 (Series of Options Open for Traded) that were recently proposed.[3]

The SPY and DIA exchange-traded funds (''ETFs'') are designed to roughly track the performance of the S&P 500 Index and Dow Jones Industrial Average (''DJIA'') with the price of SPY designed to roughly approximate 1/10th of the price of the S&P 500 Index and the price of DIA designed to roughly approximate 1/100th of the price of the DJIA. Accordingly, SPY strike prices reflect a value roughly equal to 1/10th of the value of the S&P 500 Index and DIA strike prices reflect a value roughly equal to 1/100th of the value of the DJIA with each having a multiplier of $100. For example, if the S&P 500 Index is at 1972.56, SPY options might have a value of approximately 197.26 with a notional value of $19,726. If the DJIA is at 16,569.98, DIA options may have a value of 165.70 with a notional value of $16,570. In general, SPY and DIA options provide retail investors and traders with the benefit of trading the broad market in a manageably sized contract. As options with an ETP underlying, SPY and DIA options are listed in the same manner as equity options under the Rules.

Under current Interpretation and Policy .08 to Rule 5.5, the interval between strike prices in series of options on ETPs, including SPY and DIA options will be $1 or greater where the strike price is $200 or less and $5.00 or greater where the strike price is greater than $200.'' In addition, under Rule 5.5(d)(5),

> The interval between strike prices on Short Term Option Series may be: (i) $0.50 or greater where the strike price is less than $75, and $1 or greater where the strike price is between $75 and $150 for all classes that participate in the Short Term Option Series Program; (ii) $0.50 for classes that trade in one dollar increments in non-Short Term Options and that participate in the Short Term Option Series Program; or (iii) $2.50 or greater where the strike price is above $150.

The Exchange's proposal seeks to narrow the strike price intervals to $1 for SPY and DIA options above $200, in effect matching the strike setting regime for strike intervals in these products below $200.

Currently, the S&P 500 Index is hovering close to 2000. The DJIA is hovering near 17000. As the option strike prices for SPY and DIA options have continued to appreciate, the Exchange has received Trading Permit Holder (''TPH'') requests to list additional strike prices in SPY and DIA options above $200. The S&P 500 Index is widely regarded as the best single gauge of large cap U.S. equities and the DJIA is the most popular, and is widely quoted as an indicator of stock prices and investor confidence in the securities market. As a result, individual investors often use S&P 500 Index- and DJIA-related products to diversify their portfolios and benefit from market trends—options on the SPY and DIA ETFs account for nearly 25% of all U.S. options trading volume. Moreover, the popularity of SPY and DIA options is reflected in the fact that they have options contracts reflecting monthly, quarterly, and weekly expiration cycles.[4] Accordingly, the Exchange believes that offering a wide range of S&P 500 Index- and DJIA-based options affords traders and investors important hedging and trading opportunities. The Exchange believes that not having the proposed $1 strike price intervals above $200 in SPY and DIA significantly constricts investors' hedging and trading possibilities.

The Exchange proposes to amend Interpretation and Policy .08 to Rule 5.5 to allow SPY and DIA options to trade in $1 increments above a strike price of $200. Specifically, the Exchange proposes to amend Interpretation and Policy .08 to Rule 5.5 to state that notwithstanding other provisions limiting the ability of the Exchange to list $1 increment strike prices on equity and ETF options above $200, the interval between strike prices of series of options on Units of SPY and DIA will be $1 or greater.[5] The Exchange believes

[3] *See* Securities and Exchange Act Release 34–72664 (July 24, 2014), 79 FR 44231 (July 30, 2014) (Notice of Filing of Proposed Rule Change, as Modified by Amendment No. 1, Relating to SPY and DIA Options) (SR–Phlx–2014–046).

[4] *See* Rule 5.5.

[5] The Exchange notes that the proposed rule change would also affect the strike setting regime of these products under the Short Term Option Series Program and permit the Exchange to list SPY and DIA Short Term Options in $0.50 increments above $200. Both SPY and DIA participate in the Short Term Option Series Program under Rule 5.5(d). Under Rule 5.5(d)(5), ''[t]he interval between strike prices on Short Term Option Series may be: (i) $0.50 or greater where the strike price is less than $75, and $1 or greater where the strike price is between $75 and $150 for all classes that participate in the Short Term Option Series Program; (ii) $0.50 for classes that trade in one dollar increments in non-Short Term Options and that participate in the Short Term Option Series Program; or (iii) $2.50 or greater where the strike price is above $150.'' Accordingly, if the Exchange were to adopt the

that by having smaller strike intervals in SPY and DIA, investors would have more efficient hedging and trading opportunities due to the higher $1 interval ascension. The proposed $1 intervals, particularly above the $200 strike price, will result in having at-the-money series based upon the underlying SPY or DIA moving less than 1%. The Exchange believes that the proposed strike setting regime is in line with the slower movements of broad-based indices. Furthermore, the proposed $1 intervals would allow currently employed option trading strategies (such as, for example, risk reduction/hedging strategies using SPY weekly options), to remain viable. Considering the fact that $1 intervals already exist below the $200 price point and that SPY and DIA are approaching the $200 level, the Exchange believes that continuing to maintain the artificial $200 level (above which intervals increase 500% to $5), would have a negative effect on investing, trading and hedging opportunities, and volume. The Exchange believes that the continued demand for highly liquid options such as options on SPY and DIA, and the investing, trading, and hedging opportunities they represent, far outweighs any potential negative impact of allowing SPY and DIA options to trade in more finely tailored intervals above the $200 price point.

The proposed strike setting regime would permit strikes to be set to more closely reflect values in the underlying S&P 500 Index and DJIA and allow investors and traders to roll open positions from a lower strike to a higher strike in conjunction with the price movement of the underlying. Under the current rule, where the next higher available series would be $5 away above a $200 strike price, the ability to roll such positions is effectively negated. Accordingly, to move a position from a $200 strike to a $205 strike under the current rule, an investor would need for the underlying product to move 2.5%, and would not be able to execute a roll up until such a large movement occurred. With the proposed rule change, however, the investor would be in a significantly safer position of being able to roll his open options position from a $200 to a $201 strike price, which is only a 0.5% move for the underlying. The proposed rule change will allow the Exchange to better respond to customer demand for SPY strike prices more precisely aligned with current S&P 500 Index values and allow the Exchange to respond similarly with additional $1 interval strike prices above $200 in DIA should the DJIA approach corresponding levels. The Exchange believes that the proposed rule change, like the other strike price programs currently offered by the Exchange, will benefit investors by providing investors the flexibility to more closely tailor their investment and hedging decisions using SPY and DIA options.

By allowing series of SPY and DIA options to be listed in $1 intervals between strike prices over $200, the proposal will moderately augment the potential total number of options series available on the Exchange. However, the Exchange has analyzed its capacity and represents that it and the Options Price Reporting Authority (''OPRA'') have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange also believes that Trading Permit Holders will not have a capacity issue due to the proposed rule change. In addition, the Exchange represents that it does not believe that this expansion with cause fragmentation of liquidity.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Act and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[6] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[7] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[8] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

In particular, the proposed rule change would add consistency to the options markets and allow investors to more easily use SPY and DIA options. Moreover, the proposed rule change would allow investors to better trade and hedge positions in SPY and DIA options where the strike price is greater than $200, and ensure that SPY and DIA options investors are not at a disadvantage simply because of the strike price.

The Exchange also believes the proposed rule change is consistent with Section 6(b)(1) of the Act, which provides that the Exchange be organized and have the capacity to be able to carry out the purposes of the Act and the rules and regulations thereunder, and the rules of the Exchange. The rule change proposal allows the Exchange to respond to customer demand to allow SPY and DIA options to trade in $1 intervals above a $200 strike price. The Exchange does not believe that the proposed rule would create additional capacity issues or affect market functionality.

As noted above, ETF options trade in wider $5 intervals above a $200 strike price, whereby options at or below a $200 strike price trade in $1 intervals. This creates a situation where contracts on the same option class effectively may not be able to execute certain strategies such as, for example, rolling to a higher strike price, simply because of the arbitrary $200 strike price above which options intervals increase by 500%. This proposal remedies the situation by establishing an exception to the current ETF interval regime, for SPY and DIA options only, to allow such options to trade in $1 or greater intervals at all strike prices.

The Exchange believes that the proposed rule change, like other strike price programs currently offered by the Exchange, will benefit investors by giving them increased flexibility to more closely tailor their investment and hedging decisions. Moreover, the proposed rule change is consistent with changes proposed by other exchanges.[9]

With regard to the impact of this proposal on system capacity, the Exchange has analyzed its capacity and represents that it and OPRA have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal.

proposed rule change, SPY and DIA options would trade in $1 strike price increments above $200 increments and thus, be subject to the parameters described in Rule 5.5(d)(5)(ii), which permit the listing of $0.50 strike prices above $200 under the Short Term Options Program.

[6] 15 U.S.C. 78f(b).

[7] 15 U.S.C. 78f(b)(5).

[8] *Id.*

[9] *See* Securities and Exchange Act Release 34–72664 (July 24, 2014), 79 FR 44231 (July 30, 2014) (Notice of Filing of Proposed Rule Change, as Modified by Amendment No. 1, Relating to SPY and DIA Options) (SR–Phlx–2014–046).

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. Rather, the Exchange believes that the proposed rule change will result in additional investment options and opportunities to achieve the investment and trading objectives of market participants seeking efficient trading and hedging vehicles, to the benefit of investors, market participants, and the marketplace in general. Specifically, the Exchange believes that SPY and DIA option investors and traders will significantly benefit from the availability of finer strike price intervals above a $200 price point. Furthermore, the Exchange's filing is substantially similar in all material respects to, and consistent with, similar changes to Commentary .05 to NASDAQ OMX PHLX LLC Rule 1012 (Series of Options Open for Traded) that were recently proposed.[10] As such, the Exchange believes that the proposed rule change is essential for intermarket competitive purposes and to promote a free and open market for the benefit of investors and traders.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the proposed rule change does not (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act[11] and Rule 19b–4(f)(6) thereunder.[12]

The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Exchange stated that waiver of this requirement would allow the Exchange to respond to current customer demand for strike prices in SPY options and more effectively tailor their investing, trading, and hedging decisions in respect of SPY and DIA options by using finer $1 increments. The Exchange also stated that, given the current level of the S&P 500 Index, the Exchange believes that it is important to be able to list the requested strikes as soon as possible so that investors have the hedging tools they need given the current market conditions. For these reasons, the Commission believes that the proposed rule change presents no novel issues and that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest; and will allow the Exchange to remain competitive with other exchanges. Therefore, the Commission designates the proposed rule change to be operative upon filing.[13]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–CBOE–2014–068 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–CBOE–2014–068. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml).* Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–CBOE–2014–068 and should be submitted on or before October 1, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[14]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21524 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

[10] *Id.*

[11] 15 U.S.C. 78s(b)(3)(A).

[12] 17 CFR 240.19b–4(f)(6). As required under Rule 19b–4(f)(6)(iii), the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission.

[13] For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

[14] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72992; File No. SR–BOX–2014–20]

Self-Regulatory Organizations; BOX Options Exchange LLC; Notice of Filing of Proposed Rule Change To Amend Interpretative Material to Rule 5050 (Series of Options Contracts Open for Trading) To Allow $1 or Greater Strike Price Intervals for Options on the SPDR® S&P 500® Exchange Traded Fund (''SPY'') and the SPDR® Dow Jones® Industrial Average Exchange Traded Fund (''DIA'')

September 4, 2014.

Pursuant to Section 19(b)(1) [1] of the Securities Exchange Act of 1934 (the ''Act'') [2] and Rule 19b–4 thereunder,[3] notice is hereby given that, on September 3, 2014, BOX Options Exchange LLC (the ''Exchange'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend interpretative material to Rule 5050 (Series of Options Contracts Open for Trading) to allow $1 or greater strike price intervals for options on the SPDR® S&P 500® Exchange Traded Fund (''SPY'') and the SPDR® Dow Jones® Industrial Average Exchange Traded Fund (''DIA''). The text of the proposed rule change is available from the principal office of the Exchange, at the Commission's Public Reference Room and also on the Exchange's Internet Web site at *http://boxexchange.com.*

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The self-regulatory organization has prepared summaries, set forth in Sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend interpretive material to Rule 5050 by modifying the interval setting regime for SPY and DIA options listed on the SPDR S&P 500 Exchange Traded Fund (''ETF'') and the SPDR Dow Jones Industrial Average ETF, respectively, to allow $1 or greater strike price intervals.[4] Through this filing, the Exchange intends to make SPY and DIA options more tailored and easier for investors and traders to use. This is a competitive filing that is based on a proposal recently submitted by NASDAQ OMX PHLX LLC (''Phlx'').[5]

Under current Rule IM–5050–1, the interval of strike prices of series of options on ETFs is $1 or greater where the strike price is 200 or less and $5 or greater where the strike price is more than 200.[6] The Proposal seeks to narrow those strike intervals to $1 apart for SPY and DIA options, in effect matching the interval for these products to ETF option strike prices at or below 200.

The underlying prices for SPY and DIA are approaching the 200 price point. By the end of June 2014, for example, SPY was trading at more than $195 per share and DIA was trading at more than $168 per share. As the option strike prices continue to appreciate, investor and member demands to list additional SPY and DIA option series continue to increase. SPY is the most heavily traded and liquid exchange-traded product in the U.S., and SPY options represent 13% of the total option volume in the U.S. DIA options represent less than 1% of the options volume in the U.S. Moreover, the popularity of DIA and SPY options is reflected in the fact that they have options contracts reflecting monthly, quarterly, and weekly expiration cycles.[7] Not having the proposed $1 intervals above a 200 strike price will significantly limit investors' hedging and trading possibilities, particularly when it comes to executing strategies that are effective in $1 intervals; and may, as a result, constrict trading and hedging activity. The Exchange therefore proposes to amend IM–5050–1 to allow SPY and DIA options to trade in $1 increments.

Specifically, the Exchange proposes to amend IM–5050–1(b) to state that notwithstanding any other provision regarding the interval of strike prices of series of options on ETFs in Rule 5050, the interval of strike prices on SPY and DIA options will be $1 or greater. By having smaller strike intervals in SPY and DIA, investors will have more efficient hedging and trading opportunities due to the higher $1 interval ascension. The proposed $1 intervals, particularly above a 200 strike price, will result in having at-the-money series based upon the underlying SPY or DIA moving less than 1%, which falls in line with slower price movements of a broad-based index. Furthermore, the proposed $1 intervals will allow currently employed option trading strategies (such as, for example, risk reduction/hedging strategies using SPY weekly options) to remain in play. Considering that $1 intervals already exist below the 200 price point and that SPY and DIA are approaching the 200 level, continuing to maintain the artificial 200 level (above which intervals increase 500%, to $5), will have a negative effect on investing, trading and hedging opportunities and volume. The continued demand for highly liquid options such as SPY and DIA, and the investing, trading, and hedging opportunities they represent, far outweighs any potential negative impact of allowing SPY and DIA options to trade in more finely tailored intervals above a 200 price point.

With the proposal, for example, investors and traders would be able to roll open positions from a lower strike to a higher strike in conjunction with the price movement of the underlying. Under the current rule, where the next higher available series would be $5 away above a 200 strike price, the ability to roll such positions is effectively negated. Thus, to move a position from a 200 strike to a 205 strike under the current rule, an investor would need for the underlying product to move 2.5%, and would not be able to execute a roll up until such a large movement occurred. With the proposed rule change, however, the investor would be in a significantly safer position of being able to roll his open options position from a 200 to a 201

[1] 15 U.S.C. 78s(b)(1).

[2] 15 U.S.C. 78a.

[3] 17 CFR 240.19b–4.

[4] The SPDR S&P 500 ETF is based on the broad-based S&P 500 Index, and the SPDR Dow Jones Industrial Average ETF is based on the Dow Jones Industrial Average.

[5] *See* Securities Exchange Act Release No. 72949 (August 29, 2014) (SR–Phlx–2014–46) (Order Granting Approval of Proposed Rule Change, as Modified by Amendment No. 1, Relating to SPY and DIA Options).

[6] *See* IM–5050–1(b).

[7] For rules regarding quarterly options and weekly options (also known as Short Term Options, *see* IM–5050–4 and IM–5050–6.

strike price, which is only a 0.5% move for the underlying.

By allowing SPY and DIA options in $1 intervals over a 200 strike price, the proposal will moderately augment the total number of options series available on the Exchange. However, the Exchange has analyzed its capacity and represents that it and the Options Price Reporting Authority (''OPRA'') have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal. The Exchange also represents that it does not believe this expansion will cause fragmentation of liquidity. The Exchange's beliefs are supported by the limited nature of the proposal, which applies to two symbols rather than to all ETF products. Moreover, while under the current rule-set there is ample liquidity, it is constricted above 200. This proposal only enhances liquidity at more rational strike intervals necessary to benefit investors as the stock market improves in value.

The Exchange believes that the proposed rule change, like the other strike price programs currently offered by the Exchange, will benefit investors by giving them more flexibility to more closely tailor their investment and hedging decisions by allowing SPY and DIA options to trade in finer $1 intervals.

2. Statutory Basis

The Exchange believes that the proposal is consistent with the requirements of Section 6(b) of the Securities Exchange Act of 1934 (the ''Act''),[8] in general, and Section 6(b)(5) of the Act,[9] in particular, in that it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest.

In particular, the proposed rule change would add consistency to the SPY and DIA options markets and allow investors to use SPY and DIA options more easily and effectively. Moreover, the proposed rule change would allow investors and traders, whether big or small, to better trade and hedge positions in SPY and DIA options where the strike price is greater than 200, and ensure that SPY and DIA options investors and traders are not at a disadvantage simply because of the strike price.

The Exchange also believes the proposed rule change is consistent with Section 6(b)(1) of the Act,[10] which provides that the Exchange be organized and have the capacity to be able to carry out the purposes of the Act and the rules and regulations thereunder, and the rules of the Exchange. The rule change proposal allows the Exchange to respond to customer demand to allow SPY and DIA options to trade in $1 intervals above a 200 strike price. The Exchange does not believe that the proposed rule would create additional capacity issues or affect market functionality.

As noted above, ETF options trade in wider $5 intervals above a 200 strike price, whereby options at or below a 200 strike price trade in $1 intervals. This creates a situation where contracts on the same option class, namely SPY and DIA options, effectively may not be able to execute certain strategies such as, for example, rolling to a higher strike price, simply because of the arbitrary 200 strike price above which options intervals increase by 500%. This proposal remedies the situation by establishing an exception to the current ETF interval regime, for SPY and DIA options only, to allow such options to trade in $1 or greater intervals at all strike prices.

The Exchange believes that the proposed rule change, like other strike price programs currently offered by the Exchange, will benefit investors by giving them increased flexibility to more closely tailor their investment and hedging decisions. Moreover, the proposed rule change is consistent with changes proposed by at least one other exchange.[11]

With regard to the impact of this proposal on system capacity, the Exchange has analyzed its capacity and represents that it and OPRA have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. In this regard and as indicated above, the Exchange notes that the rule change is being proposed as a competitive response to a filing submitted by Phlx.[12] The Exchange believes that the proposed rule change is necessary to permit fair competition among the options exchange with respect to strike intervals for SPY and DIA options. The Exchange believes that the proposed rule change will result in additional investment options and opportunities to achieve the investment and trading objectives of market participants seeking efficient trading and hedging vehicles, to the benefit of investors, market participants, and the marketplace in general. Specifically, the Exchange believes that SPY and DIA option investors and traders will significantly benefit from the availability of finer strike price intervals above a 200 price point.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange has neither solicited nor received comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the proposed rule change does not (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act[13] and Rule 19b–4(f)(6) thereunder.[14]

The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Exchange stated that waiver of this requirement will ensure fair

[8] 15 U.S.C. 78f(b).

[9] 15 U.S.C. 78f(b)(5).

[10] 15 U.S.C. 78f(b)(1).

[11] *See, e.g.,* Securities Exchange Act Release No. 72482 (June 26, 2014), 79 FR 37825 (July 2, 2014) (SR–CBOE–2014–051) (notice of filing and immediate effectiveness modifying the strike price regime for Mini-S&P 500 Index (XSP) options).

[12] *See supra* note 5.

[13] 15 U.S.C. 78s(b)(3)(A).

[14] 17 CFR 240.19b–4(f)(6). As required under Rule 19b–4(f)(6)(iii), the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission.

competition among the exchanges by allowing the Exchange to establish smaller strike intervals in SPY and DIA options with a strike price above 200 at the same time as another options exchange. For these reasons, the Commission believes that the proposed rule change presents no novel issues and that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest; and will allow the Exchange to remain competitive with other exchanges. Therefore, the Commission designates the proposed rule change to be operative upon filing.[15]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov*. Please include File Number SR–BOX–2014–20 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–BOX–2014–20. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–BOX–2014–20 and should be submitted on or before October 1, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[16]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21526 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

[15] For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

[16] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72994; File No. SR–BX–2014–044]

Self-Regulatory Organizations; NASDAQ OMX BX, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to SPY and DIA Options

September 4, 2014.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 [2] thereunder, notice is hereby given that, on September 2, 2014, NASDAQ OMX BX, Inc. (''Exchange'' or ''BX'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

BX is filing with the Commission a proposal to amend Chapter IV, Section 6 (Series of Options Contracts Open for Trading) to allow $1 or greater strike price intervals for options on the SPDR® S&P 500® Exchange Traded Fund (''SPY'') and the SPDR® Dow Jones® Industrial Average Exchange Traded Fund (''DIA'').[3]

The text of the proposed rule change is also available on the Exchange's Web site at *http://nasdaqomxbx.cchwallstreet.com,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of this proposed rule change is to amend Chapter IV, Section 6 by modifying the interval setting regime for SPY and DIA options listed on the SPDR S&P 500 Exchange Traded Fund (''ETF'') and the SPDR Dow Jones Industrial Average ETF, respectively, to allow $1 or greater strike price intervals.[4] Through this filing, the Exchange intends to make SPY and DIA options more tailored and easier for investors and traders to use.

The proposed rule change is based on the recent Commission approval of a proposal to amend Commentary.05 to NASDAQ OMX PHLX LLC (''Phlx'')

[3] S&P®, S&P 500®, Standard & Poor's®, and SPDR® are registered trademarks of Standard & Poor's® Financial Services LLC. Dow Jones®, DJIA℠, and Dow Jones Industrial Average℠ are registered trade and service marks of Dow Jones® Trademark Holdings LLC.

[4] The SPDR S&P 500 ETF is based on the broad-based S&P 500 Index, and the SPDR Dow Jones Industrial Average ETF is based on the Dow Jones Industrial Average.

Rule 1012 to allow SPY and DIA options to trade in $1 or greater increments.[5]

Under current Chapter IV, Supplementary Material .01 to Section 6, the interval of strike prices of series of options on ETFs is $1 or greater where the strike price is 200 or less and $5 or greater where the strike price is more than 200.[6] The Proposal seeks to narrow those strike intervals to $1 apart for SPY and DIA options, in effect matching the interval for these products to ETF option strike prices at or below 200.

The prices for SPY and DIA options [sic] are approaching the 200 price point. By the end of June 2014, for example, SPY was trading at more than $195 per share and DIA was trading at more than $168 per share.[7] As the option strike prices continue to appreciate, investor and member demands to list additional SPY and DIA option series continue to increase. SPY is the most heavily traded and liquid exchange-traded product in the U.S., and SPY options represent 13% of the total option volume in the U.S. and 1% of the options volume on the Exchange. DIA options represent 1% of the options volume on the Exchange and less than 1% of the options volume in the U.S. Moreover, the popularity of DIA and SPY options is reflected in the fact that they have options contracts reflecting monthly, quarterly, and weekly expiration cycles.[8] Not having the proposed $1 intervals above a 200 strike price will significantly limit investors' hedging and trading possibilities, particularly when it comes to executing strategies that are effective in $1 intervals; and may, as a result, constrict trading and hedging activity. The Exchange therefore proposes to amend Chapter IV, Supplementary Material .01 to Section 6 to allow SPY and DIA options to trade in $1 increments.

Specifically, the Exchange proposes to add Chapter IV, Supplementary Material .01(c) to Section 6[9] to state that notwithstanding any other provision regarding the interval of strike prices of series of options on ETFs in the rule, the interval of strike prices on SPY and DIA options will be $1 or greater. By having smaller strike intervals in SPY and DIA, investors will have more efficient hedging and trading opportunities due to the higher $1 interval ascension. The proposed $1 intervals, particularly above a 200 strike price, will result in having at-the-money series based upon the underlying SPY or DIA moving less than 1%, which falls in line with slower price movements of a broad-based index. Furthermore, the proposed $1 intervals will allow currently employed option trading strategies (such as, for example, risk reduction/hedging strategies using SPY weekly options) to remain in play. Considering that $1 intervals already exist below the 200 price point and that SPY and DIA are approaching the 200 level, continuing to maintain the artificial 200 level (above which intervals increase 500%, to $5), will have a negative effect on investing, trading and hedging opportunities and volume. The continued demand for highly liquid options such as SPY and DIA, and the investing, trading, and hedging opportunities they represent, far outweighs any potential negative impact of allowing SPY and DIA options to trade in more finely tailored intervals above a 200 price point.

With the proposal, for example, investors and traders would be able to roll open positions from a lower strike to a higher strike in conjunction with the price movement of the underlying. Under the current rule, where the next higher available series would be $5 away above a 200 strike price, the ability to roll such positions is effectively negated. Thus, to move a position from a 200 strike to a 205 strike under the current rule, an investor would need for the underlying product to move 2.5%, and would not be able to execute a roll up until such a large movement occurred. With the proposed rule change, however, the investor would be in a significantly safer position of being able to roll his open options position from a 200 to a 201 strike price, which is only a 0.5% move for the underlying.

By allowing SPY and DIA options in $1 intervals over a 200 strike price, the proposal will moderately augment the total number of options series available on the Exchange. However, the Exchange has analyzed its capacity and represents that it and the Options Price Reporting Authority (''OPRA'') have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal. The Exchange also represents that it does not believe this expansion will cause fragmentation of liquidity. The Exchange's beliefs are supported by the limited nature of the proposal, which applies to two symbols rather than to all ETF products. Moreover, while under the current rule-set there is ample liquidity, it is constricted above 200. This proposal only enhances liquidity at more rational strike intervals necessary to benefit investors as the stock market improves in value. The Exchange believes that the proposed rule change, like the other strike price programs currently offered by the Exchange, will benefit investors by giving them more flexibility to more closely tailor their investment and hedging decisions by allowing SPY and DIA options to trade in finer $1 intervals.

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder that are applicable to a national securities exchange, and, in particular, with the requirements of Section 6(b) of the Act.[10] In particular, the proposal is consistent with Section 6(b)(5) of the Act,[11] because it is designed to promote just and equitable principles of trade, remove impediments to and perfect the mechanisms of a free and open market and a national market system and, in general, to protect investors and the public interest.

In particular, the proposed rule change would add consistency to the SPY and DIA options markets and allow investors to use SPY and DIA options more easily and effectively. Moreover, the proposed rule change would allow investors and traders, whether big or small, to better trade and hedge positions in SPY and DIA options where the strike price is greater than 200, and ensure that SPY and DIA options investors and traders are not at a disadvantage simply because of the strike price.

The Exchange also believes the proposed rule change is consistent with Section 6(b)(1) of the Act,[12] which provides that the Exchange be organized and have the capacity to be able to carry out the purposes of the Act and the rules and regulations thereunder, and the rules of the Exchange. The rule change proposal allows the Exchange to respond to customer demand to allow SPY and DIA options to trade in $1 intervals above a 200 strike price. The

[5] *See* Securities Exchange Act Release No. 72949 (August 29, 2014) (SR–Phlx–2014–46) (approval order).

[6] *See* Chapter IV, Supplementary Material .01(b) to Section 6.

[7] On August 25, 2014, SPY traded and closed above $200 for the first time. The SPY closing price on August 25th was $200.20.

[8] For rules regarding quarterly options and weekly options (also known as Short Term Options), *see* Chapter IV, Supplementary Material .04 and Supplementary Material .07 to Section 6, respectively.

[9] Current Supplementary Material .01(c), (d), (e) to Section 6 would be re-numbered as Supplementary Material .01(d), (e), (f) to Section 6, respectively.

[10] 15 U.S.C. 78f(b).

[11] 15 U.S.C. 78f(b)(5).

[12] 15 U.S.C. 78f(b)(1).

Exchange does not believe that the proposed rule would create additional capacity issues or affect market functionality.

As noted above, ETF options trade in wider $5 intervals above a 200 strike price, whereby options at or below a 200 strike price trade in $1 intervals. This creates a situation where contracts on the same option class, namely SPY and DIA options, effectively may not be able to execute certain strategies such as, for example, rolling to a higher strike price, simply because of the arbitrary 200 strike price above which options intervals increase by 500%. This proposal remedies the situation by establishing an exception to the current ETF interval regime, for SPY and DIA options only, to allow such options to trade in $1 or greater intervals at all strike prices.

The Exchange believes that the proposed rule change, like other strike price programs currently offered by the Exchange, will benefit investors by giving them increased flexibility to more closely tailor their investment and hedging decisions. Moreover, the proposed rule change is consistent with changes proposed by at least one other exchange.[13]

With regard to the impact of this proposal on system capacity, the Exchange has analyzed its capacity and represents that it and OPRA have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. To the contrary, the Exchange believes that the proposed rule change will result in additional investment options and opportunities to achieve the investment and trading objectives of market participants seeking efficient trading and hedging vehicles, to the benefit of investors, market participants, and the marketplace in general. Specifically, the Exchange believes that SPY and DIA option investors and traders will significantly benefit from the availability of finer strike price intervals above a 200 price point.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the proposed rule change does not (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act[14] and Rule 19b–4(f)(6) thereunder.[15]

The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Exchange stated that waiver of this requirement would allow the Exchange to implement the proposed rule change as soon as possible and thereby harmonize its rules regarding SPY and DIA options intervals with the rules of other markets. The Exchange also stated that waiver would allow market participants to more effectively tailor their investing, trading, and hedging decisions in respect of SPY and DIA options by using finer $1 increments. For these reasons, the Commission believes that the proposed rule change presents no novel issues and that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest; and will allow the Exchange to remain competitive with other exchanges. Therefore, the Commission designates the proposed rule change to be operative upon filing.[16]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov*. Please include File Number SR–BX–2014–044 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–BX–2014–044. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make

[13] *See* Securities Exchange Act Release No. 72949 (August 29, 2014) (SR–Phlx–2014–46) (approval order). Moreover, the Exchange has noted that other options markets have filed similar proposals to modify the strike price (intervals) regime for specific options. *See, e.g.,* Securities Exchange Act Release No. 72482 (June 26, 2014), 79 FR 37825 (July 2, 2014) (SR–CBOE–2014–051) (notice of filing and immediate effectiveness modifying the strike price regime for Mini-S&P 500 Index (XSP) options).

[14] 15 U.S.C. 78s(b)(3)(A).

[15] 17 CFR 240.19b–4(f)(6). As required under Rule 19b–4(f)(6)(iii), the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission.

[16] For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

available publicly. All submissions should refer to File Number SR–BX–2014–044 and should be submitted on or before October 1, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[17]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21528 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72987; File No. SR–NASDAQ–2014–020]

Self-Regulatory Organizations; The NASDAQ Stock Market LLC; Notice of Designation of a Longer Period for Commission Action on Proceedings To Determine Whether To Approve or Disapprove a Proposed Rule Change Relating To Listing and Trading of Exchange-Traded Managed Fund Shares

September 4, 2014.

On February 26, 2014, The NASDAQ Stock Market LLC (''Nasdaq'' or ''Exchange'') filed with the Securities and Exchange Commission (''Commission''), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act'') [1] and Rule 19b–4 thereunder,[2] a proposed rule change to adopt Nasdaq Rule 5745, which would govern the listing and trading of Exchange-Traded Managed Fund Shares (''ETMF Shares''), and to amend related references under Nasdaq Rules 4120, 5615, IM–5615–4, and 5940. The proposed rule change was published for comment in the **Federal Register** on March 12, 2014.[3] The Commission received four comment letters on the proposal.[4] On April 23, 2014, pursuant to Section 19(b)(2) of the Act,[5] the Commission designated a longer period within which to either approve the proposed rule change, disapprove the proposed rule change, or institute proceedings to determine whether to disapprove the proposed rule change.[6] On June 9, 2014, the Commission instituted proceedings under Section 19(b)(2)(B) of the Act [7] to determine whether to approve or disapprove the proposed rule change.[8] In response to the Order Instituting Proceedings, the Commission received one additional comment letter on the proposal.[9]

Section 19(b)(2) of the Act [10] provides that, after initiating disapproval proceedings, the Commission shall issue an order approving or disapproving the proposed rule change not later than 180 days after the date of publication of notice of filing of the proposed rule change. The Commission may extend the period for issuing an order approving or disapproving the proposed rule change, however, by not more than 60 days if the Commission determines that a longer period is appropriate and publishes the reasons for such determination. The proposed rule change was published for notice and comment in the **Federal Register** on March 12, 2014.[11] The 180th day after publication of the notice of the filing of the proposed rule change in the **Federal Register** is September 8, 2014, and the 240th day after publication of the notice of the filing of the proposed rule change in the **Federal Register** is November 7, 2014.

The Commission finds it appropriate to designate a longer period within which to issue an order approving or disapproving the proposed rule change so that it has sufficient time to consider the proposed rule change, including the matters raised in the comment letters to the proposed rule change.

Accordingly, the Commission, pursuant to Section 19(b)(2) of the Act,[12] designates November 7, 2014 as the date by which the Commission shall either approve or disapprove the proposed rule change (File No. SR–NASDAQ–2014–020).

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[13]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21520 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

[17] 17 CFR 200.30–3(a)(12).

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 71657 (Mar. 6, 2014), 79 FR 14092.

[4] *See* Letters to the Commission from Christopher Davis, President, Money Management Institute, dated March 27, 2014; Robert Tull, President, Robert Tull & Co., dated March 31, 2014; Avi Nachmany, Co-Founder, Director of Research, E.V.P, Strategic Insight, dated April 1, 2014; and Eric Noll, President and Chief Executive Officer, ConvergEx Group, LLC, dated April 1, 2014.

[5] 15 U.S.C. 78s(b)(2).

[6] *See* Securities Exchange Act Release No. 72007, 79 FR 24045 (Apr. 29, 2014). The Commission determined that it was appropriate to designate a longer period within which to take action on the proposed rule change so that it had sufficient time to consider the proposed rule change. Accordingly, the Commission designated June 10, 2014 as the date by which it should approve, disapprove, or institute proceedings to determine whether to disapprove the proposed rule change.

[7] 15 U.S.C. 78s(b)(2)(B).

[8] *See* Securities Exchange Act Release No. 72350, 79 FR 33959 (Jun. 13, 2014) (''Order Instituting Proceedings''). Specifically, the Commission instituted proceedings to allow for additional analysis of the proposed rule change's consistency with Section 6(b)(5) of the Act, which requires, among other things, that the rules of a national securities exchange be ''designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade,'' and ''to protect investors and the public interest.'' *See id.*

[9] *See* Letter to the Commission from Thomas E. Faust, Jr., Chairman and Chief Executive Officer, Eaton Vance Corporation, dated July 3, 2014.

[10] 15 U.S.C. 78s(b)(2).

[11] *See supra* note 3 and accompanying text.

[12] 15 U.S.C. 78s(b)(2).

[13] 17 CFR 200.30–3(a)(57).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72988; File No. SR–MIAX–2014–46]

Self-Regulatory Organizations; Miami International Securities Exchange LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fee Schedule

September 4, 2014.

Pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act'') [1] and Rule 19b–4 thereunder,[2] notice is hereby given that on August 25, 2014, Miami International Securities Exchange LLC (''MIAX'' or ''Exchange'') filed with the Securities and Exchange Commission (''Commission'') a proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange is filing a proposal to amend its Fee Schedule.

The text of the proposed rule change is available on the Exchange's Web site at *http://www.miaxoptions.com/filter/wotitle/rule_filing,* at MIAX's principal office, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend its Fee Schedule to: (i) Amend the MIAX Market Maker sliding scale to change the volume threshold calculations from aggregate numbers to percentages of total national Market Maker volume; (ii) increase the transaction fees for MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms by $0.02 per contract; and (iii) provide for additional incentives for achieving certain Priority Customer Rebate Program volume tiers. The proposed changes are based on the similar fees of another competing options exchange.[3]

Volume Tiers

The Exchange proposes to amend the MIAX Market Maker sliding scale to change the volume threshold calculations from aggregate numbers to percentages of total national Market Maker volume of any options classes with traded volume on MIAX during the calendar month. The Exchange notes that the sliding fee scale for MIAX Market Makers structured on contract volume thresholds is based on the substantially similar fees of the CBOE.[4] By amending the volume tier calculations, the sliding scale will more closely align with that of CBOE, which also currently uses a substantially similar volume threshold calculation based on percentages of total national Market Maker volume of any options classes that trade on the exchange during the calendar month. The Market Maker sliding scale will continue to apply to MIAX Market Maker (RMM, LMM, DLMM, PLMM, DPLMM) transaction fees in all products except mini-options. MIAX Market Makers will continue to be assessed a $0.02 per executed contract fee for transactions in mini-options.

The Exchange believes the proposed sliding scale is objective in that the fee reductions are based solely on reaching stated volume thresholds. The specific volume thresholds of the tiers were set based upon business determinations and an analysis of current volume levels. The specific volume thresholds and rates were set in order to encourage MIAX Market Makers to reach for higher tiers. The Exchange believes that the proposed changes to the tiered fee schedule may incent firms to display their orders on the Exchange and increase the volume of contracts traded here.

Options Transaction Fees

The Exchange proposes to increase the transaction fees for MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms by $0.02 per contract. Specifically, the Exchange proposes to increase transaction fees for each of the volume tiers for MIAX Market Makers by $0.02. The Exchange will also increase the transaction fees for Public Customers that are not a Priority Customer and Firms from $0.25 to $0.27 per contract. Further, the Exchange will increase the transaction fees for Non-MIAX Market Makers and Non-Member Broker-Dealers from $0.45 to $0.47. The Exchange believes that these fee increases will permit the Exchange to incentivize market participants by offering other incentives to lower prices as described herein.

Priority Customer Rebate Incentives

The Exchange proposes to offer MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms the opportunity to reduce transaction fees by $0.02 per contract in standard options if the Member or its affiliates of at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A, qualifies in a given month for Priority Customer Rebate Program volume tiers 3, 4, or 5 in the Fee Schedule.[5] Specifically, any Member or its affiliates of at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A, that qualifies for Priority Customer Rebate Program volume tiers 3, 4, or 5 and is a MIAX Market Maker will be assessed $0.15 per contract for tier 1, $0.10 per contract for tier 2, $0.05 per contract for tier 3, and $0.03 per contract for tier 4 for transactions in standard options in lieu of the applicable transaction fees in the Market Maker sliding scale. In addition, any Member or its affiliates of at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A, that qualifies for Priority Customer Rebate Program volume tiers 3, 4, or 5 and is a Public Customers that are not a Priority Customer or Firm will be assessed $0.25 per contract for standard options. Further, any Member or its affiliates of at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A, that qualifies for Priority Customer Rebate Program volume tiers 3, 4, or 5 and is a Non-MIAX Market Makers or Non-Member Broker-Dealers will be assessed $0.45 per contract for standard options.

The Exchange believes that these incentives will encourage MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms to transact a greater number of orders on the Exchange.

The Exchange proposes to implement the new transaction fees beginning September 1, 2014.

2. Statutory Basis

The Exchange believes that its proposal to amend its fee schedule is consistent with Section 6(b) of the Act[6] in general, and furthers the objectives of Section 6(b)(4) of the Act[7] in particular, in that it is an equitable allocation of reasonable fees and other charges among Exchange members.

The proposed changes to the volume calculations for the sliding scale are reasonable, equitable, and not unfairly discriminatory. The proposed volume discount fee structure is not discriminatory in that all MIAX Market Makers are eligible to submit (or not submit) liquidity, and may do so at their discretion in the daily volumes they choose during the course of the billing period. All similarly situated MIAX Market Makers are subject to the same fee structure, and access to the Exchange is offered on terms that are not unfairly discriminatory. Volume based discounts have been widely adopted by options and equities markets, and are equitable because they are open to all MIAX Market Makers on an equal basis and provide discounts that are reasonably related to the value of an exchange's market quality associated with higher volumes. The

[3] *See* NASDAQ OMX PHLX LLC Pricing Schedule, Section II. *See also* Securities Exchange Act Release Nos. 71716 (March 13, 2014), 79 FR 71716 (March 19, 2014) (SR–PHLX–2014–14); 72395 (June 16, 2014), 79 FR 35391 (SR–PHLX–2014–38).

[4] *See* Securities Exchange Act Release Nos. 55193 (January 30, 2007), 72 FR 5476 (February 6, 2007) (SR–CBOE–2006–111); 58321 (August 6, 2008), 73 FR 46955 (SR–CBOE–2008–78); 71295 (January 14, 2014), 79 FR 3443 (January 21, 2014) (SR–CBOE–2013–129).

[5] *See* MIAX Options Fee Schedule, Section 1)a)iii).

[6] 15 U.S.C. 78f(b).

[7] 15 U.S.C. 78f(b)(4).

proposed fee levels and volume thresholds are reasonably designed to be comparable to those of other options exchanges employing similar fee programs, and also to attract additional liquidity and order flow to the Exchange.

The Exchange's proposal to increase the transaction fees for MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms is reasonable because the Exchange's fees will remain competitive with fees at other options exchanges.[8] The Exchange's proposal to increase the transaction fees for MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms is equitable and not unfairly discriminatory because the increase applies equally to all such market participants. The Exchange does not assess Priority Customers transactions fees because Priority Customer order flow enhances liquidity on the Exchange for the benefit of all market participants. Priority Customer liquidity benefits all market participants by providing more trading opportunities, which attracts Market Makers and other market participants. An increase in the activity of these market participants in turn facilitates tighter spreads, which may cause an additional corresponding increase in order flow from other market participants. Market Makers are assessed lower transaction fees as compared to Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms because they have obligations to the market and regulatory requirements, which normally do not apply to other market participants.[9] They have obligations to make continuous markets, engage in a course of dealings reasonably calculated to contribute to the maintenance of a fair and orderly market, and not make bids or offers or enter into transactions that are inconsistent with a course of dealings. In addition, charging non-members higher transaction fees is a common practice amongst exchanges because Members are subject to other fees and dues associated with their membership to the Exchange that do not apply to non-members. The proposed differentiation as between Priority Customers, Market Makers, and other market participants recognizes the differing contributions made to the liquidity and trading environment on the Exchange by these market participants.

The Exchange's proposal to offer MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms the opportunity to reduce transaction fees by $0.02 per contract in standard options, provided certain criteria are met, is reasonable because the Exchange desires to offer all such market participants an opportunity to lower their transaction fees. The Exchange's proposal to offer MIAX Market Makers, Public Customers that are not a Priority Customer, Non-MIAX Market Makers, Non-Member Broker-Dealers, and Firms the opportunity to reduce transaction fees by $0.02 per contract in standard options, provided certain criteria are met, is equitable and not unfairly discriminatory because the Exchange will offer all market participants, excluding Priority Customers, a means to reduce transaction fees by qualifying for volume tiers in the Priority Customer Rebate Program. The Exchange believes that offering all such market participants the opportunity to lower transaction fees by incentivizing them to transact Priority Customer order flow in turn benefits all market participants.

The Exchange believes that the proposal to allow the aggregation of trading activity of separate Members or its affiliates for purposes of the fee reduction is fair, equitable and not unreasonably discriminatory. The Exchange believes the proposed rule change is reasonable because it would allow aggregation of the trading activity of separate Members or its affiliates for purposes of the fee reduction only in very narrow circumstances, namely, where the firm is an affiliate, as defined herein. Furthermore, other exchanges, as well as MIAX, have rules that permit the aggregation of the trading activity of affiliated entities for the purposes of calculating and assessing certain fees. The Exchange believes that offering all such market participants the opportunity to lower transaction fees by incentivizing them to transact Priority Customer order flow in turn benefits all market participants.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. The proposal is similar to the transaction fees found on other options exchanges; therefore, the Exchange believes the proposal is consistent with robust competition by increasing the intermarket competition for order flow from market participants. To the extent that there is additional competitive burden on market participants without Priority Customer order flow, the Exchange believes that this is appropriate because the proposal should incent Members to direct additional order flow to the Exchange and thus provide additional liquidity that enhances the quality of its markets and increases the volume of contracts traded here. To the extent that this purpose is achieved, all the Exchange's market participants should benefit from the improved market liquidity. Enhanced market quality and increased transaction volume that results from the anticipated increase in order flow directed to the Exchange will benefit all market participants and improve competition on the Exchange. The Exchange notes that it operates in a highly competitive market in which market participants can readily favor competing venues if they deem fee levels at a particular venue to be excessive. In such an environment, the Exchange must continually adjust its fees to remain competitive with other exchanges and to attract order flow. The Exchange believes that the proposal reflects this competitive environment.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

Written comments were neither solicited nor received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A)(ii) of the Act.[10] At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule

[8] *See* NASDAQ OMX PHLX LLC Pricing Schedule, Section II; NASDAQ Options Market LLC's Pricing Schedule, Chapter XV.

[9] *See* Exchange Rules 603 and 604.

[10] 15 U.S.C. 78s(b)(3)(A)(ii).

change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov. Please include File Number* SR–MIAX–2014–46 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–MIAX–2014–46. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–MIAX–2014–46 and should be submitted on or before October 1, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[11]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21521 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

[11] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72993; File No. SR–NASDAQ–2014–091]

Self-Regulatory Organizations; The NASDAQ Stock Market LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to SPY and DIA Options

September 4, 2014.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 [2] thereunder, notice is hereby given that on September 2, 2014, The NASDAQ Stock Market LLC (''NASDAQ'' or ''Exchange'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by NASDAQ. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

NASDAQ is filing with the Commission a proposal to amend Chapter IV, Section 6 (Series of Options Contracts Open for Trading) of the rules of the NASDAQ Options Market (''NOM'') to allow $1 or greater strike price intervals for options on the SPDR® S&P 500® Exchange Traded Fund (''SPY'') and the SPDR® Dow Jones® Industrial Average Exchange Traded Fund (''DIA'').[3]

The text of the proposed rule change is available from NASDAQ's Web site at *http://nasdaq.cchwallstreet.com,* at NASDAQ's principal office, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, NASDAQ included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. NASDAQ has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of this proposed rule change is to amend Chapter IV, Section 6 by modifying the interval setting regime for SPY and DIA options listed on the SPDR S&P 500 Exchange Traded Fund (''ETF'') and the SPDR Dow Jones Industrial Average ETF, respectively, to allow $1 or greater strike price intervals.[4] Through this filing, the Exchange intends to make SPY and DIA options more tailored and easier for investors and traders to use.

The proposed rule change is based on the recent Commission approval of a proposal to amend Commentary.05 to NASDAQ OMX PHLX LLC (''Phlx'') Rule 1012 to allow SPY and DIA options to trade in $1 or greater increments.[5]

Under current Chapter IV, Supplementary Material .01 to Section 6, the interval of strike prices of series of options on ETFs is $1 or greater where the strike price is 200 or less and $5 or greater where the strike price is more than 200.[6] The Proposal seeks to narrow those strike intervals to $1 apart for SPY and DIA options, in effect matching the interval for these products to ETF option strike prices at or below 200.

The prices for SPY and DIA options [sic] are approaching the 200 price point. By the end of June 2014, for example, SPY was trading at more than $195 per share and DIA was trading at more than $168 per share.[7] As the option strike prices continue to appreciate, investor and member demands to list additional SPY and DIA option series continue to increase. SPY is the most heavily traded and liquid exchange-traded product in the U.S., and SPY options represent 13% of the total option volume in the U.S. and 8% of the options volume on the Exchange. DIA options represent 12% of the options volume on the Exchange and less than 1% of the options volume in

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] S&P®, S&P 500®, Standard & Poor's®, and SPDR® are registered trademarks of Standard & Poor's® Financial Services LLC. Dow Jones®, DJIA℠, and Dow Jones Industrial Average℠ are registered trade and service marks of Dow Jones® Trademark Holdings LLC.

[4] The SPDR S&P 500 ETF is based on the broad-based S&P 500 Index, and the SPDR Dow Jones Industrial Average ETF is based on the Dow Jones Industrial Average.

[5] *See* Securities Exchange Act Release No. 72949 (August 29, 2014) (SR–Phlx–2014–46) (approval order).

[6] *See* Chapter IV, Supplementary Material .01(b) to Section 6.

[7] On August 25, 2014, SPY traded and closed above $200 for the first time. The SPY closing price on August 25th was $200.20.

the U.S. Moreover, the popularity of DIA and SPY options is reflected in the fact that they have options contracts reflecting monthly, quarterly, and weekly expiration cycles.[8] Not having the proposed $1 intervals above a 200 strike price will significantly limit investors' hedging and trading possibilities, particularly when it comes to executing strategies that are effective in $1 intervals; and may, as a result, constrict trading and hedging activity. The Exchange therefore proposes to amend Chapter IV, Supplementary Material .01 to Section 6 to allow SPY and DIA options to trade in $1 increments.

Specifically, the Exchange proposes to add Chapter IV, Supplementary Material .01(c) to Section 6[9] to state that notwithstanding any other provision regarding the interval of strike prices of series of options on ETFs in the rule, the interval of strike prices on SPY and DIA options will be $1 or greater. By having smaller strike intervals in SPY and DIA, investors will have more efficient hedging and trading opportunities due to the higher $1 interval ascension. The proposed $1 intervals, particularly above a 200 strike price, will result in having at-the-money series based upon the underlying SPY or DIA moving less than 1%, which falls in line with slower price movements of a broad-based index. Furthermore, the proposed $1 intervals will allow currently employed option trading strategies (such as, for example, risk reduction/hedging strategies using SPY weekly options) to remain in play. Considering that $1 intervals already exist below the 200 price point and that SPY and DIA are approaching the 200 level, continuing to maintain the artificial 200 level (above which intervals increase 500%, to $5), will have a negative effect on investing, trading and hedging opportunities and volume. The continued demand for highly liquid options such as SPY and DIA, and the investing, trading, and hedging opportunities they represent, far outweighs any potential negative impact of allowing SPY and DIA options to trade in more finely tailored intervals above a 200 price point.

With the proposal, for example, investors and traders would be able to roll open positions from a lower strike to a higher strike in conjunction with the price movement of the underlying. Under the current rule, where the next higher available series would be $5 away above a 200 strike price, the ability to roll such positions is effectively negated. Thus, to move a position from a 200 strike to a 205 strike under the current rule, an investor would need for the underlying product to move 2.5%, and would not be able to execute a roll up until such a large movement occurred. With the proposed rule change, however, the investor would be in a significantly safer position of being able to roll his open options position from a 200 to a 201 strike price, which is only a 0.5% move for the underlying.

By allowing SPY and DIA options in $1 intervals over a 200 strike price, the proposal will moderately augment the total number of options series available on the Exchange. However, the Exchange has analyzed its capacity and represents that it and the Options Price Reporting Authority (''OPRA'') have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal. The Exchange also represents that it does not believe this expansion will cause fragmentation of liquidity. The Exchange's beliefs are supported by the limited nature of the proposal, which applies to two symbols rather than to all ETF products. Moreover, while under the current rule-set there is ample liquidity, it is constricted above 200. This proposal only enhances liquidity at more rational strike intervals necessary to benefit investors as the stock market improves in value.

The Exchange believes that the proposed rule change, like the other strike price programs currently offered by the Exchange, will benefit investors by giving them more flexibility to more closely tailor their investment and hedging decisions by allowing SPY and DIA options to trade in finer $1 intervals.

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder that are applicable to a national securities exchange, and, in particular, with the requirements of Section 6(b) of the Act.[10] In particular, the proposal is consistent with Section 6(b)(5) of the Act,[11] because it is designed to promote just and equitable principles of trade, remove impediments to and perfect the mechanisms of a free and open market and a national market system and, in general, to protect investors and the public interest.

In particular, the proposed rule change would add consistency to the SPY and DIA options markets and allow investors to use SPY and DIA options more easily and effectively. Moreover, the proposed rule change would allow investors and traders, whether big or small, to better trade and hedge positions in SPY and DIA options where the strike price is greater than 200, and ensure that SPY and DIA options investors and traders are not at a disadvantage simply because of the strike price.

The Exchange also believes the proposed rule change is consistent with Section 6(b)(1) of the Act,[12] which provides that the Exchange be organized and have the capacity to be able to carry out the purposes of the Act and the rules and regulations thereunder, and the rules of the Exchange. The rule change proposal allows the Exchange to respond to customer demand to allow SPY and DIA options to trade in $1 intervals above a 200 strike price. The Exchange does not believe that the proposed rule would create additional capacity issues or affect market functionality.

As noted above, ETF options trade in wider $5 intervals above a 200 strike price, whereby options at or below a 200 strike price trade in $1 intervals. This creates a situation where contracts on the same option class, namely SPY and DIA options, effectively may not be able to execute certain strategies such as, for example, rolling to a higher strike price, simply because of the arbitrary 200 strike price above which options intervals increase by 500%. This proposal remedies the situation by establishing an exception to the current ETF interval regime, for SPY and DIA options only, to allow such options to trade in $1 or greater intervals at all strike prices.

The Exchange believes that the proposed rule change, like other strike price programs currently offered by the Exchange, will benefit investors by giving them increased flexibility to more closely tailor their investment and hedging decisions. Moreover, the proposed rule change is consistent with changes proposed by at least one other exchange.[13]

[8] For rules regarding quarterly options and weekly options (also known as Short Term Options), *see* Chapter IV, Supplementary Material .04 and Supplementary Material .07 to Section 6, respectively.

[9] Current Supplementary Material .01(c), (d), (e) to Section 6 would be re-numbered as Supplementary Material .01(d), (e), (f) to Section 6, respectively.

[10] 15 U.S.C. 78f(b).

[11] 15 U.S.C. 78f(b)(5).

[12] 15 U.S.C. 78f(b)(1).

[13] *See* Securities Exchange Act Release No. 72949 (August 29, 2014) (SR–Phlx–2014–46) (approval order). Moreover, the Exchange has noted that other

With regard to the impact of this proposal on system capacity, the Exchange has analyzed its capacity and represents that it and OPRA have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. To the contrary, the Exchange believes that the proposed rule change will result in additional investment options and opportunities to achieve the investment and trading objectives of market participants seeking efficient trading and hedging vehicles, to the benefit of investors, market participants, and the marketplace in general. Specifically, the Exchange believes that SPY and DIA option investors and traders will significantly benefit from the availability of finer strike price intervals above a 200 price point.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

Written comments were neither solicited nor received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the proposed rule change does not (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act [14] and Rule 19b–4(f)(6) thereunder.[15]

The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Exchange stated that waiver of this requirement would allow the Exchange to implement the proposed rule change as soon as possible and thereby harmonize its rules regarding SPY and DIA options intervals with the rules of other markets. The Exchange also stated that waiver would allow market participants to more effectively tailor their investing, trading, and hedging decisions in respect of SPY and DIA options by using finer $1 increments. For these reasons, the Commission believes that the proposed rule change presents no novel issues and that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest; and will allow the Exchange to remain competitive with other exchanges. Therefore, the Commission designates the proposed rule change to be operative upon filing.[16]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–NASDAQ–2014–091 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–NASDAQ–2014–091. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–NASDAQ–2014–091 and should be submitted on or before October 2, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[17]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21527 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

options markets have filed similar proposals to modify the strike price (intervals) regime for specific options. *See, e.g.,* Securities Exchange Act Release No. 72482 (June 26, 2014), 79 FR 37825 (July 2, 2014) (SR–CBOE–2014–051) (notice of filing and immediate effectiveness modifying the strike price regime for Mini-S&P 500 Index (XSP) options).

[14] 15 U.S.C. 78s(b)(3)(A).

[15] 17 CFR 240.19b–4(f)(6). As required under Rule 19b–4(f)(6)(iii), the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission.

[16] For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

[17] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–72998; File No. SR–ISE–2014–42]

Self-Regulatory Organizations; International Securities Exchange, LLC; Notice of Filing of Proposed Rule Change Regarding Strike Price Intervals for SPY and DIA Options

September 4, 2014.

Pursuant to Section 19(b)(1) [1] of the Securities Exchange Act of 1934 (the

[1] 15 U.S.C. 78s(b)(1).

''Act'') [2] and Rule 19b–4 thereunder,[3] notice is hereby given that, on September 3, 2014, the International Securities Exchange, LLC (the ''Exchange'' or the ''ISE'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The ISE proposes to amend its rules to allow $1 or greater strike price intervals for options on certain Exchange-Traded Fund Shares approved for options trading pursuant to Rule 502(h). The text of the proposed rule change is available on the Exchange's Web site (*http://www.ise.com*), at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The self-regulatory organization has prepared summaries, set forth in Sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of this proposed rule change is to amend ISE rules to allow $1 or greater strike price intervals for options listed on the SPDR S&P 500 ETF (''SPY'') and the SPDR Dow Jones Industrial Average ETF (''DIA''), consistent with recent changes proposed by NASDAQ OMX PHLX (''Phlx'') and approved by the Commission.[4] Options on SPY and DIA have historically traded on the ISE with $1 intervals up to a strike price of $200 pursuant to Rule 504(h), which permits options on Exchange-Traded Fund Shares to be traded in intervals that were established on other exchanges prior to listing on the ISE.[5] Above $200 these options classes trade with significantly wider $5 strike price intervals. As the underlying securities have been steadily approaching, and in the case of SPY has recently surpassed, the $200 mark, and in response to increased investor and member demand to list additional strikes in these heavily traded options classes, the Exchange now proposes to list options on SPY and DIA in dollar intervals regardless of the strike price.

Specifically, the Exchange proposes to add Supplementary Material .14 to state that notwithstanding any other provision regarding the interval of strike prices of series of options on Exchange-Traded Fund Shares in Rule 504, the interval of strike prices on SPY and DIA options will be $1 or greater. By having smaller strike intervals in SPY and DIA, investors will have more efficient hedging and trading opportunities. The proposed $1 intervals above a $200 strike price will result in having at-the-money series based on the underlying SPY or DIA moving less than 1%, which falls in line with slower price movements of a broad-based index. Furthermore, the proposed $1 intervals will allow members to continue to employ current option trading and hedging strategies in SPY and DIA. Considering that $1 intervals already exist below the $200 price point, and that SPY and DIA are both trading close to or at the $200 level, continuing to maintain the artificial $200 ceiling (above which intervals increase 500% to $5), will have a negative effect on investing, trading and hedging opportunities and volume. The continued demand for highly liquid options such as SPY and DIA, and the investing, trading, and hedging opportunities they represent, far outweighs any potential negative impact of allowing SPY and DIA options to trade in more finely tailored intervals above a $200 price point.

With the proposal, for example, investors and traders would be able to roll open positions from a lower strike to a higher strike in conjunction with the price movement of the underlying. Under the current rule, where the next higher available series would be $5 away above a $200 strike price, the ability to roll such positions is effectively negated. Thus, to move a position from a $200 strike to a $205 strike under the current rule, an investor would need for the underlying product to move 2.5%, and would not be able to execute a roll up until such a large movement occurred. With the proposed rule change, however, the investor would be in a significantly safer position of being able to roll his open options position from a $200 to a $201 strike price, which is only a 0.5% move for the underlying.

By allowing SPY and DIA options in $1 intervals over a $200 strike price, the proposal will moderately augment the total number of options series available on the Exchange. However, the Exchange has analyzed its capacity and represents that it and the Options Price Reporting Authority (''OPRA'') have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal. The Exchange also represents that it does not believe this expansion will cause fragmentation of liquidity. The Exchange's beliefs are supported by the limited nature of the proposal, which applies to two symbols rather than to all Exchange-Traded Fund Shares. Moreover, while under current rules there is ample liquidity, such liquidity is constricted above $200. This proposal enhances liquidity by offering more rational strike price intervals as the stock market appreciates in value.

The Exchange believes that the proposed rule change, like the other strike price programs currently offered by the Exchange, will benefit investors by giving them more flexibility to more closely tailor their investment and hedging decisions.

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the provisions of Section 6 of the Securities Exchange Act of 1934 (the ''Act''),[6] in general, and with Section 6(b)(5) of the Act,[7] in particular, in that it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in

[2] 15 U.S.C. 78a.

[3] 17 CFR 240.19b–4.

[4] *See* Securities Exchange Act Release No.[sic] 72664 (July 24, 2014), 79 FR 44231 (July 30, 2014) (SR–Phlx–2014–46) (Notice); 72949 (August 29, 2014) (SR–Phlx–2014–46) (Approval).

[5] *See* Securities Exchange Act Release No. 44037 (March 2, 2001), 66 FR 14613 (March 13, 2001) (SR–ISE–01–08).

[6] 15 U.S.C. 78f.

[7] 15 U.S.C. 78f(b)(5).

general, to protect investors and the public interest.

In particular, the proposed rule change would add consistency to the SPY and DIA options markets and allow investors to use SPY and DIA options more easily and effectively. Moreover, the proposed rule change would allow investors and traders, whether big or small, to better trade and hedge positions in SPY and DIA options where the strike price is greater than $200, and ensure that SPY and DIA options investors and traders are not at a disadvantage simply because of the strike price.

The Exchange also believes the proposed rule change is consistent with Section 6(b)(1) of the Act,[8] which provides that the Exchange be organized and have the capacity to be able to carry out the purposes of the Act and the rules and regulations thereunder, and the rules of the Exchange. The rule change proposal allows the Exchange to respond to customer demand to allow SPY and DIA options to trade in $1 intervals above a $200 strike price. The Exchange does not believe that the proposed rule would create additional capacity issues or affect market functionality.

As noted above, options on Exchange-Traded Fund Shares generally trade in wider $5 intervals above a $200 strike price, whereas options at or below a $200 strike price trade in $1 intervals. This creates a situation where contracts on the same option class, namely SPY and DIA options, effectively may not be able to execute certain strategies, such as rolling to a higher strike price, simply because of the arbitrary $200 strike price above which options intervals increase by 500%. This proposal remedies the situation by establishing an exception to the current strike price interval regime, for SPY and DIA options only, to allow such options to trade in $1 or greater intervals at all strike prices.

The Exchange believes that the proposed rule change, like other strike price programs currently offered by the Exchange, will benefit investors by giving them increased flexibility to more closely tailor their investment and hedging decisions. Moreover, the proposed rule change is consistent with changes proposed by Phlx and approved by the Commission.[9]

With regard to the impact of this proposal on system capacity, the Exchange has analyzed its capacity and represents that it and OPRA have the necessary systems capacity to handle any potential additional traffic associated with this proposed rule change. The Exchange believes that its members will not have a capacity issue as a result of this proposal.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. To the contrary, the proposed rule change is a competitive response to a recent Phlx filing approved by the Commission.[10] The Exchange believes that the proposed rule change is essential to ensure fair competition between markets, and will result in additional investment options and opportunities to achieve the investment and trading objectives of market participants seeking efficient trading and hedging vehicles, to the benefit of investors, market participants, and the marketplace in general.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange has not solicited, and does not intend to solicit, comments on this proposed rule change. The Exchange has not received any unsolicited written comments from members or other interested parties.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the proposed rule change does not (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, the proposed rule change has become effective pursuant to Section 19(b)(3)(A) of the Act[11] and Rule 19b–4(f)(6) thereunder.[12]

The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Exchange stated that waiver of this requirement will ensure fair competition among options exchanges by allowing the Exchange to establish smaller strike price intervals in these highly traded products at the same time as at least one other options exchange. For these reasons, the Commission believes that the proposed rule change presents no novel issues and that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest; and will allow the Exchange to remain competitive with other exchanges. Therefore, the Commission designates the proposed rule change to be operative upon filing.[13]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–ISE–2014–42 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–ISE–2014–42. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent

[8] 15 U.S.C. 78f(b)(5).

[9] *See supra* note 4.

[10] *Id.*

[11] 15 U.S.C. 78s(b)(3)(A).

[12] 17 CFR 240.19b–4(f)(6). As required under Rule 19b–4(f)(6)(iii), the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Commission has waived the pre-filing requirement in this case.

[13] For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. *See* 15 U.S.C. 78c(f).

amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–ISE–2014–42 and should be submitted on or before October 1, 2014.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[14]

Kevin M. O'Neill,

Deputy Secretary.

[FR Doc. 2014–21529 Filed 9–9–14; 8:45 am]

BILLING CODE 8011–01–P

[14] 17 CFR 200.30–3(a)(12).

DEPARTMENT OF STATE

[Public Notice 8864]

Bureau of Political-Military Affairs, Directorate of Defense Trade Controls: Notifications to the Congress of Proposed Commercial Export Licenses

AGENCY: Department of State.

ACTION: Notice.

SUMMARY: Notice is hereby given that the Department of State has forwarded the attached Notifications of Proposed Export Licenses to the Congress on the dates indicated on the attachments pursuant to sections 36(c) and 36(d), and in compliance with section 36(f), of the Arms Export Control Act.

DATES: *Effective Date:* As shown on each of the 38 letters.

FOR FURTHER INFORMATION CONTACT: Ms. Lisa V. Aguirre, Directorate of Defense Trade Controls, Department of State, telephone (202) 663–2830; email *DDTCResponseTeam@state.gov.* ATTN: Congressional Notification of Licenses.

SUPPLEMENTARY INFORMATION: Section 36(f) of the Arms Export Control Act (22 U.S.C. 2778) mandates that notifications to the Congress pursuant to sections 36(c) and 36(d) must be published in the **Federal Register** when they are transmitted to Congress or as soon thereafter as practicable.

Following are such notifications to the Congress:

February 21, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed amendment to a manufacturing license for export of defense articles, including technical data, and defense services in the amount of $100,000,000 or more.

The transaction contained in the attached certification authorizes the export of defense articles, including technical data, and defense services to support the manufacture, assembly, inspection, and delivery of TF33, J52, J57, and F100 engine parts and components for end use by Israel.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,

Julia Frifield,

Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–171.

February 24, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of 7.62mm M60E4 machine guns with primary and spare barrels and accessories for use by the Turkish National Police as part of their NATO modernization program.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,

Julia Frifield,

Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–003.

February 28, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, to include technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the transfer of defense articles, to include technical data, and defense services to support the integration of the Turkmenistan National Satellite System of Communications with the Falcon 9 launch vehicle.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,

Julia Frifield,

Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–178.

March 7, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Belgium, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal,

South Korea, Thailand, and the United Kingdom to support depot-level maintenance, repair, and overhaul of F100 engines for end-use by the Ministries of Defense of Belgium, Chile, Denmark, Germany, Greece, Indonesia, Israel, Italy, Japan, Jordan, Morocco, the Netherlands, Norway, Pakistan, Poland, Portugal, Saudi Arabia, Singapore, South Korea, Taiwan, Thailand, and the United Kingdom.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–136.

March 19, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed amendment to a technical assistance agreement for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification transfers technical data, defense services, and defense articles to the United Arab Emirates' Black Hawk Repair Depot which is capable of supporting the H–60(L/M)/S–70(i) Black Hawk helicopters with depot level repair capability.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–167.

March 19, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of an amendment to a manufacturing licensing agreement for the export of defense articles, including technical data, and defense services in the amount of $100,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to the Czech Republic and Poland for the manufacturing of H–60/S–70 helicopter hardware and components for end-use in the United States.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–001.

March 19, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed amendment to a technical assistance agreement for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification transfers defense articles, technical data, and defense services to support the sale of three C–130J aircraft to the Government of the Sultanate of Oman.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–004.

March 19, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of M4A3 assault rifles with accessories and training for use by the Army and Marine Units of the Armed Forces of the Philippines.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–010.

March 19, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data in the amount of $100,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, for installation of AN/PRC–150 High Frequency manpack radio transceiver system, AN/PRC–152 Multiband handheld radio transceiver system, and AN/PRC–117G Wideband manpack tactical radio transceiver systems in various vehicle and dismounted applications to support the Australia Government, Department of Defence.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–014.

March 25, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Sections 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license amendment for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Brazil to design, manufacture, and delivery, of the STAR ONE Commercial Communications Satellite program.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–185.

March 25, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to the United Arab Emirates to support the integration, installation, operation, training, testing, maintenance, and repair of the AN/PVS–15 (M953) Night Vision Goggle and AN/PVS–24 (M2124) Night Vision Devices.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–184.

March 25, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(d) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license amendment for the export of defense articles, including technical data, and defense services for the manufacture of significant military equipment abroad.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services for the continued manufacture of M791, M792, and M793 ammunition and components thereof for sale to the Turkish Ministry of Defense, as well as buyers in the approved sales territory.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–181.

March 28, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Sections 36(c) and (d) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for export for the manufacture of significant military equipment abroad and the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to the United Kingdom to support the design, manufacture, integration, installation, operation, training, testing, maintenance, repair, marketing and sale of the Brimstone Weapon System.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–143.

March 25, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license amendment for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Australia, Italy, The Netherlands, Romania, and the United Arab Emirates to support the integration, installation, operation, training, testing, maintenance, and repair of the Rolling Airframe Missile (RAM) Guided Missile Weapon System (GMWS).

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–162.

April 1, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Sections 36(c) and (d) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the manufacture of significant military equipment abroad and the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Canada to support the manufacture, integration, installation, operation, training, testing, maintenance, and repair of the MK73 Mod 2/3 Solid State and MK 93 Continuous Wave Illuminator (CWI) Transmitters for the NATO Sea Sparrow Program.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–169.

April 9, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of semi-automatic carbines to the Kuwait National Guard.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–190.

April 11, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Brazil to support the export of Mossberg Tactical 12 Gage Shotguns with 18 inch barrels and retractable butts to the Brazilian Army.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–035.

April 11, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear. Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of an amendment to a technical assistance agreement for the export of defense articles, including technical data, and defense services in the amount of $100,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Australia relating to the operation, installation, intermediate- and depot-level maintenance, repair, upgrade, and training for various Enhanced Position Location Reporting System (EPLRS), EPLRS–XF (Extended Frequency), and MicroLight radios and ancillary equipment for end use by the Commonwealth of Australia, Department of Defence.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–009.

April 11, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license amendment for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Bermuda, France, Hong Kong, Indonesia, Mexico, the Philippines, Singapore, and Sweden to support launches of the SATMEX and ABS commercial communications satellites from Cape Canaveral Air Force Station in Florida.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–008.

April 11, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services for export of M4A1 rifles and carbines with 14.5'' barrels and sliding butt-stocks to the United Arab Emirates, G.H.O. Armed Forces for their own use.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–002.

April 11, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(d) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services for the manufacture of significant military equipment abroad.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to the United Kingdom to support the manufacture, integration, installation, operation, training, testing, maintenance, and repair of Ground Based Navigation Systems and Aids.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–018.

April 14, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(d) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed amendment to a manufacturing license for export of defense articles, including technical data, and defense services to include significant military equipment in the amount of $50,000,000 or more.

The transaction contained in the attached certification authorizes the export of defense articles, including technical data, and defense services to support the manufacture of aircraft, vessel, and military vehicle accessory products, to include fabricate and machine components, conduct assembly, design, testing, inspection, trouble shooting, quality assurance, and repair relating to the manufacturing process for various end users.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–173.

April 15, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $14,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, to include technical data, and defense services to Thailand, Sweden, Australia, Singapore, and South Korea to support the integration, installation, and test of the MK 41 Vertical Launch System on the Royal Thai Navy new construction frigates.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–193.

April 22, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Brazil to support the export of 7.62 MAG and .50 Cal M2HB machine guns to the Brazilian Army.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–036.

April 23, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed technical assistance agreement to include the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification allows the transfer of defense articles, including technical data, defense services necessary for the overhaul, maintenance, upgrade, and related training on Royal Jordanian Air Force AH–1F/S Cobra Helicopters.

The United States government is prepared to license the export of these items having taken into account

political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.
Enclosure: Transmittal No. DDTC 13–180.

April 23, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed amendment to an existing technical assistance agreement for the export of defense articles, including technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the transfer of defense articles, to include technical data, and defense services to support the Missile Firing Unit (MFU) and Stunner Interceptor Subsystems of the David's Sling Weapon System (DSWS) for end-use by the Government of Israel.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.
Enclosure: Transmittal No. DDTC 14–006.

April 23, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of SA58 FAL OSW fully automatic rifles, caliber 7.62x51mm, with magazines, slings, and user manuals for use by the State of San Luis Potosi and the Federal Police of the General Directorate of Military Industry in Mexico.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.
Enclosure: Transmittal No. DDTC 14–022.

April 23, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of various rifles, revolvers, pistols and accessories for commercial resale in Canada.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.
Enclosure: Transmittal No. DDTC 14–029.

May 29, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services consisting of M134D–H Mini-Gun systems and the FLIR Star Safire II surveillance systems for incorporation into the Czech Republic's Mi-17 helicopters.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.
Enclosure: Transmittal No. DDTC 14–048.

May 21, 2014

Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed amendment to a technical assistance agreement for the export of defense articles, including technical data, and defense services to include significant military equipment in the amount of $50,000,000 or more.

The transaction contained in the attached certification transfers defense articles, technical data, and defense services to support organizational, intermediate, and deport level maintenance, overhaul, training, and support services for the F110–GE–129C/129E aircraft engine for end use by the Government of the Republic of Singapore.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.
Enclosure: Transmittal No. DDTC 14–016.

May 16, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of firearm parts and components controlled under Category I of the United States Munitions List in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of M6–SL and M6A2 carbines, 5.56mm 30 round capacity rifle magazines, and 40mm rail mounted grenade launchers to the Royal Malaysian Police.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Chad Kreikemeier,
Acting Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 13–189.

May 16, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $25,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to the Republic of Korea to support the integration of the Small Diameter Bomb Weapon System onto KF–16 and F15K aircraft.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Chad Kreikemeier,
Acting Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–012.

May 16, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $100,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Japan to support the integration, installation, operation, training, testing, maintenance, and repair of the Very High Speed System Integrated Circuit (VHSIC) Central Computer in support of the F–15 Modernization Program.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–034.

May 14, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed authorization for the export of firearm parts and components abroad controlled under Category I of the United States Munitions List in amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of semi-automatic carbines to the Government of Brazil, Rio de Janerio, State Secretariat for Security.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–056.

May 12, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Sections 36(c) and 36(d) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the manufacture of significant military equipment abroad and the export of defense articles, including technical data, and defense services in the amount of $1,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services for the commercial sale of semi-automatic rifles and carbines, with their components, to Canada's civilian market in accordance with applicable Canadian laws and regulations.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–041.

May 28, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(d) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of technical data and defense services for the manufacture of significant military equipment abroad.

The transaction contained in the attached certification involves the export of technical data and defense services to Australia as a manufacturing data package for storage supporting the Hawkeye III Lite Very Small Aperture

Terminals (VSAT) Satellite equipment for Phase 3H of the JP2008 Program for the Commonwealth of Australia.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–028.

May 28, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, including technical data, and defense services in the amount of $100,000,000 or more.

The transaction contained in the attached certification involves the export of defense articles, including technical data, and defense services to Canada to support the integration, installation, operation, training, testing, maintenance, and repair of the Tactical Armored Patrol Vehicles Program (TAPV).

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–039.

May 27, 2014
Honorable John A. Boehner, *Speaker of the House of Representatives.*

Dear Mr. Speaker: Pursuant to Section 36(c) of the Arms Export Control Act, I am transmitting, herewith, certification of a proposed license for the export of defense articles, to include technical data, and defense services in the amount of $50,000,000 or more.

The transaction contained in the attached certification involves the transfer of defense articles, to include technical data, and defense services to provide commercial launch services to FORMOSAT–7/COSMIC–2 remote sensing satellites with the Falcon family launch vehicle.

The United States government is prepared to license the export of these items having taken into account political, military, economic, human rights, and arms control considerations.

More detailed information is contained in the formal certification which, though unclassified, contains business information submitted to the Department of State by the applicant, publication of which could cause competitive harm to the United States firm concerned.

Sincerely,
Julia Frifield,
Assistant Secretary, Legislative Affairs.

Enclosure: Transmittal No. DDTC 14–007.

Lisa V. Aguirre,

Director, Office of Defense Trade Controls Management, Department of State.

[FR Doc. 2014–21619 Filed 9–9–14; 8:45 am]

BILLING CODE 4710–25–P

DEPARTMENT OF STATE

[Public Notice: 8863; Docket No. DOS–2014–0022]

Notice of Meeting of the Cultural Property Advisory Committee

There will be a meeting of the Cultural Property Advisory Committee October 7–9, 2014 at the U.S. Department of State, Annex 5, 2200 C Street NW., Washington, DC. Portions of this meeting will be closed to the public, as discussed below.

During the closed portion of the meeting, the Committee will review the proposal to extend the *Memorandum of Understanding Between the Government of the United States of America and the Government of the Republic of El Salvador Concerning the Imposition of Import Restrictions on Certain Categories of Archaeological Material from the Prehispanic Cultures of the Republic of El Salvador* (''MOU'') [Docket No. DOS–2014–0022]. An open session to receive oral public comment on the proposal to extend the MOU with El Salvador will be held on Tuesday, October 7, 2014, beginning at 10:30 a.m. EDT.

Also, during the closed portion of the meeting, the Committee will conduct interim reviews of the *Memorandum of Understanding between the Government of the United States of America and the Government of the Republic of Bolivia Concerning the Imposition of Import Restrictions on Archaeological Material from the Pre-Columbian Cultures and Certain Ethnological Material from the Colonial and Republican Periods of Bolivia and the Memorandum of Understanding between the Government of the United States of America and the Government of the Hellenic Republic Concerning the Imposition of Import Restrictions on Categories of Archaeological and Byzantine Ecclesiastical Ethnological Material through the 15th Century A.D. of the Hellenic Republic.* Public comment, oral and written, will be invited at a time in the future should these Memoranda of Understanding be proposed for extension. In closed session, the Committee will also continue its review of the request from the Arab Republic of Egypt to enter into a bilateral agreement

The Committee's responsibilities are carried out in accordance with provisions of the Convention on Cultural Property Implementation Act (19 U.S.C. 2601 *et seq.;* ''Act''). The text of the Act and MOUs, as well as related information, may be found at *http://culturalheritage.state.gov.* If you wish to attend the open session on October 7, 2014, you should notify the Cultural Heritage Center of the Department of State at (202) 632–6301 no later than 5:00 p.m. (EDT) September 29, 2014, to arrange for admission. Seating is limited. When calling, please specify if you need reasonable accommodation. The open session will be held at 2200 C St. NW., Washington, DC 20037. Please plan to arrive 30 minutes before the beginning of the open session.

If you wish to make an oral presentation at the open session you must request to be scheduled by the above-mentioned date and time, and you must submit written comments, ensuring that they are received no later than September 29, 2014, at11:59 p.m. (EDT), via the eRulemaking Portal (see below), to allow time for distribution to Committee members prior to the meeting. Oral comments will be limited to five (5) minutes to allow time for questions from members of the Committee. All oral and written comments must relate specifically to the determinations under 19 U.S.C. 2602, pursuant to which the Committee must make findings. This statute can be found at the Web site noted above.

If you do not wish to make oral comment but still wish to make your views known, you may send written comments for the Committee to consider. Again, your comments must relate specifically to the determinations

under 19 U.S.C. 2602. Submit all written materials electronically through the eRulemaking Portal (see below), ensuring that they are received no later than September 29, 2014 at 11:59 p.m. (EDT). Our adoption of this procedure facilitates public participation; implements Section 206 of the E-Government Act of 2002, Public Law 107–347, 116 Stat. 2915; and supports the Department of State's ''Greening Diplomacy'' initiative which aims to reduce the State Department's environmental footprint and reduce costs.

Please submit comments only once using one of these methods:

• *Electronic Delivery.* To submit comments electronically, go to the Federal eRulemaking Portal (*http://www.regulations.gov*), enter the Docket No. DOS–2014–0022, and follow the prompts to submit a comment. Comments submitted in electronic form are not private. They will be posted on the site *http://www.regulations.gov.* Because the comments cannot be edited to remove any identifying or contact information, the Department of State cautions against including any information in an electronic submission that one does not want publicly disclosed (including trade secrets and commercial or financial information that is privileged or confidential pursuant to 19 U.S.C. 2605(i)(1)).

• *Regular Mail or Delivery.* If you wish to submit information that you believe to be privileged or confidential, and submitted in confidence pursuant to 19 U.S.C. 2605(i)(1), you may do so via regular mail, commercial delivery, or personal hand delivery to the following address: Cultural Heritage Center (ECA/P/C), SA–5, Floor C2, U.S. Department of State, Washington, DC 20522–05C2. Only comments that you believe to be privileged or confidential will be accepted via those methods. Comments must be postmarked by September 29, 2014.

Comments submitted by fax or email are not accepted. All comments must be submitted via the eRulemaking Portal only. All comments will be viewable by the public, so do not include any information that you consider privileged or confidential.

The Department of State requests that any party soliciting or aggregating comments received from other persons for submission to the Department of State inform those persons that the Department of State will not edit their comments to remove any identifying or contact information, and that they therefore should not include any information in their comments that they do not want publicly disclosed.

As noted above, portions of the meeting will be closed pursuant to 5 U.S.C. 552b(c)(9)(B) and 19 U.S.C. 2605(h), the latter of which stipulates that ''The provisions of the Federal Advisory Committee Act shall apply to the Cultural Property Advisory Committee except that the requirements of subsections (a) and (b) of sections 10 and 11 of such Act (relating to open meetings, public notice, public participation, and public availability of documents) shall not apply to the Committee, whenever and to the extent it is determined by the President or his designee that the disclosure of matters involved in the Committee's proceedings would compromise the government's negotiation objectives or bargaining positions on the negotiations of any agreement authorized by this chapter.'' Pursuant to law, Executive Order, and Delegation of Authority, I have made such a determination.

Personal information regarding attendees is requested pursuant to Public Law 99–399 (Omnibus Diplomatic Security and Antiterrorism Act of 1986), as amended; Public Law 107–56 (USA PATRIOT Act); and Executive Order 13356. The purpose of the collection is to validate the identity of individuals who enter Department facilities. The data will be entered into the Visitor Access Control System (VACS–D) database. Please see the Security Records System of Records Notice (State-36) at *http://www.state.gov/documents/organization/103419.pdf* for additional information.

Dated: September 3, 2014.

Evan Ryan,

Assistant Secretary, Bureau of Educational and Cultural Affairs, U.S. Department of State.

[FR Doc. 2014–21574 Filed 9–9–14; 8:45 am]

BILLING CODE 4710–05–P

DEPARTMENT OF STATE

[Public Notice: 8862]

Notice of Proposal To Extend the Memorandum of Understanding Between the Government of the United States of America and the Government of the Republic of El Salvador Concerning the Imposition of Import Restrictions on Certain Categories of Archaeological Material From the Prehispanic Cultures of the Republic of El Salvador

The Government of the Republic of El Salvador has informed the Government of the United States of America of its interest in an extension of the *Memorandum of Understanding Between the Government of the United States of America and the Government of the Republic of El Salvador Concerning the Imposition of Import Restrictions on Certain Categories of Archaeological Material from the Prehispanic Cultures of the Republic of El Salvador* (''MOU'').

Pursuant to the authority vested in the Assistant Secretary of State for Educational and Cultural Affairs, and pursuant to the requirement under 19 U.S.C. 2602(f)(1), an extension of this MOU is hereby proposed.

Pursuant to 19 U.S.C. 2602(f)(2), the views and recommendations of the Cultural Property Advisory Committee regarding this proposal will be requested.

A copy of the MOU, the Designated List of restricted categories of material, and related information can be found at the following Web site: *http://culturalheritage.state.gov.*

Dated: September 3, 2014.

Evan Ryan,

Assistant Secretary, Bureau of Educational and Cultural Affairs, U.S. Department of State.

[FR Doc. 2014–21575 Filed 9–9–14; 8:45 am]

BILLING CODE 4710–05–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Summary Notice No. PE–2014–70]

Petition for Exemption; Summary of Petition Received

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of petition for exemption received.

SUMMARY: This notice contains a summary of a petition seeking relief from specified requirements of 14 CFR. The purpose of this notice is to improve the public's awareness of, and participation in, this aspect of FAA's regulatory activities. Neither publication of this notice nor the inclusion or omission of information in the summary is intended to affect the legal status of the petition or its final disposition.

DATES: Comments on this petition must identify the petition docket number and must be received on or before September 30, 2014.

ADDRESSES: You may send comments identified by Docket Number FAA–2014–0629 using any of the following methods:

• *Government-wide rulemaking Web site:* Go to *http://www.regulations.gov*

and follow the instructions for sending your comments electronically.

• *Mail:* Send comments to the Docket Management Facility; U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590.

• *Fax:* Fax comments to the Docket Management Facility at 202–493–2251.

• *Hand Delivery:* Bring comments to the Docket Management Facility in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Privacy: We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. Using the search function of our docket Web site, anyone can find and read the comments received into any of our dockets, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78).

Docket: To read background documents or comments received, go to *http://www.regulations.gov* at any time or to the Docket Management Facility in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Jake Troutman, (202) 267–9521, 800 Independence Avenue SW., Washington, DC, 20951.

This notice is published pursuant to 14 CFR 11.85.

Issued in Washington, DC, on September 5, 2014.

Brenda D. Courtney,

Acting Director, Office of Rulemaking.

Petition For Exemption

Docket No.: FAA–2014–0629

Petitioner: Aetos Group Inc.

Section of 14 CFR: parts 21 Subpart H, 45.23(b), 47.3(b)(2), 47.31(c), 61.133(a)(1)(ii), 91.7(a), 91.9(b)(2), 91.119, 91.121, 91.151(a), 91.203(a) and (b), 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b).

Description of Relief Sought: The petitioner is seeking an exemption to commercially operate their small unmanned aircraft systems (sUAS) for the purposes of aerial inspection of specific chemical plant infrastructure and environmental monitoring in the petrochemical industry.

[FR Doc. 2014–21580 Filed 9–9–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Summary Notice No. PE–2014–72]

Petition for Exemption; Summary of Petition Received

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of petition for exemption received.

SUMMARY: This notice contains a summary of a petition seeking relief from specified requirements of 14 CFR. The purpose of this notice is to improve the public's awareness of, and participation in, this aspect of FAA's regulatory activities. Neither publication of this notice nor the inclusion or omission of information in the summary is intended to affect the legal status of the petition or its final disposition.

DATES: Comments on this petition must identify the petition docket number and must be received on or before September 30, 2014.

ADDRESSES: You may send comments identified by Docket Number FAA–2014–0633 using any of the following methods:

• *Government-wide rulemaking Web site:* Go to *http://www.regulations.gov* and follow the instructions for sending your comments electronically.

• *Mail:* Send comments to the Docket Management Facility; U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590.

• *Fax:* Fax comments to the Docket Management Facility at 202–493–2251.

• *Hand Delivery:* Bring comments to the Docket Management Facility in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Privacy: We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. Using the search function of our docket Web site, anyone can find and read the comments received into any of our dockets, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78).

Docket: To read background documents or comments received, go to *http://www.regulations.gov* at any time or to the Docket Management Facility in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Jake Troutman, (202) 267–9521, 800 Independence Avenue SW., Washington, DC 20951.

This notice is published pursuant to 14 CFR 11.85.

Issued in Washington, DC, on September 5, 2014.

Brenda D. Courtney,

Acting Director, Office of Rulemaking.

Petition for Exemption

Docket No.: FAA–2014–0633

Petitioner: NextEra Energy, Inc.

Section of 14 CFR: parts 21, 27, 45.23(b), 61.113(a) and (b), 61.133(a), 91.7(b), 91.9(b)(2), 91.103, 91.109, 91.119, 91.121, 91.151(a), 91.203(a) and (b), 91.319(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(2), 91.417(a) and (b), and 91.1501.

Description of Relief Sought: The petitioner is seeking an exemption to commercially operate small unmanned aircraft systems (sUAS) 15 pounds or less on property that is owned or controlled by NextEra or in utility right of way to inspect energy infrastructure and identify problems in the delivery of electricity to customers.

[FR Doc. 2014–21584 Filed 9–9–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

[Docket No. FHWA–2014–0006]

Final Core Toll Concessions Public-Private Partnership Model Contract Guide

AGENCY: Federal Highway Administration (FHWA), Department of Transportation (DOT).

ACTION: Notice.

SUMMARY: The Moving Ahead for Progress in the 21st Century Act (MAP–21) requires DOT and FHWA to develop public-private partnership (P3) transaction model contracts for the most popular type of P3s for transportation projects. Based on public input favoring an educational, rather than prescriptive,

contract model, on February 6, 2014, FHWA published a draft of the Core Toll Concession Model Contract Guide (Guide) (Docket No. FHWA–2014–0006), requesting comments by March 10, 2014. The FHWA received a total of 133 public comments regarding different aspects of the Guide and of P3s in general. With this notice, FHWA publishes a revised Guide reflecting these comments. In coming months, FHWA will publish additional draft guides for public comment: An Addendum to the Core Toll Concession Model Contract Guide that will address additional contract provisions, and an Availability Payment Concession Model Contract Guide that will cover this popular type of P3 arrangement.

The revised Core Toll Concession Model Contract Guide can be found on the Docket (FHWA–2014–0006) and at the following link: *http://www.fhwa.dot.gov/ipd/pdfs/p3/model_p3_core_toll_concessions.pdf.*

FOR FURTHER INFORMATION CONTACT: Mark Sullivan, Office of Innovative Program Delivery, 202–366–5785, *mark.sullivan@dot.gov,* Federal Highway Administration, 1200 New Jersey Avenue SE., Washington DC 20590; Alla Shaw, Office of the Chief Counsel, 202–366–1042, *alla.shaw@dot.gov,* Federal Highway Administration, 1200 New Jersey Avenue SE., Washington DC 20590; or Prabhat Diksit, 720–963–3202, *prabhat.diksit@dot.gov,* 12300 W. Dakota Avenue, Suite 370, Lakewood, CO 80228.

Comments Received and Addressed Regarding the Guide

On February 6, 2014, FHWA published a draft of the Model P3 Core Toll Concession Contract Guide (Docket No. FHWA–2014–0006). The draft requested comments on each of the substantive topics discussed in the Guide. The FHWA received a total of 133 comments from multiple stakeholders regarding different aspects of the Guide and in varying degrees of detail. In particular, FHWA received 60 comments from the Texas Department of Transportation (TxDOT), 13 comments from Ernst & Young Infrastructure Advisors (Ernst & Young), 10 comments from Professional Engineers in California Government (PECG), 9 comments from the Drive Sunshine Institute, 6 comments from the Associated General Contractors of America, 5 comments from the Commonwealth of Virginia, 5 comments from the American Road & Transportation Builders Association (ARTBA), and 25 comments from private citizens.

A minority of comments addressed the desirability of P3s as a matter of public policy, while the majority of comments focused on the terms of the concession agreement described by the Guide (including terms relating to tolling regulation, benefit sharing, supervening events, changes in equity interest, changes in law, defaults, early termination, and handback) without commenting on the desirability of P3s generally.

The FHWA considered all of the comments it received on the Guide and revised the relevant sections of the Guide as described below. In addition, FHWA made clarifying revisions to certain sections of the Guide as noted below.

Response to Comments

Note: The comments below, as does the Guide itself, often refer to the ''Department''—the public authority granting rights via a concession agreement. In all cases, this entity should be understood to be a State or local transportation agency, not the United States Department of Transportation.

Chapter 1: Introduction

1. The TxDOT commented that the concept of ''demand risk'' described in Section 1.1 of the Guide should be expanded to include toll collection risk; the term ''revenue risk'' captures both demand and toll collection risk.

The FHWA agreed with TxDOT's comment and has revised Section 1.1 accordingly.

Chapter 2: Tolling Regulation

2. The comments received on the Guide's review of tolling regulation generally related to the setting of tolls, the administration of toll collection, and the use of toll revenues in the context of a concession agreement.

The TxDOT commented that the Guide should more clearly explain that changes in User Classifications have potentially significant public policy implications and therefore the Department often retains broad discretion whether to approve changes. The TxDOT also commented that the Guide should note that changes in User Classifications requested by a Developer can also affect future toll revenues and that toll concession agreements may contain provisions for adjusting the Department's revenue sharing if the change is projected to increase the Developer's revenues.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

3. Ernst & Young commented that the Guide should consider the amount by which tolls can be raised in a given year, particularly where the maximum allowable toll increase has not been made in prior years, and should include a discussion of the costs and benefits of a tolling strategy which maximizes revenue versus throughput.

The FHWA agreed with Ernst & Young's comments and has revised the Guide accordingly.

4. The TxDOT suggested that Footnote 1 of the Guide be deleted. The TxDOT disagreed with FHWA's suggestion in Footnote 1 that toll concession agreements for projects with an element of public financing might include provisions to allow lender rate covenants to control, such that toll rates may exceed the maximum toll rates specified in the toll concession agreement. The TxDOT noted that Footnote 1 cites Private Activity Bonds (PAB) as the type of financing where this may be appropriate but, according to TxDOT, including lender rate covenants on such terms is not accepted practice for PABs financings, which are public financings only in the sense that a public entity serves as a conduit issuer for the benefit of a private Developer, and the Guide is directed at toll concessions with private concessionaires. Such provisions, TxDOT suggested, can undermine essential public policy that supports the toll rate regulation decisions of the State or local government, and could be abused in order to elevate private profit.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

5. The TxDOT additionally commented that the contract language set forth in the Guide's section on Tolling Regulation misleads the reader to think that giving the Developer sole discretion in setting and changing toll rates is the norm. The TxDOT noted that, in its experience, such discretion is the exception and not the norm. Accordingly, TxDOT suggested that the Guide include sample contract language that establishes maximum toll rates and terms for how the maximum may change over time.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

6. The TxDOT commented that, in certain instances, a regional tolling authority provides toll collection and administration rather than the Department because the regional authority may have a statutory right and obligation to provide tolling services for all tolled facilities. The TxDOT suggested that the Guide should

therefore mention this potential circumstance and that the Guide should call for working out the terms of a tolling services agreement with such a tolling authority before proposal submission so that proposers know what pricing, terms and conditions to expect.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

7. The TxDOT suggested deleting the statement that the agreement with the tolling authority is ''typically known as a 'Toll Enforcement and Violation Processing Services Agreement'.'' The TxDOT felt that the statement is not necessary and the term is not used across all jurisdictions. The TxDOT additionally suggested that the section also should state that such an agreement may be with the Department or may be directly with a regional tolling authority.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

8. The TxDOT commented that FHWA should revise the sample contract provision which implies that it is the Department that has the primary responsibility to coordinate with law enforcement agencies to bring to bear toll enforcement services. The TxDOT noted that, while toll concession agreements often provide for Department assistance to the Developer in arranging such law enforcement, they commonly state that the Developer is primarily responsible for coordinating with law enforcement agencies for toll enforcement.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

9. The ARTBA commented that the Guide should include additional discussion about issues surrounding the collection and enforcement of tolls, including the authority, responsibility and tools available to the Department and Developer in the collection and enforcement of tolls.

In response, FHWA notes that the Guide does address possible approaches in a general manner in Section 2.5.2. However, given that the rights and responsibilities of the Developer to enforce toll collection is highly dependent on applicable State and local laws, it is difficult to comment in great detail outside the context of a particular project and a particular State, and such discussion is outside the scope of the Guide.

10. The TxDOT and Ernst & Young provided related comments on the Guide's statement that ''it is common for the uses of Toll Revenues in the Concession Agreement and flow of funds in Financing Documents to mirror each other.'' They suggested that the Guide overstates typical flow of funds provisions in toll concession agreements. They further commented that toll concession agreements tend to require first priority use for paying operating and maintenance expenses (including sums owing the Department) and lowest priority use for distributions to equity (after all other project costs are covered), but otherwise leave it to the lenders and Developer to determine the full order of priority for use of Toll Revenues. The TxDOT and Ernst & Young commented that the text should be revised accordingly.

The FHWA agreed with these comments from TxDOT and Ernst & Young and has revised the Guide accordingly.

11. The PECG commented that the Guide should include language requiring the Developer to use Toll Revenue to meet payment obligations to the Department, operating and maintenance expenses, taxes, debt service, and other costs, before making payments to equity.

Section 2.6 of the Guide includes these payment obligations in its discussion of provisions designed to prevent the Developer from diverting Toll Revenues for unauthorized purposes. The FHWA revised the Guide to note that a Department may prescribe a list of authorized uses of Toll Revenues, but recognizes that some Concession Agreements may leave the decision regarding the full order of priority of payment obligations to the Lenders and the Developer.

12. The PECG provided the following comment: The Guide should give the Department the right to suspend tolling in case of an emergency or for any other purpose, and the Developer should not be entitled to lost toll revenue due to such action by the Department.

The FHWA appreciates that Concession Agreements will often include provisions to this effect, and such provisions are expressly described in Section 2.7.1 of the Guide.

13. The PECG commented that the Guide should not provide the Developer with an entitlement to lost revenue if access to the project is impeded for a beneficial public purpose.

The FHWA notes that the Developer's right to compensation is limited to those matters defined as Compensation Events. The extent to which a Concession Agreement may provide a Compensation Event under these circumstances would typically be determined by the facts and circumstances relevant to the particular project, and to the extent that the Department is obliged to undertake certain obligations with respect to the Project (e.g. providing ongoing access) and does not, such a failure constitutes a Compensation Event. The FHWA does not believe a change to the Guide is necessary.

14. The PECG commented that the Guide should not provide the Developer with an entitlement to lost revenue if toll collection is temporarily suspended to benefit or safeguard the public.

The FHWA appreciates that Concession Agreements will often include provisions to this effect, and such provisions are expressly described in Section 2.7.1 of the Guide.

15. The FHWA determined that it would be beneficial to users of the Guide to include a table setting forth toll rate restrictions and has included such table in Section 2.4.

Chapter 3: Benefit Sharing

The comments received on the Guide's review of benefit sharing generally related to requests to include a broader discussion on gross revenue-based sharing mechanisms and other types of benefit sharing in a refinancing context.

16. The TxDOT and Ernst & Young provided similar comments to the effect that the Guide should avoid prescribing one approach over another in relation to triggers for revenue sharing. Instead, they suggested that FHWA should consider including discussion of gross revenue-based sharing triggered by absolute revenues in addition to revenue sharing triggered by actual equity IRR. They also commented that the Guide should include a discussion of the challenges associated with using actual equity internal rate of return (IRR) as a trigger and guidance on how to manage toll concession windfalls.

The FHWA agreed with these comments from TxDOT and Ernst & Young and has revised the Guide accordingly.

17. Ernst & Young commented that FHWA should clearly highlight that in a properly structured P3 procurement, both equity and lenders are at risk and the public benefits from this fact. Ernst & Young also suggested that (a) FHWA consider whether the Guide should require lenders to share in refinancing gains, and (b) the discussion of sharing refinancing gains in the Guide should differentiate between gains from refinancing based on higher than expected or proven traffic versus market movement in interest rates.

This change was not incorporated as it was determined that this issue was

already addressed by the Guide as a whole.

18. In Section 3.2.2, FHWA included a table setting forth bands and revenue payment percentages.

19. In Section 3.2.2, FHWA clarified the concept of ''deferred amounts.''

20. In the Glossary, FHWA added a definition for the term ''caps and floors.''

Chapter 4: Supervening Events

The comments received on the Guide's review of Supervening Events generally related to the scope of various types of Supervening Events, the considerations and rationale driving the allocation of risk under a Supervening Events regime, the compensation to be paid to the Developer in respect of a Supervening Event, and certain public policy concerns in respect to Supervening Events.

21. The TxDOT suggested that FHWA clarify that some Delay Events are also Compensation Events, and may affect both the cost and the schedule of a project. They further suggested that Sections 4.1 and 4.3.3 should mention that Delay Events may allow a Developer to extend contractual deadlines and may provide a Developer with relief from the assessment of performance points or noncompliance points.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

22. The TxDOT suggested that the term Compensation Event should be expanded to include events that deliver value for money by allocating risk to the Department.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

23. The TxDOT commented that the sample definition of the term Compensation Event should include certain additional events, including: Department-caused delay; Department-ordered suspension of tolling; Department releases of hazardous materials; unreasonable, unjustified delay by permitting agencies in issuing key permits; utility owner delay; and differing site conditions.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

24. Ernst & Young commented that Departments should be mindful that there is a distinction between the cost of delays and lost revenue. They suggested that, with respect to lost revenue, the calculation options presented in the Guide should also contemplate the possibility of paying pre-determined, liquidated damages amounts, avoiding the need to re-open the financial model.

The FHWA acknowledges the distinction between delay costs and lost revenue. The proposed approach to calculating lost revenue is one that Departments may choose to consider after consultation with their financial advisors, but it has not been adopted in the U.S. to date and therefore has not been incorporated into the Guide. A change to the Guide is not necessary to address this comment.

25. The TxDOT suggested that the Guide reflect the fact that a toll concession agreement may include provisions which adjust compensation under the agreement based on the development of revenue-enhancing facilities which were not planned at the time the agreement was executed.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

26. Ernst & Young highlighted the importance of the Competing Facilities provisions, and noted that these merit significant policy consideration by a Department.

The FHWA agrees that these clauses should be carefully considered in light of the important public policy issues they raise and the Guide recommends that Departments do so in light of the facts and circumstances relevant to each individual project. A change to the Guide is not necessary to address this comment.

27. The PECG suggested that the Guide should not include a ''non-compete'' clause.

The FHWA acknowledges the important public policy issues raised by competing facilities clauses, and Section 4.3.2 of the Guide describes some of the reasons why Departments have chosen to include them in contracts for P3 projects. A change to the Guide is not necessary to address this comment.

28. The PECG suggested that a Department should not be required to pay the Developer if another government agency not within the Department's control engages a private entity to develop a project that affects demand for the Department's project.

The FHWA acknowledges the intra-governmental issues which may arise as a result of such provisions, and notes that Section 4.3.2 of the Guide suggests these risks be addressed by providing protection to the extent the Department has discretionary authority over facilities constructed by other governmental entities. Each project will present unique challenges in this regard, however. A change to the Guide is not necessary to address this comment.

29. The TxDOT commented that while the Guide states that Departments are likely to achieve optimal risk transfer regarding geotechnical, hazardous substance, utility, and endangered species risks by providing Compensation Event relief for unknown matters, this allocation varies considerably from project to project, and will depend upon particular project characteristics, the magnitude of the risk presented on the particular project, the degree of competition, and other factors. The TxDOT suggested that the Guide should indicate that optimal risk allocation for these risks depends on the attributes of each project and procurement.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

30. The TxDOT commented that while the text regarding Force Majeure Event termination in the Guide states that providing a termination right for extended Delay Events other than Force Majeure Events is contrary to international best practice, it is common U.S. practice to include specified Delay Events in addition to Force Majeure Events in the determination of extended delay triggering a right to terminate. The TxDOT stated that the principle supporting such termination is that exigencies outside the control of the parties have conspired to frustrate the fundamental purpose of the transaction. Certain Delay Events in addition to Force Majeure Events fit within this principle and therefore should be validated in the text as well as the sample contract language.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

31. The TxDOT commented that the Guide should acknowledge that in relation to a Force Majeure or Delay Event, a contract may trigger termination rights based on a cumulative number of non-consecutive days of delay as an alternative to a specified number of consecutive days of delay.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

32. The TxDOT commented that the application of the ''no better and no worse'' principle is an oversimplification of the Supervening Events regime and FHWA should provide greater clarity regarding the application of this concept.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

33. The PECG suggested that the Guide should explicitly transfer all

Force Majeure Event risk to the Developer, to avoid the potential costs associated with Force Majeure Events being borne by a Department.

This comment reflects a misunderstanding of the economic impact of transferring certain risks and the rationale for P3 procurements. Departments will not receive value for money if all risk of Force Majeure Events is transferred to the Developer given the tools available to Developers to mitigate the effects of such risks and the contingencies they would have to price if asked to take such risks. As Departments are familiar with this risk on non-P3 projects, value for money is typically optimized by retaining the financial risk associated with Force Majeure Events. A change to the Guide is not necessary to address this comment.

34. A private citizen expressed concern about the allocation of costs associated with earthquake damage to P3 projects.

The consequences of Force Majeure Events such as earthquakes are allocated pursuant to the Delay Event regime. The Developer will be given additional time to complete the work, but not compensation to pay the cost of repairing the loss as such costs can be insured against. This is described in Section 4.3.3 of the Guide.

35. The TxDOT commented that FHWA should expand its discussion of deductibles to highlight the differences between ''aggregate'' and ''per occurrence'' deductibles, and to provide information on the details, advantages and disadvantages of both. In addition, TxDOT commented that the Guide should state that deductibles usually do not apply to Compensation Events which are caused by or within the control of the Department.

The FHWA acknowledges that deductibles may be applied to Supervening Events in some Concession Agreements, and has revised the Guide to include a general discussion of deductibles. However, FHWA thinks that the value provided to the Department from including deductibles can be overstated except in certain unique circumstances (such as where a Compensation Event is susceptible to numerous *de minimis* claims). As Departments should look to their advisors on a case-by-case basis for advice on when this is appropriate, FHWA believes that a more detailed discussion than the one provided is not necessary to be included in the Guide.

36. The TxDOT suggested that the Guide mention that market participants may elect to utilize an objective discount rate, such as the Developer's Equity IRR or weighted average cost of capital as indicated in the Base Case Financial Model, rather than calculating present value using an agreed risk adjusted discount rate.

The FHWA acknowledges that there may be appropriate alternative means to discount the relevant sums and encourages Departments to seek advice from their financial advisors as to the appropriate method to use in a given circumstance.

37. The TxDOT commented that FHWA should revise the model provision regarding a Developer's obligation to obtain additional debt or equity following a Compensation Event. The proposed revision would reflect certain precedents which condition compensation on the Developer's ability to meet debt coverage ratios and require the Developer to use ''diligent efforts'' to obtain additional funds to cover the cost impacts of the Compensation Event.

The FHWA acknowledges that there are transactions in the market that make reference to debt service coverage ratios; however, the ultimate standard in such documents is whether or not the Developer is able to raise funding (which will include factors broader than the ability of the Developer to meet ratio tests). In some jurisdictions the concept of ''diligent efforts'' is vague and may be read to suggest a level of effort that is synonymous with ''best efforts.'' This standard would not be in the interest of the Department or the Developer, as it is traditionally interpreted to require a party to spend additional funds and do all things possible, even if not reasonable, to achieve the desired outcome. The Department's compensation sum would have to be increased to pay for the impact of such potentially unreasonable actions, which would not represent value for money. A change to the Guide is not necessary to address this comment.

38. The PECG commented that the list of events which constitute a Compensation Event should be limited to (i) a breach of the Concession Agreement by a Department, and (ii) the development or implementation of any change in the Work or technical requirements applicable to the Work that the Department has directed the Developer to perform pursuant to a Change Order or a directive letter pursuant to the Concession Agreement.

The proposed changes to the definition of Compensation Event are inconsistent with the allocation of risks on the basis of value for money. A change to the Guide is not necessary to address this comment.

39. Ernst & Young commented that FHWA should consider whether the Guide needs to include reference to the fragmentary network.

The FHWA believes this is a useful touch-stone for Departments to see, as it is a method that is familiar to them in the context of design-build contracting. A change to the Guide is not necessary to address this comment.

40. The TxDOT suggested that the discussion of toll concession agreements in the Guide should be expanded to include noncompliance events and points regimes, financial modeling, and the role of an independent engineer.

Financial modeling is discussed in the Guide, and noncompliance points and the role of the independent engineer will be addressed in the addendum. A change to the Guide is not necessary to address this comment.

41. The FHWA clarified the term ''fragmentary network'' as used in Section 4.4.2.

Chapter 5: Change in Equity Interests

The comments received on the Guide's handling of changes in equity interests generally related to the extent to which the Department should prohibit a change in equity interests, the qualifications to consider for approving a new owner, and related terminology.

42. The TxDOT commented that Section 5.1 should be revised to mention that, in addition to Developer experience with similar projects, a Department may value Developer experience which demonstrates ability to effectively manage all aspects of future work on a project.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

43. The TxDOT also commented that the Guide should acknowledge that (a) a change in control over an investor can have a significant effect on the management, staffing and funding of the investor and Developer, and (b) Department approval should be required for any changes in the vertical chain above the Developer. In addition, TxDOT noted that the concept of Change in Ownership should be changed to Change in Control to reflect the impact of voting rights and other forms of control that may not be strictly linked to ownership.

The FHWA has revised the relevant footnote within the Guide to clarify that approval should be required for changes in the vertical chain between the entities that were evaluated and/or any parents of such entities that the Department considers important to the success of the project. However, FHWA disagrees that the term ''Change in Control'' better indicates the intent of these provisions than the term ''Change

in Ownership'' since a change in ownership that does not affect a change in control may still have a material adverse effect on the Project, which these provisions are intended to prevent.

44. The TxDOT commented that the standard for Department approval of a Change in Ownership should be narrowed in light of certain precedent which uses a standard that assesses whether a potential owner has the resources, qualifications and experience to perform the Developer's obligations, and no conflict of interest with the Department exists.

In FHWA's view, the factors cited in this comment do not lead to a different result than the formulation described in the Guide, and in fact may restrict the Department's right to reject a change in ownership. While some Concession Agreements do cite these factors, the evaluation mechanism provided for in the Guide will require the Department to weigh all factors against one another, and the resulting determination will be substantially the same as asking whether the change will result in a material adverse effect. For these reasons, FHWA believes a change to the Guide is not necessary to address this comment.

45. The TxDOT also commented that the definition of Related Entity should include all entities upstream from the Equity Investors.

The FHWA has not made any changes in response to this comment because it is based on a misunderstanding of the entities that will constitute the Equity Investors.

Chapter 6: Change in Law

The comments received on the Guide's review of the issues surrounding change in law generally related to associated risk allocation and the scope of relevant terminology and contract language.

46. The TxDOT commented that the Guide should not emphasize foreseeability as a consideration in risk allocation in relation to a Change in Law, and instead should focus on value for money as the most relevant consideration in allocating risk in relation to a Change in Law.

In FHWA's view, the concept of foreseeability is not intended to go beyond changes in law that were foreseeable at the bid date based on draft legislation and bills. It is not intended to suggest that because changes in a particular category of law are inevitable at some point, they are foreseeable. The FHWA has revised the Guide to clarify this point.

47. The TxDOT further commented that the definition of Law should not include permits to avoid conflation with the definition of Governmental Approvals and, therefore, the definition of Law should be revised to provide greater specificity to the concept.

The FHWA has incorporated this comment into the Guide. Some Concession Agreements may treat changes in permits similarly to changes in law generally, though this will depend on the nature of the required permits and the jurisdiction of various Governmental Authorities in the context of each individual project. As a result, the reference to permits is bracketed in the example provision.

48. The PECG commented that the Guide should protect the Department from financial claims by a Developer adversely affected by a Change in Law promulgated by a legislature, which is not within the Department's control.

In FHWA's view, the allocation of risk associated with changes in law is reflective of the relative ability of each of the parties to absorb the risks associated with changes and to mitigate against their respective effects. A change to the Guide is not necessary to address this comment.

Chapter 7: Defaults, Early Termination and Compensation

The comments received on the Guide's review of defaults, early termination, and related compensation generally related to the scope and nature of defaults covered by a Concession Agreement, the remedies exercisable by the parties following a default, the cure periods in respect of defaults, and the mechanisms for calculating (and valuing the components comprising) termination compensation.

49. The TxDOT suggested that the Guide include provisions which allow for termination due to (i) the failure or inability of the Developer to achieve financial close, with the measure of compensation depending on whether the failure is excused or not excused, and (ii) an adverse court ruling which prevents the Developer from continuing performance, with a measure of compensation similar to the one provided following termination due to an extended Force Majeure Event.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

50. The TxDOT commented that the Guide should acknowledge that certain precedents do not include a limitation on set-off that prevents termination compensation being less than the outstanding project debt as a result of such set-off.

This comment has been incorporated into the Guide, although it should be noted that the limitation on set-off does not apply to circumstances where the termination arises due to a Developer Default. In those instances, full set-off is contemplated because the Lenders have the opportunity to step in and cure the Developer Default prior to termination.

51. The TxDOT commented that the cure period available following a monetary default under the Guide should be shorter than the cure period available following other types of material default. The TxDOT further suggested that the Guide should acknowledge that some Developers and lenders agree to cure period comity between Developer and lenders.

The suggestion that the Guide distinguish between payment defaults and other defaults has been incorporated into the Guide. Regarding cure period comity, a change to the Guide is not necessary because cure period comity is not the typical approach taken.

52. The TxDOT suggested that the Guide acknowledge that in certain precedent toll concession agreements, the Developer's termination rights are restricted to two types of Department Defaults: (i) Uncured failure to pay a material sum to the Developer, and (ii) Department confiscation, condemnation, or appropriation of a material part of the Developer's interest; performance defaults by a Department may ripen into a failure-to-pay default.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly. The Guide introduces discussion regarding where it may be appropriate to include performance-related defaults.

53. The TxDOT commented that the method for calculating termination compensation in the Guide should be revised to reflect the calculation method utilized in certain precedents which provide protection to the lenders and market value for the Developer's equity investment (if such investment is greater than the outstanding debt).

Though the drafting is somewhat different, there is not much substantive difference between the calculation mechanism reflected in the Guide and that proposed by the commenter, though it should be noted that it is appropriate to compensate equity irrespective of how large or small its value is as compared to the outstanding debt. A change to the Guide is not necessary to address this comment.

54. The TxDOT suggested that the Guide mention, as one option for valuing the equity in the Developer, that certain precedents allow the parties to

produce evidence in the event of a dispute for ultimate determination by a court or other dispute resolution forum.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

55. The TxDOT commented that the Guide should provide a comprehensive list of Developer Defaults in acknowledgement that different defaults have different cure periods and methods for curing.

Section 7.3.1 of the Guide includes a comprehensive list of Developer Defaults, and Section 7.3.2 of the Guide states that cure periods may vary depending on the nature of the Developer Default. A change to the Guide is not necessary to address this comment.

56. The TxDOT suggested that the Guide include closure of any lane or other portion of the Project (unless permitted under the agreement) as a Developer Default.

The Developer Default listed at clause (a) of the definition captures this failure by the Developer; the FHWA agrees with the commenter that continued access is a significant objective of the Concession Agreement (and therefore would constitute a failure to comply with a material obligation if not provided by the Developer). A change to the Guide is not necessary to address this comment.

57. The TxDOT commented that the Guide should acknowledge that a particular toll concession agreement may provide for a range of remedies for Developer Default, but limit the remedy of termination to defaults specifically agreed to be material in nature.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

58. The TxDOT commented that the Guide should be revised to state that even if a Developer Default is cured, the Developer may remain liable for Department losses attributable to the default.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

59. The TxDOT commented that because many toll concession agreements provide for termination due to accumulated delay from Delay Events, and not just due to the narrowly defined Force Majeure Events, the discussion regarding likelihood of termination should be revised.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

60. The TxDOT commented that the approach to termination compensation following a Developer Default included in the Guide should be amended to reflect an alternative approach available in the market. In particular, TxDOT felt that the approach taken in the Guide should ensure that equity is wholly at risk of loss and lenders face a meaningful financial consequence if a project is terminated following a Developer Default.

The termination calculation mechanism reflected in the Guide will not provide equity with compensation in the event of a Developer Default. In addition, although it is common to discount compensation payable to lenders after completion of the project (which is reflected in the Guide), it is often the case that such a discount is not imposed prior to completion because of the risks otherwise inherent in completing a project. A change to the Guide is not necessary to address this comment.

61. The TxDOT suggested that the Guide include a discussion of provisions in certain precedents which provide for no termination compensation for termination due to Developer Default, including where: (i) The Developer files for bankruptcy and rejects the toll concession agreement; (ii) the Collateral Agent receives a replacement agreement from the Department in accordance with the original agreement; and (iii) the Developer wrongfully exercises a termination right.

As it has been noted in the Guide, in the context of a greenfield project where the Department receives a new asset, some measure of compensation is typical and necessary; otherwise, the Developer may be entitled to assert a claim for unjust enrichment. A change to the Guide is not necessary to address this comment.

62. The PECG commented that the Guide should provide the Department with the ability to take over the project should the Developer become unable to meet its obligations.

The Concession Agreement will typically include a Developer Default for failure to pay amounts when due to the Department. This is addressed in Section 7.3.1 of the Guide.

63. The TxDOT suggested that the Guide state that the principle behind the measure of compensation is rescission and restitution.

This is a technical legal issue that is not relevant to the intended audience for the Guide. A change to the Guide is not necessary to address this comment.

64. The TxDOT commented that the discussion of termination compensation in Section 7.4.2 should mention lender breakage costs.

This comment is captured by the first bullet point in the section, which refers to all amounts owed to the lenders. A change to the Guide is not necessary to address this comment.

65. The TxDOT commented that the Guide should discuss the various legal mechanisms used in certain precedents to establish the time at which a termination for convenience is effective.

This is a technical legal issue that is not relevant for the intended audience of the Guide. A change to the Guide is not necessary to address this comment.

Chapter 8: Handback

The comments received on the Guide's review of the issues surrounding changes in equity interests generally related to the Handback Reserve Account.

66. The TxDOT commented that the Guide should acknowledge that certain precedents authorize the use of funds in the Handback Reserve Account for safety compliance work.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

67. The TxDOT also suggested that the Guide should acknowledge that certain precedents rely on a mechanism other than an independent consultant in determining the amount necessary for the Handback Reserve Account.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

Appendix A: Glossary

The comments received on the Glossary generally related to clarifications on, and scope of, various defined terms.

68. The TxDOT commented that the definition of demand risk should be expanded to include toll collection risk.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

69. The TxDOT commented that the definition of Design-Build Contract should be revised to specifically mention design work.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

70. The TxDOT commented that the definition of Dispute Resolution Mechanism should include disputes review boards.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

71. The TxDOT commented that the definition of Express Toll Lane should be narrowed to limit this concept to traffic lanes subject to tolls which vary in accordance with demand.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

72. The TxDOT commented that the definition of Gross Revenue should be revised to clarify that the insurance proceeds included in Gross Revenue are insurance proceeds which are received in substitution for, or to compensate for, loss of tolls or user fees.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

73. The TxDOT commented that the definition of Managed Lane Facility should be revised to include language which references change in demand.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

74. The TxDOT commented that the definition of Prohibited Person should reserve the right to prohibit an individual based on a potential investor's egregious reputation, such as suspected affiliation with criminal organizations.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

75. The TxDOT commented that the definition of Subcontractor Breakage Costs should include costs of demobilization.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

76. The TxDOT commented that the definition of Work should include design work.

The FHWA agreed with TxDOT's comment and has revised the Guide accordingly.

77. The TxDOT commented that the definition of Construction Period should be revised to distinguish between the Service Commencement Date and Substantial Completion.

A change to the Guide is not necessary to address this comment. For purposes of simplification, the Guide does not distinguish between Substantial Completion and Service Commencement, as the distinction is not relevant to the Guide.

78. The PECG commented that the definition of Discriminatory Change in Law should be narrowed to provide greater certainty regarding the types of change in law captured under this concept.

A change to the Guide is not necessary to address this comment. The example definition of Discriminatory Change in Law accords with market practice.

Other General or Public Policy Comments

79. A private citizen commented that the Guide should state that P3 transactions include financing of all costs and liabilities incurred on a particular project.

The FHWA appreciates the commenter's concern that P3 projects' transfer of costs does not necessarily mean a transfer of risks; however, a common feature of P3 projects (as reflected in the Guide) is that the parties generally allocate risks (and costs associated with them) to the party best positioned to manage them. It would be incorrect to suggest that P3 projects involve the private sector financing all costs and liabilities associated with the relevant project. A change to the Guide is not necessary to address this comment.

80. The Commonwealth of Virginia commented that FHWA should include an explanation of the advantages and challenges associated with risk allocation under a P3 procurement model in a way that is easily understandable to public decisionmakers.

The FHWA agrees that each project is unique, and that the circumstances of each project will determine the allocation of risk and responsibilities for the life of the project. This aspect of P3 transactions has been highlighted throughout the Guide, though not necessarily in the context of public funding decisions (a topic which has not been addressed in the Guide). However, FHWA agrees that the extent of public funding involved in any project will have an impact on the allocation of risk associated with that project.

81. The Commonwealth of Virginia also commented that FHWA should consider a review of Federal procurement requirements and regulations to supplement the Guide.

A comprehensive review of the Federal procurement requirements is not within the scope of the Guide.

82. The Commonwealth of Virginia commented that the Guide should reflect that under an availability payment structure, the risk of maintaining the level of service of a particular road will be transferred to the private sector.

The FHWA will address availability payment structures and related issues in a separate guide in due course.

83. A private citizen observed that under California law, a State agency is responsible for monitoring compliance with environmental regulations.

The FHWA notes that Concession Agreements cannot alter existing State or local law mandates that require a particular entity to maintain legal liability for a particular aspect of a project. However, Concession Agreements may transfer the risk associated with that aspect of the project by: (a) Allocating responsibility to one party (such as the Developer) for paying and performing the relevant obligations on behalf of the other party (such as the Department); and (b) requiring that the party responsible for paying and performing thereafter indemnify the other party for the resulting consequences. As the issues associated with such requirements are highly dependent on applicable State and local laws, they have not been addressed in the Guide. A change to the Guide is not necessary to address this comment.

84. The PECG suggested that in P3 procurement the contractor should prepare plans and specifications to meet the standards of the Department.

The FHWA notes that the Concession Agreement will typically prescribe technical specifications that must be followed by the Developer, and will provide for review and approval by the Department of various design and construction submissions in the ordinary course. These matters are rarely contentious and will be consistent with Departments' experiences on other non-P3 transactions, so they have not been addressed in the Guide. A change to the Guide is not necessary to address this comment.

85. The PECG commented that the environmental and first 30 percent of design work should be completed by the Department and provided to the contractor.

The FHWA notes that Concession Agreements will typically require the Developer to construct the Project in accordance with environmental approvals that have been obtained by the Department. These matters are rarely contentious and will be consistent with Departments' experiences on other non-P3 transactions, so they have not been addressed in the Guide. A change to the Guide is not necessary to address this comment.

86. The PECG commented that construction inspection should be conducted by the Department.

Concession Agreements include completion tests which require, among other things, that the work is completed in accordance with the requirements of the Concession Agreement (including the technical specifications), and that the work must be verified by the Department. These matters are rarely contentious and will be consistent with Departments' experiences on other non-

P3 transactions, so they have not been addressed in the Guide. A change to the Guide is not necessary to address this comment.

87. The PECG commented that the Guide should direct Departments to specify standards of operation and maintenance if a particular P3 procurement is to include operation and maintenance.

Concession Agreements will specify the applicable operations and maintenance standards that must be complied with. The Developer will be required to comply with these at its own cost and expense. These matters are rarely contentious, so they have not been addressed in the Guide. A change to the Guide is not necessary to address this comment.

88. The PECG suggested that the Guide should reserve for the Department the right to access the project at all times, and require the Developer to maintain the project according to the Department's standards.

The Concession Agreement will typically permit the Department to have access to the Project for oversight purposes, and will include a variety of remedies for the Department in the event the Developer fails to meet the required operation and maintenance specifications (including the right of the Department to perform the obligations on behalf of the Developer). These matters are rarely contentious and will be consistent with Departments' experiences on other non-P3 transactions, so they have not been addressed in the Guide. A change to the Guide is not necessary to address this comment.

89. The PECG commented that the Guide should require Developer to maintain the project at full operational capacity at all times, with the Department able to levy fines for failure to comply with this requirement.

The FHWA notes that it is typical for Concession Agreements to include a requirement that the Developer must keep the Project open for traffic 24 hours a day, 365 days a year, following Substantial Completion. In the context of a demand risk transaction, where the Developer's revenue depends on keeping the road open to paying users, this obligation is not contentious and therefore has not been addressed in the Guide. A change to the Guide is not necessary to address this comment.

90. The ARTBA expressed support for including in the Guide a discussion of the risks and costs associated with preparing and submitting a proposal for a design-build project. The ARTBA also commented that the Guide should include a discussion of risk allocation and compensation as between the Developer and the design-build contractor in the same way that the Guide discusses the allocation of risk between the Department and the Developer, and that the Guide should provide recommendations regarding the relationship between the Developer and the design-build contractor.

The Department's contractual relationship is with the Developer, not with the design-build contractor. The Developer's approach to managing the risks allocated to it, whether through contracting or otherwise, is not appropriate for the Department to regulate. A change to the Guide is not necessary to address this comment.

91. A private citizen expressed concern about the characterization of a Concession Agreement as a lease in the underlying asset and the characterization of resulting revenue, and suggested that FHWA consider alternative methods of financing infrastructure.

The FHWA acknowledges that P3 procurement may be an unfamiliar tool for funding infrastructure investment to some members of the public. The characterization of the Developer's interest in the project (whether as a lease or a license) varies from one jurisdiction to another. Some Concession Agreements include the requirement for revenue sharing, which is similar to lease payments. The Concession Agreement will also require the Developer to pay all costs to operate and maintain the Project during the term of the agreement. The shouldering of these costs is also not unlike a lease payment. A change to the Guide is not necessary to address this comment.

92. Several private citizens provided suggestions for Departments considering P3 procurement, including the following: parties should adopt a statement of policies to reduce the risk of misinterpretation of a contract; FHWA should suggest that Departments undertake a cost/benefit analysis prior to deciding to engage in P3 procurement; in relation to a cost/benefit analysis for an existing asset, payments projected to a potential private operator should not exceed the cost of public bonds or borrowing should the asset continue to be operated by the Department. While these comments provide interesting and potentially useful ideas, they are not within the scope of the guidance mandated by MAP–21, and therefore, no changes to the Guide have been made as a result of these comments.

93. Several private citizens expressed support for transparency in P3 procurement and offered the following suggestions: P3 procurement should be subject to public auditing and financial statement disclosure requirements, and be approved by State and municipal elected officials; and P3 procurement contracts and related documents should be subject to the Federal Freedom of Information Act (FOIA) and all State and local public records disclosure laws.

Concession Agreements will typically include regular reporting requirements, particularly where there is a sharing requirement that requires ongoing review of costs and revenues. To the extent a Developer is a publicly traded company, public disclosure of financials continues to be required. Each jurisdiction will have its own rules and regulations regarding the procurement of P3 transactions and approvals required to be obtained prior to executing a Concession Agreement. Such rules and regulations are outside the scope of the Guide. Concession Agreements are subject to FOIA-type laws and regulations in many jurisdictions, though Developers typically have the right to specify that certain information is proprietary or constitutes a trade secret exempting it from disclosure in accordance with such laws. These matters are rarely contentious and will be consistent with Departments' experiences on other non-P3 transactions, so they have not been addressed in the Guide.

94. A private citizen expressed a concern that the use of tax-exempt bonds in relation to P3 procurement contradicted the stated goal of using P3 procurements to encourage the investment of private capital.

This comment reflects a misunderstanding of the way in which tax-exempt bond issuances work. Although a public issuer may nominally issue bonds for tax purposes (known as a conduit issuer), the proceeds raised from the sale of the bonds are immediately lent to the Developer under a separate loan agreement, and the Developer will be responsible for paying all amounts that are ultimately due to the bondholders. There is no public guarantee of debt when this approach is taken, and this structure is customary in the context of non-P3 arrangements as well. No changes have been made as a result of this comment.

95. The ARTBA commented that the Guide should address performance bonding requirements and the potential need for legislation to address performance security requirements for toll concessions.

The topic of performance security will be addressed in the addendum to the Guide.

96. Ernst & Young commented that the Guide should include a discussion of milestone or final acceptance payments.

The FHWA has not included a discussion of construction payments from States within the Guide. The ability and willingness of States to finance such payments, and the constraints associated with the sources of funds that might be used, will vary widely from one jurisdiction, and often one project to another. As a result, it would be difficult to describe general principles that will be of much utility to State DOTs. A change to the Guide is not necessary to address this comment.

97. Ernst & Young commented that FHWA should include a discussion of independent engineers and effective strategies for efficiently managing approvals, oversight, and disputes in the addendum.

While FHWA agrees that independent engineers and oversight mechanisms are important topics, the addendum will not address this topic. However, dispute resolution will be addressed in the addendum.

98. Ernst & Young commented that FHWA should consider partially variable term lengths in its discussion of term lengths in the addendum.

The FHWA notes that this topic may be considered in the addendum.

99. Ernst & Young commented that FHWA should consider including a discussion of plate denial.

The FHWA considered discussing this topic in the Guide, but ultimately did not address this issue as it may be considered controversial in some jurisdictions.

100. Ernst & Young commented that FHWA should address incentives to lender step-in/rectification and the role of direct agreements in the addendum.

The FHWA notes that lenders' rights will be addressed in the addendum.

101. The PECG commented that the Guide should include an indemnity of the Department to be provided by the Developer.

The FHWA notes that Indemnities will be addressed in the addendum.

Final Guide & Other Model Contract P–3 Products: The FHWA is not accepting any further comments regarding the Core Toll Concessions Public-Private Partnership Guide. The final version can be found on the docket (Docket No. FHWA–2014–0006) or at the following link: *http://www.fhwa.dot.gov/ipd/pdfs/p3/model_p3_core_toll_concessions.pdf.*

In addition to the Core Toll Concessions Public-Private Partnership Guide above, FHWA is also developing an Addendum document that will cover secondary, yet important provisions found in P–3 contracts. The secondary provisions will include issues such as performance standards, contract length, capacity triggers, consumer protections, Federal requirements, developer indemnities, lenders rights, insurance dispute resolution, and performance security. The provisions will be covered in less detail than the provisions in the Core Guide.

Another type of P–3 contract is the availability payment based contract. Funds from public sector revenues are the sources of payments to the private contractor in these transactions. These availability payments based transactions are increasingly popular. Many of the provisions found in the toll concessions guide will also be germane to the availability payments guide. The FHWA will be publishing an Availability Payments Model P–3 Contracts Guide in 2014.

Authority: Section 1534(d) of MAP–21 (Pub. L. 112–141, 126 Stat. 405).

Dated: August 27, 2014.

Gregory G. Nadeau,

Acting Administrator, Federal Highway Administration.

[FR Doc. 2014–21049 Filed 9–9–14; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

[Docket No. FTA–2014–0019]

Notice of Proposed Buy America Waiver for the Pad and Rubber Boot of a Concrete Block Used in New York City Transit South Ferry Station's Low Vibration Track System

AGENCY: Federal Transit Administration, DOT.

ACTION: Notice of Buy America waiver.

SUMMARY: The Federal Transit Administration (FTA) is waiving its Buy America requirements for the procurement by New York City Transit (NYCT), an agency of the Metropolitan Transportation Authority (MTA), of pads and rubber boots of a concrete block used in its Low Vibration Track (LVT) system on the basis of non-availability. The procurement for the pads and rubber boots are part of the South Ferry Station Project. This waiver is limited to this one procurement for the South Ferry Station Project, and conditioned upon the requirement that NYCT must complete the safety testing of U.S.-manufactured pads and rubber boots necessary to meets its specifications within the timeframe provided herein and substitute U.S.-manufactured pads and rubber boots for the foreign-made pads and rubber boots to the extent possible.

FOR FURTHER INFORMATION CONTACT: Richard Wong, Attorney-Advisor, at (202) 366–0675 or *richard.wong@dot.gov.*

SUPPLEMENTARY INFORMATION: The purpose of this notice is to announce that FTA is granting a non-availability waiver for the procurement of the pad and rubber boot of the concrete block used in NYCT's LVT system for the South Ferry Station Project.

With certain exceptions, FTA's Buy America requirements prevent FTA from obligating an amount that may be appropriated to carry out its program for a project unless ''the steel, iron, and manufactured goods used in the project are produced in the United States.'' 49 U.S.C. 5323(j)(1). A manufactured product is considered produced in the United States if: (1) The manufacturing processes for the product take place in the United States; and (2) the components of the product are of U.S. origin. A component is considered of U.S. origin if it is manufactured in the United States, regardless of the origin of its subcomponents. 49 CFR 661.5(d). If, however, FTA determines that ''the steel, iron, and goods produced in the United States are not produced in a sufficient and reasonably available amount or are not of a satisfactory quality,'' then FTA may issue a waiver (non-availability waiver). 49 U.S.C. 5323(j)(2)(B); 49 CFR 661.7(c).

On March 21, 2014, FTA granted a waiver for the pad and the rubber boot to MTA Capital Construction Company, a construction management company for MTA expansion projects that is responsible for managing NYCT's Second Avenue Subway (SAS) Project. This waiver was limited to Phase 1 of the SAS Project and in granting the waiver FTA expressed its expectation that MTA would continue its good faith efforts to seek U.S. manufacturers of the pad and rubber boot. On April 29, 2014, FTA followed up with a letter and reiterated its expectations that MTA continue to seek U.S.-manufactured pads and rubber boots and provided its findings on potential U.S. manufacturers.[1]

[1] FTA leveraged the resources of the U.S. Department of Commerce, National Institute of Standards and Technology (NIST), through an interagency agreement currently in place, and had NIST conduct a supplier scouting resulting in a

On July 14, 2014, NYCT requested another Buy America waiver for the pads and rubber boots to be procured for its South Ferry Station Project. Both NYCT and Construction Polymers Technologies, Inc. (CPT), the manufacturer of the concrete block for which the pad and rubber boots are components, have been conducting their own searches to find a U.S.-manufactured pad and rubber boot. On August 20, 2014, FTA confirmed that the U.S.-manufacturing processes of the pad and rubber boot that CPT had found meet the requirements of Buy America. However, NYCT asserts that safety testing of U.S.-manufactured pads and boots must be conducted before they can be used in NYCT's LVT system. NYCT represents that all of the necessary testing that it must undertake with respect to new and untested items such as the pad and the boot will take approximately three months *after* CPT conducts its own testing and provides its results to NYCT. FTA has been informed that CPT expects to produce its test results to NYCT on or about September 15, 2014.

Because of the timing of its contract award, which NYCT anticipates will occur by September 30, 2014, as well as the construction schedule, NYCT requested a waiver. If the waiver is not granted, NYCT asserts that there would be no Buy America compliant items that also meet its safety specifications, which cannot be waived.

On August 20, 2014, FTA published a **Federal Register** notice requesting comment on NYCT's waiver request. 79 FR 49371. No comments were received to the docket.

Notwithstanding FTA's determination that the U.S.-made pad and rubber boot that CPT has found meets the Buy America requirements for manufactured components, because testing for the new pads and rubber boots must be performed that would cause delays to the South Ferry Station Project, FTA is hereby granting a non-availability waiver for the pad and rubber boot. The waiver is limited to a single procurement for the South Ferry Station Project and conditioned upon NYCT completing its testing of the U.S.-made pad and rubber boot within approximately three months of receipt of CPT's test results. NYCT must notify FTA's Regional Counsel for Region II in writing within five business days of receipt of CPT's test results, and within five business days of completion of its testing regarding the results of testing. Once all testing is completed and if the testing confirms that the U.S-made pads and rubber boots meet NYCT's safety specifications, FTA expects NYCT to substitute the U.S.-made pads and rubber boots for the foreign-made items to the extent possible.

Dana Nifosi,

Acting Chief Counsel.

[FR Doc. 2014–21547 Filed 9–9–14; 8:45 am]

BILLING CODE;P

report completed by NIST of potential U.S.-manufacturers for the pad and rubber boot.

DEPARTMENT OF THE TREASURY

Office of the Comptroller of the Currency

Agency Information Collection Activities: Revision of an Approved Information Collection; Comment Request; Company-Run Annual Stress Test Reporting Template and Documentation for Covered Institutions With Total Consolidated Assets of $50 Billion or More Under the Dodd-Frank Wall Street Reform and Consumer Protection Act

AGENCY: Office of the Comptroller of the Currency, Treasury (OCC).

ACTION: Notice and request for comment.

SUMMARY: The OCC, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to comment on a revision to this information collection, as required by the Paperwork Reduction Act of 1995. An agency may not conduct or sponsor, and a respondent is not required to respond to, an information collection unless it displays a currently valid Office of Management and Budget (OMB) control number. Currently, the OCC is soliciting comment concerning a revision to a regulatory reporting requirement for national banks and Federal savings associations titled, ''Company-Run Annual Stress Test Reporting Template and Documentation for Covered Institutions with Total Consolidated Assets of $50 Billion or More under the Dodd-Frank Wall Street Reform and Consumer Protection Act.''

DATES: Comments must be received by November 10, 2014.

ADDRESSES: Communications Division, Office of the Comptroller of the Currency, Mailstop 2–3, Attention: 1557–0319, 400 7th St. SW., Washington, DC 20219. In addition, comments may be sent by fax to (571) 465–4326 or by electronic mail to *regs.comments@occ.treas.gov.* You may personally inspect and photocopy comments at the OCC, 400 7th St. SW., Washington, DC 20219. For security reasons, the OCC requires that visitors make an appointment to inspect comments. You may do so by calling (202) 649–6700. Upon arrival, visitors will be required to present valid government-issued photo identification and to submit to security screening in order to inspect and photocopy comments.

FOR FURTHER INFORMATION CONTACT: You can request additional information from Johnny Vilela or Mary H. Gottlieb, OCC Clearance Officers, (202) 649–5490, for persons who are deaf or hard of hearing, TTY, (202) 649–5597, Legislative and Regulatory Activities Division, Office of the Comptroller of the Currency, 400 7th St. SW., Washington, DC 20219. In addition, copies of the templates referenced in this notice can be found on the OCC's Web site under News and Issuances (*http://www.occ.treas.gov/tools-forms/forms/bank-operations/stress-test-reporting.html*).

SUPPLEMENTARY INFORMATION: The OCC is requesting comment on the following revision to an approved information collection:

Title: Company-Run Annual Stress Test Reporting Template and Documentation for Covered Institutions with Total Consolidated Assets of $50 Billion or More under the Dodd-Frank Wall Street Reform and Consumer Protection Act.

OMB Control No.: 1557–0319.

Description: Section 165(i)(2) of the Dodd-Frank Wall Street Reform and Consumer Protection Act [1] (Dodd-Frank Act) requires certain financial companies, including national banks and Federal savings associations, to conduct annual stress tests [2] and requires the primary financial regulatory agency [3] of those financial companies to issue regulations implementing the stress test requirements.[4] A national bank or Federal savings association is a ''covered institution'' and therefore subject to the stress test requirements if its total consolidated assets are more than $10 billion. Under section 165(i)(2), a covered institution is required to submit to the Board of Governors of the Federal Reserve System (Board) and to its primary financial regulatory agency a report at such time, in such form, and containing such information as the primary financial regulatory agency may require.[5] On October 9, 2012, the OCC published in the **Federal Register** a final rule implementing the section 165(i)(2)

[1] Public Law 111–203, 124 Stat. 1376, July 2010.

[2] 12 U.S.C. 5365(i)(2)(A).

[3] 12 U.S.C. 5301(12).

[4] 12 U.S.C. 5365(i)(2)(C).

[5] 12 U.S.C. 5365(i)(2)(B).

annual stress test requirement.[6] This rule describes the reports and information collections required to meet the reporting requirements under section 165(i)(2). These information collections will be given confidential treatment (5 U.S.C. 552(b)(4)).

In 2012, the OCC first implemented the reporting templates referenced in the final rule. *See* 77 FR 49485 (August 16, 2012) and 77 FR 66663 (November 6, 2012). The OCC is now revising them as described below.

The OCC intends to use the data collected to assess the reasonableness of the stress test results of covered institutions and to provide forward-looking information to the OCC regarding a covered institution's capital adequacy. The OCC also may use the results of the stress tests to determine whether additional analytical techniques and exercises could be appropriate to identify, measure, and monitor risks at the covered institution. The stress test results are expected to support ongoing improvement in a covered institution's stress testing practices with respect to its internal assessments of capital adequacy and overall capital planning.

The OCC recognizes that many covered institutions with total consolidated assets of $50 billion or more are required to submit reports using the Comprehensive Capital Analysis and Review (CCAR) reporting form FR Y–14A.[7] The OCC also recognizes the Board has a proposal to modify the FR Y–14A out for comment and, to the extent practical, the OCC will keep its reporting requirements consistent with the Board's FR Y–14A in order to minimize burden on covered institutions.[8] Therefore, the OCC is proposing to revise its reporting requirements to remain consistent with the Board's proposed FR Y–14A for covered institutions with total consolidated assets of $50 billion or more. Furthermore, the OCC is proposing to revise the Scenario Schedule, which collects information on scenario variables beyond those provided by regulators. The purpose of this revision is to require further clarity on the definitions of the additional scenario variables as well as information on how the additional scenario variables are used by covered institutions.

Proposed Revisions to Reporting Templates for Institutions With $50 Billion or More in Assets

The proposed revisions to the DFAST–14A reporting templates consist of adding data items, deleting data items, redefining existing data items, and renumbering data items. These proposed changes would provide additional information to enhance the ability of the OCC to analyze the validity and integrity of firms' projections and increase consistency between the FR Y–14A reporting templates and DFAST–14A reporting templates. The OCC has conducted a thorough review of proposed changes and believes that the incremental burden of these changes is justified given the need for these data to properly conduct the OCC's supervisory responsibilities related to the stress testing.

Summary Schedule

The OCC proposes making a number of changes to the Summary Schedule to better assess covered institutions' calculation of risk-weighted assets (RWA) and certain other items detailed below. Please note that all line item numbers referenced in this Notice refer to the existing reporting schedules, not the proposed reporting schedules. Because the proposed changes add and delete some data items, line-item numbering between the existing and proposed templates may be different (e.g., Income Statement item 125, Total Other Losses, in the existing reporting template is now item 124 in the proposed template).

Revisions to Income Statement Worksheet

In order to accurately collect information for the Income Statement, the OCC proposes changing items 127 and 128 (Realized Gains/Losses on available-for-sale securities and held-to-maturity securities, including OTTI) to be reported items instead of being equal to the total amounts on the Securities OTTI by Portfolio worksheet. Additionally, for consistency with changes proposed to the Counterparty Risk Worksheet described below, items 59 and 62 (Trading Incremental Default Losses and Other CCR Losses) would be modified to be Trading Issuer Default Losses and CCR Losses, and line item 61 (Counterparty Incremental Default Losses) would be removed.

Revisions to RWA and Capital Worksheets

To better align the collection of regulatory capital components with the Board's FR Y–14A, the OCC proposes to modify the definitions of the items on the Capital—DFAST worksheet to refer to or mirror the definitions that appear on proposed revisions to the FR Y–14A. Respondents would be required to apply the appropriate transition provisions to all transition-affected items of the Capital—DFAST schedule consistent with revisions to regulatory capital rules. With regard to the RWA worksheets, the standardized approach RWA and market RWA items of the General RWA worksheet have been changed in accordance with proposed modifications to Schedule RC–R of the Call Report[9] and modifications to the FR Y–14A that are currently being considered, and moved to a separate worksheet (Standardized RWA). These changes include both the modification and addition of items, for an overall addition of 12 items. Additionally, the computed items one through five of the current Advanced RWA worksheet would be removed.

Revisions to Retail Repurchase Worksheet

Due to recent activity by respondents involving settlements related to their representation and warranty (R&W) liabilities related to residential mortgages, the OCC proposes to collect additional detail about the R&W liabilities. Specifically, line items would be added that collect the unpaid principal balance (UPB) of loans covered by completed settlements for which liability remains and for which no liability remains by vintage beginning with 2004, as well as total settlement across vintages, for the following categories of loans: Loans sold to Fannie Mae, loans sold to Freddie Mac, loans insured by the U.S. government, loans securitized with monoline insurance, loans secured without monoline insurance, and whole loans sold.

Revisions to Securities Worksheets

Because covered bonds have unique characteristics relative to other asset categories currently on this worksheet, the OCC would add a covered bond category to the Securities worksheets to appropriately and separately evaluate respondents' projections of these assets. Additionally, two columns would be added to collect information for the Securities AFS OCI by Portfolio worksheet that would allow changes in market value to be distinguished from changes in portfolio allocation for each projected quarter: Beginning Fair Market Value and Fair Value Rate of Change, which is the weighted average percent

[6] 77 FR 61238 (October 9, 2012).

[7] *http://www.federalreserve.gov/reportforms.*

[8] 79 FR 41276 (July 15, 2014).

[9] 70 FR 35634 (June 23, 2014).

change in fair value over the quarter. Finally, to reduce reporting burden and increase efficiency in reporting, the nine sub-asset categories of Domestic Non-Agency Residential Mortgage-Backed Securities (RMBS) would be removed from the same worksheet, and the available-for-sale and held-to-maturity portions of the Securities OTTI by Portfolio worksheet would be combined with the addition of a column to identify AFS amounts versus HTM amounts.

Revisions to Trading Worksheet

Because credit valuation adjustment (CVA) losses are modeled separately from trading portfolio losses, the OCC proposes that the profit (loss) amount related to CVA hedges be reported separately from other trading activity.

Revisions to Counterparty Risk Worksheet

To allow respondents to use alternative methodologies for estimating losses related to the default of issuers and counterparties, the requirement of using the incremental default risk (IDR) methodology would be removed. Accordingly, line items 1, 1a and 1b (Trading Incremental Default Losses, Trading Incremental Default Losses from securitized products, and Trading Incremental Default Losses from other credit sensitive instruments) would be modified to be Issuer Default Losses. Additionally, line items 3 (Counterparty Incremental Default Losses) and 3a (Impact of CCR IDR Hedges) would be removed, line item 4 (Other CCR Losses) would be modified to be CCR Losses, and the line item Effect of CCR Hedges would be added.

Regulatory Capital Instruments Schedule

Proposed changes to the Regulatory Capital Instruments schedule would be consistent with proposed changes to the FR Y–14A. Specifically, the OCC proposes (1) adding an item that collects employee stock compensation to the four quarterly redemption/repurchase and issuance activity sub-sections; (2) adding 18 items to the general risk-based capital rules section and 28 items to the revised regulatory capital section; and (3) changing the capital balance items in the general risk-based capital rules section and the revised regulatory capital section from reported items to formulas to permit the capital balance items to be automatically computed using the proposed items.

Regulatory Capital Transitions Schedule

Similar to the changes proposed to be made to the RWA and Capital worksheets of the Summary schedule, proposed changes to the Regulatory Capital Transitions schedule would be made to better align the collection of regulatory capital components with proposed revisions to the FR Y–14A and proposed revisions to Schedule RC–R of the Call Report. The OCC proposes (1) aligning the definitions of the items on the Capital Composition worksheet to be consistent with the FR Y–14A; (2) modifying the RWA General worksheet to align with proposed revisions to the FR Y–14A, including changing the name to Standardized RWA and modifying, removing and adding items for a net increase of 15 items; (3) modifying, adding and removing items on the Advanced RWA worksheet to align with the Advanced RWA worksheet on the Summary schedule, for a net increase of 21 items; and (4) revising the Leverage Exposure worksheet in accordance with proposed changes to the supplementary leverage requirement, for a net increase of ten items.

Counterparty Credit Risk Schedule

Significant additions would be made to the CCR schedule to more adequately and accurately capture exposure information related to derivatives and securities financing transactions (SFTs) used in supervisory loss estimates and supervisory activities. These additions would remediate deficiencies discovered in the current collection related to exposure, including a lack of information regarding collateral, asset types, and total exposure to a given counterparty.

The OCC proposes (1) adding a worksheet that collects the derivative exposures at a legal-entity netting-agreement level for the top 25 non-central clearing counterparty (non-CCP) and non-G–7 counterparties, as well as all CCPs and the G–7 counterparties that includes a breakout of collateral into cash and non-cash, and exposures into 14 asset categories; (2) changing the current SFT sub-schedule to collect exposures and collateral separately at a counterparty legal-entity netting-agreement level for the top 25 non-CCP and non-G–7 counterparties as well as all CCPs and the G–7 counterparties and adding asset sub-categories for a total of 30 specific asset types; (3) removing all columns with the bank specification of margin period of risk (MPOR) under the global market shocks from worksheets 1(a)–1(e); (4) removing the column LGD Derived from Unstressed PD on the EE profile by CP worksheet; and (5) adding columns to worksheet 1(e) to collect both gross and net stressed and unstressed current exposure to CCPs.

Scenario Schedule

Additional scenario variables, which are collected on this schedule, are key drivers in projection methodologies. The OCC is proposing to revise the Scenario Schedule to further clarify the definitions of the additional scenario variables as well as to gather further information on how the additional scenario variables are used by covered institutions. It is expected that this additional clarity and information will assist in comparing information in this schedule across covered institutions.

The OCC proposes (1) providing additional guidance on the syntax for naming additional scenario variables to increase the comparability of additional scenario variables across covered institutions; (2) adding a column to explicitly capture the ''unit of measure'' of the additional scenario variables, e.g., basis points, percentages, dollars; (3) adding a column to explicitly capture the frequency of the variable, e.g., monthly or 3-month average; and (4) adding multiple columns to understand where the additional scenario variables are used in modeling. These last additional columns align with the methodology documentation framework described in Appendix A of the instructions.

Technical Changes

The proposed revised templates also contain various technical and reference changes.

Type of Review: Revision.

Affected Public: Businesses or other for-profit.

Estimated Number of Respondents: 23.

Estimated Total Annual Burden: 16,466 hours.

The OCC recognizes that the Board has estimated 67,848 hours for bank holding companies to prepare the reporting schedules submitted for the FR Y–14A. The OCC believes that the systems the covered institutions use to prepare the FR Y–14A reporting schedules will also be used to prepare the reporting schedules described in this notice. Comments submitted in response to this notice will be summarized and included in the request for OMB approval. All comments will become a matter of public record. Comments are invited on:

(a) Whether the collection of information is necessary for the proper performance of the functions of the

OCC, including whether the information has practical utility;

(b) The accuracy of the OCC's estimate of the burden of the collection of information;

(c) Ways to enhance the quality, utility, and clarity of the information to be collected;

(d) Ways to minimize the burden of the collection on respondents, including through the use of automated collection techniques or other forms of information technology; and

(e) Estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Dated: September 4, 2014.

Stuart Feldstein,

Director, Legislative and Regulatory Activities Division.

[FR Doc. 2014–21493 Filed 9–9–14; 8:45 am]

BILLING CODE 4810–33–P

DEPARTMENT OF THE TREASURY

Office of the Comptroller of the Currency

[Docket ID OCC–2014–0021]

FEDERAL RESERVE SYSTEM

[Docket No. OP–1497]

FEDERAL DEPOSIT INSURANCE CORPORATION

Community Reinvestment Act; Interagency Questions and Answers Regarding Community Reinvestment; Notice

AGENCY: Office of the Comptroller of the Currency, Treasury (OCC); Board of Governors of the Federal Reserve System (Board); Federal Deposit Insurance Corporation (FDIC).

ACTION: Notice and request for comment.

SUMMARY: The OCC, Board, and FDIC (the Agencies) propose to clarify and supplement their Interagency Questions and Answers Regarding Community Reinvestment to address questions raised by bankers, community organizations, and others regarding the Agencies' Community Reinvestment Act (CRA) regulations. The Agencies propose to revise three questions and answers that address (i) alternative systems for delivering retail banking services and (ii) additional examples of innovative or flexible lending practices. In addition, the Agencies propose to revise three questions and answers addressing community development-related issues, including economic development, community development loans, and activities that are considered to revitalize or stabilize an underserved nonmetropolitan middle-income geography. The Agencies also propose to add four new questions and answers, two of which address community development services, and two of which provide general guidance on responsiveness and innovativeness.

DATES: Comments on the proposed questions and answers must be received on or before November 10, 2014.

ADDRESSES: Comments should be directed to:

OCC: Because paper mail in the Washington, DC area and at the OCC is subject to delay, commenters are encouraged to submit comments by email, if possible. Please use the title ''Community Reinvestment Act: Interagency Questions and Answers Regarding Community Reinvestment'' to facilitate the organization and distribution of the comments. You may submit comments by any of the following methods:

- *Email: regs.comments@occ.treas.gov.*
- *Mail:* Legislative and Regulatory Activities Division, Office of the Comptroller of the Currency, Mail Stop 9W–11, 400 7th Street SW., Washington, DC 20219.
- *Fax:* (571) 465–4326.
- *Hand Delivery/Courier:* 400 7th Street SW., Washington, DC 20219.

Instructions: You must include ''OCC'' as the agency name and ''Docket ID OCC–2014–0021'' in your comment. In general, the OCC will enter all comments received into the docket and publish them on the Regulations.gov Web site without change, including any business or personal information that you provide such as name and address information, email addresses, or phone numbers. Comments received, including attachments and other supporting materials, are part of the public record and subject to public disclosure. Do not enclose any information in your comment or supporting materials that you consider confidential or inappropriate for public disclosure.

You may review comments and other related materials that pertain to this notice by any of the following methods:

- *Viewing Comments Personally:* You may personally inspect and photocopy comments at the OCC, 400 7th Street SW., Washington, DC. For security reasons, the OCC requires that visitors make an appointment to inspect comments. You may do so by calling (202) 649–6700. Upon arrival, visitors will be required to present valid government-issued photo identification and to submit to security screening in order to inspect and photocopy comments.
- *Docket:* You may also view or request available background documents and project summaries using the methods described above.

Board: You may submit comments, identified by Docket No. OP–1497 by any of the following methods:

- *Agency Web site: http://www.federalreserve.gov.* Follow the instructions for submitting comments at *http://www.federalreserve.gov/generalinfo/foia/ProposedRegs.cfm.*
- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Email: regs.comments@federalreserve.gov.* Include the docket number in the subject line of the message.
- *Fax:* (202) 452–3819 or (202) 452–3102.
- *Mail:* Address to Robert deV. Frierson, Secretary, Board of Governors of the Federal Reserve System, 20th Street and Constitution Avenue NW., Washington, DC 20551. All public comments will be made available on the Board's Web site at *http://www.federalreserve.gov/generalinfo/foia/ProposedRegs.cfm* as submitted, unless modified for technical reasons. Accordingly, comments will not be edited to remove any identifying or contact information. Public comments may also be viewed electronically or in paper in Room MP–500 of the Board's Martin Building (20th and C Streets NW., Washington, DC) between 9:00 a.m. and 5:00 p.m. on weekdays.

FDIC:

- *Mail:* Written comments should be addressed to Robert E. Feldman, Executive Secretary, Attention: Comments, Federal Deposit Insurance Corporation, 550 17th Street NW., Washington, DC 20429.
- *Delivery:* Comments may be hand delivered to the guard station at the rear of the 550 17th Street Building (located on F Street) on business days between 7:00 a.m. and 5:00 p.m.
- *Agency Web site: http://www.fdic.gov/regulations/laws/federal/.* Follow instructions for submitting comments on the agency Web site.
- *Email:* You may also electronically mail comments to *comments@fdic.gov.*

FOR FURTHER INFORMATION CONTACT:

OCC: Bobbie K. Kennedy, Bank Examiner, Compliance Policy Division, (202) 649–5470; or Margaret Hesse, Senior Counsel, Community and Consumer Law Division, (202) 649–6350, Office of the Comptroller of the Currency, 400 7th Street SW., Washington, DC 20219.

Board: Catherine M.J. Gates, Senior Project Manager, (202) 452–2099; or Theresa A. Stark, Senior Project Manager, (202) 452–2302, Division of Consumer and Community Affairs, Board of Governors of the Federal Reserve System, 20th Street and Constitution Avenue NW., Washington, DC 20551.

FDIC: Patience R. Singleton, Senior Policy Analyst, Supervisory Policy Branch, Division of Depositor and Consumer Protection, (202) 898–6958; Pamela A. Freeman, Senior Examination Specialist, Compliance & CRA Examinations Branch, Division of Depositor and Consumer Protection, (202) 898–3656; Surya Sen, Section Chief, Supervisory Policy Branch, Division of Depositor and Consumer Protection, (202) 898–6699; or Richard M. Schwartz, Counsel, Legal Division, (202) 898–7424, Federal Deposit Insurance Corporation, 550 17th Street NW., Washington, DC 20429.

SUPPLEMENTARY INFORMATION:

Background

The OCC, Board, and FDIC implement the CRA (12 U.S.C. 2901 *et seq.*) through their CRA regulations. *See* 12 CFR parts 25, 195, 228, and 345. The Agencies also issue the ''Interagency Questions and Answers Regarding Community Reinvestment'' (Questions and Answers) to provide further guidance to agency personnel, financial institutions, and the public. The Agencies first published the Questions and Answers under the auspices of the Federal Financial Institutions Examination Council (FFIEC) in 1996 (61 FR 54647), and last published the Questions and Answers in their entirety on March 11, 2010 (2010 Questions and Answers) (75 FR 11642). In 2013, the Agencies adopted revised guidance on community development topics that amended and superseded five questions and answers (Q&A) and added two new Q&As (2013 Guidance). *See* 78 FR 69671 (Nov. 20, 2013).

The Questions and Answers are grouped by the provision of the CRA regulations that they discuss, are presented in the same order as the regulatory provisions, and employ an abbreviated method of citing to the regulations. For example, the small bank performance standards for national banks appear at 12 CFR 25.26; for savings associations, the small savings association performance standards appear at 12 CFR 195.26; for Federal Reserve System member banks supervised by the Board, they appear at 12 CFR 228.26; and for state nonmember banks, they appear at 12 CFR 345.26. For ease of reference, the citation to those regulatory provisions in the Questions and Answers is set forth in a simplified format as 12 CFR __.26. Each individual Q&A is numbered using a system that consists of the regulatory citation and a number, connected by a dash. For example, the first Q&A addressing 12 CFR __.26 would be identified as § __.26–1.

In accordance with their statutory responsibilities, the Agencies regularly review examination policies, procedures, and guidance to better serve the goals of the CRA. To achieve these goals, the Agencies regularly conduct outreach with, and review comments from, industry, community organizations, and examiners, including public hearings held in 2010.[1] Many of the comments reviewed raised issues relating to examiners' consideration given to access to banking services and community development services and, more generally, on the need for additional guidance on performance criteria under the lending, investment, and service tests. The Agencies reviewed the Questions and Answers and identified areas that may warrant clarification or additional guidance to address and clarify some of the issues raised by commenters.

Overview of Comments

Some commenters raised questions and concerns related to access to banking services and alternative systems for delivering retail banking services. For example, commenters stated that examiners place too much weight on the distribution of branching under the service test. These commenters suggested that the Agencies should ensure that financial institutions are evaluated in a manner that is responsive to changes in the financial services marketplace. Other commenters added that examiners should place more emphasis on providing access to, and promoting usage of, financial services that enable individuals and families to build wealth. Other commenters urged the Agencies to evaluate alternative delivery systems based on their actual effectiveness and availability, not just the fact that they are offered. In addition, commenters asserted that community development services are not given appropriate consideration in the service test and, by extension, in the overall CRA evaluation, relative to retail banking services.

Some commenters indicated that the Agencies should increase their focus on qualitative factors when considering an institution's lending, investment, or services, particularly related to community development, and that the Agencies should encourage more strongly the delivery of high-impact products and services. Other commenters stated that the Agencies should encourage financial institutions to be flexible in designing products and services targeted to low- and moderate-income and underbanked individuals and geographies.

Commenters also have urged the Agencies to provide incentives for financial institutions to offer fair and affordable credit products, such as amortizing small dollar loans that are sustainable for both borrowers and financial institutions. Some of these commenters urged the Agencies to adopt guidance that would encourage financial institutions to offer sustainable consumer loans, including alternatives to payday loans. In connection with small dollar and home mortgage lending, a number of commenters stressed the importance of financial literacy education activities and counseling.

Commenters also addressed economic development. Some commenters stated that the Agencies should adopt guidance that would support the creation or expansion of technical assistance intermediaries that help new or existing small businesses access micro-enterprise or small business lending opportunities. Commenters also requested additional examples of CRA-eligible small business-related loans, investments, and services, particularly related to increasing small business lending to underbanked entrepreneurs.

A number of commenters suggested that the Agencies should address whether alternative energy facilities and energy efficiency enhancements that are responsive to local needs are eligible for CRA consideration. The Agencies have also been asked whether financing that enables the expansion of communication technology in rural areas and in Native American communities would be eligible for CRA consideration.

The Agencies propose to clarify the CRA regulations to address these questions and concerns. This notice proposing additional clarifications to the Agencies' CRA regulations builds upon the Agencies' 2013 Guidance addressing community development-related issues. After the Agencies have considered comments received on this proposal, the Agencies plan to formally adopt and republish the new and revised Q&As.

[1] *See* 75 FR 35686 (June 23, 2010).

Proposed Revisions to Existing Q&As

I. Access to Banking Services

A. Availability and Effectiveness of Retail Banking Services

The CRA regulations identify the performance criteria examiners consider when evaluating the availability and effectiveness of an institution's systems for delivering retail banking services under the service test. *See* 12 CFR __.24(d). Specifically, the regulations provide that the Agencies evaluate the availability and effectiveness of a large institution's systems for delivering retail banking services pursuant to the following criteria:

(1) The current distribution of the institution's branches among low-, moderate-, middle-, and upper-income geographies;

(2) in the context of the current distribution of the institution's branches, the institution's record of opening and closing branches, particularly branches located in low- or moderate-income geographies or primarily serving low- or moderate-income individuals;

(3) the availability and effectiveness of alternative systems for delivering retail banking services in low- and moderate-income geographies and to low- and moderate-income individuals; and

(4) the range of services provided in low-, moderate-, middle-, and upper-income geographies and the degree to which the services are tailored to meet the needs of those geographies. *See* 12 CFR __.24(d).

Existing Q&As § __.24(d)–1 and § __.24(d)(3)–1 provide further guidance related to the evaluation of retail banking services in the service test applicable to large financial institutions.

Existing Q&A § __.24(d)–1 provides guidance regarding how examiners evaluate the availability and effectiveness of an institution's systems for delivering retail banking services. The Q&A states, in part, that ''the service test performance standards place primary emphasis on full service branches while still considering alternative systems, such as automated teller machines ('ATM').'' The Q&A further states that alternative systems, such as ATMs, will be considered ''only to the extent that they are effective alternatives in providing services to low- and moderate-income areas and individuals.'' Based on this guidance, examiners have focused primarily on an institution's branching activities when evaluating the institution's service test performance. The emphasis on branch distribution continues despite technological advances in the retail banking industry, such as Internet or online banking, mobile banking, remote deposit capture, and 24-hour Internet banking kiosks, which provide financial institutions new methods to deliver retail banking services to consumers.

Some commenters contend that the primary emphasis on evaluating access to, and distribution of, physical branches to deliver retail banking services undervalues other means of providing these services, such as alternative delivery systems. Some of these commenters contended that this emphasis on the existence and distribution of retail bank branches is unwarranted, especially as financial institutions increasingly use alternative delivery systems to deliver financial services to all consumers. These commenters suggested that alternative delivery systems should receive greater consideration under the regulations' service test when they are effective in delivering retail banking services in low- and moderate-income geographies and to low- and moderate-income individuals. Other commenters, however, still believe that branches should be the primary emphasis of the service test.

The Agencies agree with commenters that additional clarification of the extent to which alternative delivery systems will be considered is necessary in order to recognize an institution's use of such systems to make products and services available to benefit low- and moderate-income geographies and individuals. Given the extent of technological innovation in the delivery of banking services, alternative delivery systems can create opportunities for institutions to better reach and serve low- and moderate-income geographies and individuals. Nonetheless, the Agencies recognize that, under the CRA regulations, alternative delivery systems supplement the services provided by a financial institution's branch and deposit-taking ATM structure because assessment areas are delineated around the institution's branches and ATMs.

Therefore, the Agencies propose to revise existing Q&A § __.24(d)–1 to clarify how examiners should evaluate and consider alternative systems for delivering retail banking services in an institution's assessment area(s).

The Agencies propose deleting language that states ''performance standards place primary emphasis on full service branches'' and further deleting the statement that provides that alternative systems are considered ''only to the extent'' that they are effective alternatives in providing needed services to low- and moderate-income geographies and individuals. Changes in technology and the financial market increasingly provide opportunities for financial institutions to use alternative delivery systems effectively to provide needed services in low- and moderate-income geographies and to low- and moderate-income individuals. The Agencies encourage the use of all types of delivery systems to help meet the needs of low- and moderate-income geographies and individuals and, therefore, believe that this language should be removed to provide certainty among financial institutions that such activities should be considered during a CRA evaluation.

The Agencies believe that the proposed revisions to existing guidance would encourage broader availability of alternative delivery systems to low- and moderate-income geographies and individuals without diminishing the value full-service branches provide to communities. The text of proposed revised Q&A § __.24(d)–1 follows:

Q&A § __.24(d)–1. *How do examiners evaluate the availability and effectiveness of an institution's systems for delivering retail banking services?*

A1. Convenient access to full-service branches and effective alternative systems to deliver retail banking services within a community are important factors in determining the availability of credit and non-credit services. Examiners evaluate an institution's current distribution of branches and its record of opening and closing branches, particularly branches located in low- or moderate-income geographies or primarily serving low- or moderate-income individuals. However, an institution is not required to expand its branch network or operate unprofitable branches. Examiners also consider the availability and effectiveness of an institution's alternative systems for expanding the delivery of retail banking services by evaluating factors that demonstrate consumer accessibility and use of such systems in low- and moderate-income geographies and by low- and moderate-income individuals. These factors used in evaluating alternative systems for delivering retail banking services are discussed in Q&A § __.24(d)(3)–1.

The Agencies solicit comments on all aspects of this proposed revised Q&A. In addition, the Agencies specifically request commenters' views on the following question.

1. Does the proposed revised guidance strike the appropriate balance between consideration of traditional delivery systems (e.g., branches) and alternative systems for serving low- and moderate-income geographies and individuals?

B. Alternative Systems for Delivering Retail Banking Services

As discussed above, the availability and effectiveness of alternative systems for delivering retail banking services in low- and moderate-income geographies and to low- and moderate-income individuals is one of four performance criteria that examiners consider when evaluating the availability and effectiveness of a financial institution's systems for delivering retail banking services. *See* 12 CFR __.24(d)(3). Existing Q&A § __.24(d)(3)–1 is intended to provide additional guidance on how examiners evaluate alternative systems for delivering retail banking services. This Q&A currently states that there are a ''multitude of ways in which an institution can provide services'' and lists ATMs, banking by telephone or computer, and bank-by-mail as examples of alternative delivery systems. The answer further states, in part, that delivery systems ''other than branches will be considered under the regulation to the extent that they are effective alternatives to branches in providing needed services to low- and moderate-income areas and individuals.''

Commenters noted that the existing Q&A should be updated to include examples that reflect technological advances in delivering retail banking services. These commenters also noted that the existing Q&A does not discuss the regulations' requirement that examiners consider the availability of alternative systems, provide examples of how to measure their effectiveness in reaching low- and moderate-income geographies or individuals, or provide insight into how an institution can demonstrate that its alternative delivery systems are effectively reaching low- and moderate-income geographies or individuals located in the institution's assessment area.

The Agencies agree with commenters' observation that additional guidance regarding how examiners will evaluate the availability and effectiveness of alternative delivery systems is warranted. In addition, the Agencies agree that it would be helpful to update the list of examples of alternative delivery systems even though the examples provided in the existing Q&A were not intended to limit consideration of new methods as technology evolves.

To address commenters concerns, the Agencies propose to revise Q&A § __.24(d)(3)–1 to recognize the broad range of alternative systems that financial institutions use to deliver retail banking services to low- and moderate-income geographies and individuals. The revised Q&A would also include examples of alternative delivery systems that reflect current technological advances in the industry, but also note that such examples are not intended to limit consideration of systems that have yet to be created.

In addition, to recognize the industry's broader use of alternative systems for delivering retail banking services, the Agencies propose to provide further guidance on factors that examiners use to evaluate whether alternative delivery systems are an available and effective means of providing retail banking services to low- and moderate-income geographies and individuals. Specifically, the Agencies propose to revise existing Q&A § __.24(d)(3)–1 to further clarify how examiners can assess the availability and effectiveness of an institution's alternative delivery systems by evaluating factors that demonstrate consumer accessibility and the use of those systems in low- and moderate-income geographies and by low- and moderate-income individuals. The Agencies propose that examiners evaluate the following factors when assessing the availability and effectiveness of an institution's alternative delivery systems: (i) The ease of access, whether physical or virtual; (ii) the cost to consumers, as compared with other delivery systems; (iii) the range of services delivered; (iv) the ease of use; (v) the rate of adoption; and (vi) the reliability of the system. The Agencies do not intend that every feature or factor would need to be satisfied for an institution's alternative systems for delivering retail banking services to be considered available and effective. Further, as is currently the case, alternative systems for delivering retail banking services are considered only when they are offered, which assumes that the necessary infrastructure or technology supporting their use is available.

The proposed revised Q&A would also state that financial institutions could provide available data on consumer usage or transactions and the other factors outlined above to demonstrate the availability and effectiveness of the institution's alternative delivery systems. To provide flexibility to financial institutions, the proposed revised guidance would clarify that examiners will consider any information an institution maintains and provides demonstrating that the institution's alternative delivery systems are available to, and used by, low- and moderate-income individuals.

The text of proposed revised Q&A § __.24(d)(3)–1 follows:

Q&A § __.24(d)(3)–1. *How do examiners evaluate alternative systems for delivering retail banking services?*

A1. There are a number of alternative systems used by financial institutions to deliver retail banking services to customers. Non-branch delivery systems, such as ATMs, online and mobile banking, and other means by which banks provide services to their customers evolve over time. No matter the means of delivery, examiners evaluate the extent to which the alternative delivery systems are available and effective in providing financial services to low- and moderate-income geographies and individuals. For example, a system may be determined to be effective based on the accessibility of the system to low- and moderate-income geographies and low- and moderate-income individuals.

To determine whether a financial institution's alternative delivery system is an available and effective means of delivering retail banking services in low- or moderate-income geographies and to low- or moderate-income individuals, examiners may consider a variety of factors, including

- The ease of access, whether physical or virtual;
- the cost to consumers, as compared with other delivery systems;
- the range of services delivered;
- the ease of use;
- the rate of adoption; and
- the reliability of the system.

Examiners will consider any information an institution maintains and provides to examiners demonstrating that the institution's alternative delivery systems are available to, and used by, low- or moderate-income individuals, such as data on customer usage or transactions.

The Agencies solicit comments on all aspects of this proposed revised Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

2. Are the factors listed for consideration when examiners evaluate the availability and effectiveness of alternative delivery systems sufficiently flexible to be used by examiners as the financial services marketplace evolves? Are there other factors that should be included?

3. What types of information are financial institutions likely to routinely maintain that may be used to demonstrate that an institution's alternative delivery systems are available to, and used by, low- and moderate-income individuals?

4. What other sources of data and quantitative information could examiners use to evaluate the ease of

access; cost to consumers, as compared with other delivery systems; range of services delivered; ease of use; rate of adoption; and reliability of alternative delivery systems? Do financial institutions have such data readily available for examiners to review?

5. When considering cost to consumers, as compared with other delivery systems, and the range of services delivered, should examiners evaluate these features relative to other delivery systems (i) offered by the institution, (ii) offered by institutions within the institution's assessment area(s), or (iii) offered by the banking industry generally?

6. Do the proposed revisions adequately address changes in the way financial institutions deliver products in the context of assessment area(s) based on the location of a financial institution's branches and deposit-taking ATMs?

II. Innovative or Flexible Lending Practices

Under the performance standards applicable to large financial institutions, an institution's use of innovative or flexible lending practices is one of five factors examiners review as part of the lending test. *See* 12 CFR __.22(b)(5). Examiners evaluate an institution's ''use of innovative or flexible lending practices in a safe and sound manner to address the credit needs of low- or moderate-income individuals or geographies.'' *See* 12 CFR __.22(b)(5). Existing Q&A § __.22(b)(5)–1 provides guidance regarding the range of practices that examiners may consider in evaluating the innovativeness or flexibility of an institution's lending practices, and lists two examples of such practices.

Existing Q&A § __.22(b)(5)–1 states that examiners are not limited to reviewing the overall variety and specific terms and conditions of credit products when evaluating innovativeness, but that an evaluation may also include consideration of related innovations that augment the success and effectiveness of the institution's community development loan program or lending programs that address the credit needs of low- or moderate-income geographies or individuals. The existing guidance provides two examples of practices that may or may not be innovative or flexible on their own, but are viewed as innovative practices when considered in conjunction with related activity. The current examples include (i) a technical assistance program for loan recipients administered in conjunction with a community development loan program, and (ii) a contracting program for small business borrowers established in connection with a small business lending program. These examples emphasize that practices receive consideration under the lending test as being innovative when they augment the success and effectiveness of particular lending programs that address the credit needs of low- or moderate-income geographies or individuals.

The Agencies believe that, when implemented correctly, innovative or flexible practices can help meet the credit needs of low- or moderate-income geographies or individuals. The Agencies believe existing guidance would benefit from additional examples of innovative or flexible lending practices that reflect advancement in lending. Including more recent examples may help examiners and institutions think more broadly about the types of practices that could encourage additional lending that would benefit low- or moderate-income geographies or individuals.

The Agencies propose to revise existing Q&A § __.22(b)(5)–1 to expand the list of examples of innovative or flexible lending practices. The proposed revised Q&A would explain that examiners will consider whether, and to what extent, the innovative or flexible practices augment the success and effectiveness of the institution's lending program. The proposed Q&A also would emphasize that an innovative or flexible lending practice is not required to obtain a specific rating, but rather is a qualitative consideration that, when present, can enhance a financial institution's CRA performance.

In addition, the Agencies propose to revise the Q&A by adding two new examples of innovative or flexible lending practices. The first example describes small dollar loan programs as an innovative practice when such loans are made in a safe and sound manner with reasonable terms, and are offered in conjunction with outreach initiatives that include financial literacy or a savings component. The Agencies are including small dollar loan programs as an example of an innovative or flexible lending practice to encourage such programs as alternatives to higher-cost credit products that many low- or moderate-income individuals currently may depend upon to meet their small dollar credit needs.

The Agencies note that small dollar loan programs currently receive consideration under the lending test, and that these programs are already referenced in Q&A § __.22(a)–1 as a type of lending activity that is likely to be responsive in helping to meet the credit needs of many communities. *See* Q&A § __.22(a)–1. However, including small dollar loan programs as an example of an innovative or flexible lending practice acknowledges that banks may employ outreach initiatives in conjunction with financial literacy education or offer linked savings programs to improve the success of affiliated lending programs in meeting the credit needs of their communities. The Agencies believe that ensuring proper consideration for such initiatives as innovative or flexible lending practices is consistent with the goals of the regulations because they facilitate institutions' abilities to meet the credit needs of their communities.

The second example of an innovative or flexible lending practice that the Agencies propose to add to existing Q&A § __.22(b)(5)–1 describes mortgage or consumer lending programs that utilize alternative credit histories in a manner that would benefit low- or moderate-income individuals. The Agencies understand that low- or moderate-income individuals with limited conventional credit histories face challenges in obtaining access to credit. Alternative credit histories supplement conventional trade line information with additional information about the borrower, such as rent and utility payments. For individuals who do not qualify for credit based on the use of conventional credit reports, but who have a positive payment history with regard to obligations such as a rental agreement or utility account, such additional information may supplement an assessment of a borrower's risk profile, consistent with safe and sound underwriting practices. The Agencies believe that considering alternative credit histories to supplement conventional underwriting practices may provide an opportunity for some additional creditworthy low- or moderate-income individuals to gain access to credit.

Finally, the Agencies propose to revise the existing question's reference to a ''range of practices,'' to conform the question to the existing and proposed revised answers.

The text of proposed revised Q&A § __.22(b)(5)–1 follows:

§ __.22(b)(5)–1: *What do examiners consider in evaluating the innovativeness or flexibility of an institution's lending under the lending test applicable to large institutions?*

A1. In evaluating the innovativeness or flexibility of an institution's lending practices (and the complexity and innovativeness of its community development lending), examiners will not be limited to reviewing the overall

variety and specific terms and conditions of the credit products themselves. Examiners also consider whether, and the extent to which, innovative or flexible terms or products augment the success and effectiveness of the institution's community development loan programs or, more generally, of its loan programs that address the credit needs of low- or moderate-income geographies or individuals. Although examiners evaluate how innovative or flexible lending practices address the credit needs of low- or moderate-income geographies or individuals, an innovative or flexible lending practice is not required in order to obtain a specific rating. Examples of innovative or flexible lending practices include:

• In connection with a community development loan program, an institution may establish a technical assistance program under which the institution, directly or through third parties, provides affordable housing developers and other loan recipients with financial consulting services. Such a technical assistance program may, by itself, constitute a community development service eligible for consideration under the service test of the CRA regulations. In addition, the technical assistance may be considered favorably as an innovative or flexible practice that augments the success and effectiveness of the related community development loan program.

• In connection with a small business lending program in a low- or moderate-income area and consistent with safe and sound lending practices, an institution may implement a program under which, in addition to providing financing, the institution also contracts with the small business borrowers. Such a contracting arrangement would not, itself, qualify for CRA consideration. However, it may be favorably considered as an innovative or flexible practice that augments the loan program's success and effectiveness, and improves the program's ability to serve community development purposes by helping to promote economic development through support of small business activities and revitalization or stabilization of low- or moderate-income geographies.

• In connection with a small dollar loan program offered in a safe and sound manner and with reasonable terms, an institution may establish outreach initiatives or financial counseling targeted to low- or moderate-income individuals or communities. The institution's efforts to encourage the availability, awareness, and use of the small dollar loan program to meet the credit needs of low- and moderate-income individuals, in lieu of higher-cost credit, should augment the success and effectiveness of the lending program. Such loans may be considered responsive under Q&A § __.22(a)–1, and the use of such outreach initiatives in conjunction with financial literacy education or linked savings programs also may be favorably considered as an innovative or flexible practice to the extent that they augment the success and effectiveness of the related loan program. Such initiatives may receive consideration under other performance criteria as well. For example, an initiative to partner with a nonprofit organization to provide financial counseling that encourages responsible use of credit may, by itself, constitute a community development service eligible for consideration under the service test.

• In connection with a mortgage or consumer lending program targeted to low- or moderate-income geographies or individuals, consistent with safe and sound lending practices, an institution may establish underwriting standards that utilize alternative credit histories, which would benefit low- and moderate-income individuals who lack sufficient conventional credit histories to be evaluated under the bank's underwriting standards. The use of such underwriting standards may be favorably considered as an innovative or flexible practice that augments the success and effectiveness of the lending programs.

The Agencies solicit comments on all aspects of this proposed revised Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

7. Is the proposed revised guidance sufficient to encourage institutions to design more innovative or flexible lending programs that are responsive to community needs?

8. Are the new examples described in the proposed revised guidance useful? Do the benefits of using alternative credit histories in underwriting standards that benefit low- or moderate-income persons outweigh any concerns raised by the use of alternative credit histories of which the Agencies should be aware?

9. Is there additional guidance that the Agencies should provide to better enable examiners and institutions to identify those circumstances in which the use of alternative credit histories will benefit low- or moderate-income individuals?

III. Community Development

Community development is an important component of community reinvestment and is considered in the CRA evaluations of financial institutions of all types and sizes. Community development activities are considered under the regulations' large institution, intermediate small institution, and wholesale and limited purpose institution performance tests. *See* 12 CFR §§ __.22(b)(4), __.23, ____ .24(e), ____.26(c), and ____.25, respectively. In addition, small institutions may use community development activity to receive consideration toward an outstanding rating.

The Agencies believe that community development generally improves the circumstances for low- and moderate-income individuals and stabilizes and revitalizes the communities in which they live or work. The 2013 Guidance addressed several aspects of community development. The Agencies propose to further refine the Questions and Answers to provide additional clarification about community development-related topics that were not addressed in the 2013 Guidance.

A. Economic Development

The CRA regulations at 12 CFR ____ .12(g)(3) define community development to include ''activities that promote economic development by financing businesses or farms that meet the size eligibility standards of the Small Business Administration's Development Company or Small Business Investment Company programs (13 CFR 121.301) or have gross annual revenues of $1 million or less.'' The Questions and Answers provide additional guidance on activities that promote economic development in Q&As § ____.12(g)(3)–1, § ____.12(i)–1, § ____.12(i)–3, and § ____.12(t)–4.

Existing Q&A § ____.12(g)(3)–1 further explains what is meant by the phrase ''promote economic development.'' The guidance provides that activities promote economic development by financing small businesses or farms if they meet two ''tests'': (i) A ''size test'' (e.g., the recipient of the activity must meet the size eligibility standards of the Small Business Administration's Development Company (SBDC) or Small Business Investment Company (SBIC) or have gross annual revenues of $1 million or less); and (ii) a ''purpose test,'' which is intended to ensure that a financial institution's activities promote economic development consistent with the CRA regulations. Existing Q&A § ____.12(g)(3)–1 states

that activities meet the purpose test if they ''support permanent job creation, retention, and/or improvement for persons who are currently low- or moderate-income, or support permanent job creation, retention, and/or improvement either in low- or moderate-income geographies or in areas targeted for redevelopment by Federal, state, local, or tribal governments.'' The Q&A further explains, ''[t]he Agencies will presume that any loan to or investment in a SBDC, SBIC, Rural Business Investment Company, New Markets Venture Capital Company, or New Markets Tax Credit-eligible Community Development Entity promotes economic development.''

Some bankers contend that existing Q&A § ____.12(g)(3)–1 narrows the scope and intent of the regulations, which do not define ''economic development'' beyond the ''size test.'' They believe 12 CFR ____.12(g)(3) provides that all activities that finance businesses or farms that meet the size eligibility standards have a purpose of promoting economic development, and that no additional consideration beyond financing is necessary to demonstrate the promotion of economic development.

In addition, others have stated that the existing guidance on whether an activity promotes economic development is unclear and leads to the inconsistent treatment by examiners of economic development activities under the CRA regulations. For example, the purpose test in existing Q&A § ____ .12(g)(3)–1 refers to ''permanent job creation, retention, and/or improvement for persons who are *currently* low- or moderate-income.'' (Emphasis added.) The Agencies have learned through discussions with bankers and others that the use of the word ''currently'' may lead some examiners to recognize only activities that support low-wage jobs. Because bankers often are unable to demonstrate that employees were low- or moderate-income when hired, they often track the number of jobs at wages commensurate with incomes that are low or moderate for the area. As a result, the guidance may create incentives inconsistent with its own stated purpose of promoting job improvement opportunities for low- or moderate-income persons. Bankers and others also have indicated that the purpose test in the existing Q&A may have a dampening effect on economic development and related job creation. Notably, statistics show that small businesses are responsible for roughly one-half of all private sector employment and create a significant number of jobs. However, financial institutions' activities with micro-lenders and financial intermediaries that provide assistance to start-up businesses may not receive consideration because those institutions cannot demonstrate that the loans made by those entities are to, or will create jobs for, persons who are currently low- or moderate-income, or to businesses located in low- or moderate-income areas, until the micro-lender or financial intermediary makes loans to start-up businesses with the institutions' funds. As a result, financial institutions may hesitate to provide assistance to such entities, potentially reducing the resources available to micro-lenders and other financial intermediaries and the potential new businesses that would depend on their support.

In addition, some Q&As provide examples of activities that promote economic development under the CRA regulations that are not mentioned in the purpose test as outlined in Q&A § ____.12(g)(3)–1. Specifically, both Q&As § ____.12(i)–1 and § ____.12(i)–3 note that providing technical assistance to small businesses is a community development service that involves the ''provision of financial services'' and Q&A § ____.12(t)–4 lists examples of qualified investments, including some that promote economic development. These examples do not refer to the narrower scope of the purpose test and, as a result, if read and applied independently from the guidance in Q&A § ____.12(g)(3)–1, could lead to inconsistent application of the guidance on examinations.

The Agencies note that the existing guidance provides that to meet the purpose test, the institution's activity must promote economic development. However, the Agencies agree that the guidance may benefit from additional clarification to facilitate consistent application of the ''purpose test'' and to ensure that all activities promoting economic development are considered.

Accordingly, the Agencies propose several revisions to Q&A § ____.12(g)(3)–1 to clarify what is meant by ''promote economic development'' and to better align this Q&A with other guidance, including Q&As § ____.12(i)–1 and § ____.12(i)–3, regarding consideration for economic development activities undertaken by financial institutions. First, the Agencies propose to revise the statement that activities promote economic development if they ''support permanent job creation, retention, and/or improvement for persons who are currently low- or moderate-income'' by removing the word ''currently.'' The Agencies believe that, as currently drafted, the statement may unnecessarily focus bank community development activities on supporting low-wage jobs.

Second, the Agencies propose to add additional examples that would demonstrate a purpose of economic development. The Agencies propose to revise the guidance to add that activities promote economic development if they support (1) permanent job creation, retention, and/or improvement through (i) workforce development and/or job or career training programs that target unemployed or low- or moderate-income persons; or (ii) the creation or development of small businesses or farms; or (iii) technical assistance or supportive services for small businesses or farms, such as shared space, technology, or administrative assistance; or (2) Federal, state, local, or tribal economic development initiatives that include provisions for creating or improving access by low- or moderate-income persons, to jobs, affordable housing, financial services, or community services.

The Agencies also propose to re-format the guidance to list the various types of activities that demonstrate a purpose of economic development separately. Finally, the proposed revised Q&A would include Community Development Financial Institutions that finance small businesses or small farms in the list of entities for which the Agencies will presume that any loan to or investment in promotes economic development.

The text of proposed revised Q&A § _____.12(g)(3)–1 follows:

§ ____.12(g)(3)–1: *''Community development'' includes activities that promote economic development by financing businesses or farms that meet certain size eligibility standards. Are all activities that finance businesses and farms that meet the size eligibility standards considered to be community development?*

A1. No. The concept of ''community development'' under 12 CFR ____ .12(g)(3) involves both a ''size'' test and a ''purpose'' test that clarify what economic development activities are considered under CRA. An institution's loan, investment, or service meets the ''size'' test if it finances, either directly, or through an intermediary, businesses or farms that either meet the size eligibility standards of the Small Business Administration's Development Company (SBDC) or Small Business Investment Company (SBIC) programs, or have gross annual revenues of $1 million or less. To meet the ''purpose test,'' the institution's loan, investment, or service must promote economic development. These activities are

considered to promote economic development if they support:

- Permanent job creation, retention, and/or improvement
  - For low- or moderate-income persons;
  - In low- or moderate-income geographies;
  - In areas targeted for redevelopment by Federal, state, local, or tribal governments;
  - Through workforce development and/or job or career training programs that target unemployed or low- or moderate-income persons;
  - Through the creation or development of small businesses or farms; or
  - Through technical assistance or supportive services for small businesses or farms, such as shared space, technology, or administrative assistance; or
- Federal, state, local, or tribal economic development initiatives that include provisions for creating or improving access by low- or moderate income persons, to jobs, affordable housing, financial services, or community services.

The agencies will presume that any loan to or investment in a SBDC, SBIC, Rural Business Investment Company, New Markets Venture Capital Company, New Markets Tax Credit-eligible Community Development Entity, or Community Development Financial Institution that finances small businesses or small farms promotes economic development. (See also Q&As § ____.42(b)(2)–2, § ____.12(h)–2, and § ____.12(h)–3 for more information about which loans may be considered community development loans.)

The Agencies solicit comments on all aspects of this proposed revised Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

10. Does the proposed revised guidance clarify what economic development activities are considered under CRA?

11. What information should examiners use to demonstrate that an activity meets the size and purpose tests described in the proposed revised guidance?

12. Does the proposed revised guidance help to clarify what is meant by job creation for low- or moderate-income individuals?

13. Are the proposed examples demonstrating that an activity promotes economic development for CRA purposes appropriate? Are there other examples the Agencies should include that would demonstrate that an activity promotes economic development for CRA purposes?

14. What information should examiners review when determining the performance context of an institution seeking CRA consideration for its economic development activities?

15. What information is available that could be used to evaluate the local business environment and economic development needs in a low- or moderate-income geography or among low- or moderate-income individuals within the institution's assessment area(s)?

16. Are there particular measurements of impact that examiners should consider when evaluating the quality of jobs created, retained, or improved?

B. Community Development Loans

The Agencies' CRA regulations at 12 CFR ____.12(h) define ''community development loan'' to mean a loan that has community development as its primary purpose. Existing Q&A § ____.12(h)–1 provides examples of community development loans. The Agencies propose to add an example to clarify how examiners may consider loans related to renewable energy or energy-efficient technologies that also have a community development component. These activities commonly are referred to as ''green'' activities and are not specifically addressed under existing guidance.

Community organizations, examiners, and bankers have stated that affordable housing providers may install renewable energy or energy-efficient technologies to help reduce operational costs and maintain the affordability of single- and multi-family rental housing. Additionally, affordable housing developers may incorporate energy-efficient equipment into new and rehabilitated housing units or common area facilities to reduce utility costs and improve long-term affordability for low- and moderate-income homeowners. Further, communities may use sustainable energy sources to reduce the cost of providing services. Communities also may incorporate the development of related industries into local economic development plans to support job creation initiatives.

Bankers have commented that examiners do not always give consideration for projects or initiatives that incorporate ''green'' components because the concept is not specifically addressed in either the CRA regulations or the Questions and Answers. In addition, examiners may be hesitant to provide consideration because the benefit to low- or moderate-income residents, borrowers, or communities may not be easily quantified, particularly in cases in which the benefit is indirect. For example, renewable energy savings may reduce operating costs for an affordable housing development overall, without necessarily accruing a direct benefit to individual residents. Another example of such indirect benefit might be a loan to facilitate the installation of a solar power system, when the reduction in utility costs due to the sale of electricity generated by the solar panels is allocated to cover the expense of providing electricity to common areas of an affordable housing development.

The Agencies have learned of examples in which financial institutions helped finance energy-efficiency initiatives related to the rehabilitation or development of affordable housing projects and were not given CRA consideration for their activities. The Agencies have also heard from bankers that having specific examples in guidance helps to create incentives within their financial institutions to pursue such projects. The Agencies concur that loans that enable energy initiatives that help to reduce the cost of operating or maintaining affordable housing, even if the benefit to residents is indirect, qualify for consideration as community development loans.

To address these comments and concerns, the Agencies propose to revise Q&A § ____.12(h)–1 to incorporate a new example of a community development loan that would illustrate how a loan that finances renewable energy or energy-efficient technologies and that also has a community development component may be considered in a financial institution's performance evaluation.

All loans considered in an institution's CRA evaluation, including loans that finance renewable energy or energy-efficient technologies, must be consistent with the safe and sound operation of the institution and should not include features that could compromise any lender's existing lien position.

The text of proposed revised Q&A § ____.12(h)–1 follows:

§ ____.12(h)–1:*What are examples of community development loans?*

A1. Examples of community development loans include, but are not limited to, loans to

- Borrowers for affordable housing rehabilitation and construction, including construction and permanent financing of multifamily rental property serving low- and moderate-income persons;
- not-for-profit organizations serving primarily low- and moderate-income

housing or other community development needs;

• borrowers to construct or rehabilitate community facilities that are located in low- and moderate-income areas or that serve primarily low- and moderate-income individuals;

• financial intermediaries including Community Development Financial Institutions, New Markets Tax Credit-eligible Community Development Entities, Community Development Corporations, minority- and women-owned financial institutions, community loan funds or pools, and low-income or community development credit unions that primarily lend or facilitate lending to promote community development;

• local, state, and tribal governments for community development activities;

• borrowers to finance environmental clean-up or redevelopment of an industrial site as part of an effort to revitalize the low- or moderate-income community in which the property is located;

• businesses, in an amount greater than $1 million, when made as part of the Small Business Administration's 504 Certified Development Company program; and

• borrowers to finance renewable energy or energy-efficient equipment or projects that support the development, rehabilitation, improvement, or maintenance of affordable housing or community facilities, such as a health clinic, even if the benefit to low- or moderate-income individuals from reduced cost of operations is indirect, such as reduced cost of providing electricity to common areas of an affordable housing development.

The rehabilitation and construction of affordable housing or community facilities, referred to above, may include the abatement or remediation of, or other actions to correct, environmental hazards, such as lead-based paint, that are present in the housing, facilities, or site.

The Agencies solicit comments on all aspects of this proposed revised Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

17. Should loans for renewable energy or energy-efficient equipment or projects that support the development, rehabilitation, improvement, or maintenance of community facilities that serve low- or moderate-income individuals be considered under the CRA regulations?

18. Do the proposed revisions make clear which energy-efficiency activities would be considered under the CRA regulations?

C. Revitalize or Stabilize Underserved Nonmetropolitan Middle-Income Geographies

The Agencies' CRA regulations at 12 CFR __.12(g)(4) define community development to include activities that revitalize or stabilize particular areas. Existing Q&A § __.12(g)(4)(iii)–4 provides further guidance by listing examples of activities that help to revitalize or stabilize underserved nonmetropolitan middle-income geographies. The Agencies propose to revise this guidance by adding an example of a qualified activity related to communications infrastructure.

The Federal government actively promotes the expansion of broadband infrastructure into rural and tribal areas due to its importance to global competitiveness, job creation, innovation, and the expansion of markets for American businesses. Yet many areas continue to lack adequate access to this crucial resource.[2] Further, the availability of broadband is essential to access banking services, particularly as financial institutions shift away from branch-based delivery systems. Currently, consumers and small businesses in many rural and tribal areas may not have reliable access to Internet-based alternative delivery systems for banking services because they do not have access to broadband service. In addition, improved broadband access supports economic development, as small businesses and farms increasingly use broadband-reliant technologies for payment processing systems, remote deposit capture, to access credit facilities, and to market and arrange delivery of products.

The Agencies agree that the availability of a reliable communications infrastructure is important to help to revitalize or stabilize underserved nonmetropolitan middle-income geographies. It is particularly important as banking services, as well as services such as credit and housing counseling, are increasingly delivered online.

To address these concerns, the Agencies propose to add a new example involving communication infrastructure as an activity that would be considered to ''revitalize or stabilize'' an underserved nonmetropolitan middle-income geography. Additionally, in order to improve readability, the format of the answer has been revised to include a bulleted list containing the examples of activities. The text of proposed revised Q&A § __ .12(g)(4)(iii)—4 follows:

§ __.12(g)(4)(iii)–4: *What activities are considered to ''revitalize or stabilize'' an underserved nonmetropolitan middle-income geography, and how are those activities evaluated*?

A4. The regulation provides that activities revitalize or stabilize an underserved nonmetropolitan middle-income geography if they help to meet essential community needs, including needs of low- or moderate-income individuals. Activities, such as financing for the construction, expansion, improvement, maintenance, or operation of essential infrastructure or facilities for health services, education, public safety, public services, industrial parks, affordable housing, or communication services, will be evaluated under these criteria to determine if they qualify for revitalization or stabilization consideration. Examples of the types of projects that qualify as meeting essential community needs, including needs of low- or moderate-income individuals, would be

• A new or expanded hospital that serves the entire county, including low- and moderate-income residents;

• an industrial park for businesses whose employees include low- or moderate-income individuals;

• a new or rehabilitated sewer line that serves community residents, including low- or moderate-income residents;

• a mixed-income housing development that includes affordable housing for low- and moderate-income families;

• a renovated elementary school that serves children from the community, including children from low- and moderate-income families; or

• a new or rehabilitated communication infrastructure, such as broadband internet service, that serves the community, including low- and moderate-income residents.

Other activities in the area, such as financing a project to build a sewer line spur that connects services to a middle- or upper-income housing development while bypassing a low- or moderate-income development that also needs the sewer services, generally would not qualify for revitalization or stabilization consideration in geographies designated as underserved. However, if an underserved geography is also designated as distressed or a disaster area, additional activities may be considered to revitalize or stabilize the geography, as explained in Q&As § __ .12(g)(4)(ii)–2 and § __.12(g)(4)(iii)–3.

[2] *See* ''Accelerating Broadband Infrastructure Deployment,'' Exec. Order No. 13,616, 77 FR 36903 (June 20, 2012).

The Agencies solicit comments on all aspects of this proposed revised Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

19. Should communications infrastructure, such as broadband internet service, that serves an institution's community, including low- and moderate-income residents, be considered an activity that revitalizes or stabilizes a community? Should CRA consideration be given to such activities?

20. Does the proposed revised guidance sufficiently clarify which activities related to communications infrastructure would be considered under the CRA?

Proposed New Questions and Answers

I. Community Development Services

A. Evaluating Retail Banking and Community Development Services

Community development services are an important component of community reinvestment. These services promote credit and affordable product availability, technical assistance to community development organizations, and financial education programs for low- and moderate-income individuals. The performance criteria for the large institution service test are comprised of two parts: (i) Retail banking services, and (ii) community development services. Pursuant to the regulations, examiners analyze both the availability and effectiveness of a financial institution's systems for delivering retail banking services and the extent and innovativeness of its community development services.

Despite the benefits of community development services, and regulatory language requiring their consideration, as discussed above, commenters have asserted that community development services are not given sufficient consideration in the service test relative to retail banking services. To address this concern, the Agencies are proposing a new Q&A § __.24(a)–1 that would clarify how retail banking services and community development services are evaluated. In addition, the proposed new Q&A would explain the importance of the community development service criterion of the service test.

The CRA regulations define a community development service as a service that (i) has as its primary purpose community development; (ii) is related to the provision of financial services; and (iii) has not been considered in the evaluation of the institution's retail banking services under 12 CFR § __.24(d). Examples of community development services noted in the Questions and Answers include retail services that benefit or serve low- or moderate-income consumers. Consequently, many examiners consider services that benefit low- and moderate-income consumers, such as low-cost transaction or savings accounts and electronic benefit transfers, under the retail performance criteria of the service test rather than as community development services.

Under the regulations, the Agencies evaluate community development services pursuant to two criteria: (i) The extent to which the institution provides community development services, and (ii) the innovativeness and responsiveness of community development services. *See* 12 CFR § __ .24(e). However, commenters contend that there seems to be little emphasis placed on determining whether products and services, which are intended to improve or increase access by low- or moderate-income individuals to financial services, are effective or responsive to community needs as required under the regulation.

Accordingly, the Agencies propose a new Q&A § __.24(a)—1 to clarify how retail banking services and community development services are evaluated. The Agencies intend this clarification to improve consistency and reduce uncertainty regarding the performance criteria in the service test and encourage additional community development services by affirming the importance of community development services. The text of proposed new Q&A § __.24(a)–1 follows:

§ __.24(a)–1: *How do examiners evaluate retail banking services and community development services under the large institution service test?*

A1. In evaluating retail services, examiners consider the availability and effectiveness of an institution's systems to deliver banking services, particularly in low- and moderate-income geographies and to low- and moderate-income individuals, the range of services provided in low-, moderate-, middle-, and upper-income geographies, and the degree to which the services are tailored to meet the needs of those geographies.

In evaluating community development services, examiners consider the extent of community development services offered, and the responsiveness and effectiveness of those retail services deemed community development services under Q&A § __ .12(i)—3 because they improve or increase access to financial services by low- and moderate-income individuals or in low- or moderate-income geographies. Examiners will consider any information provided by the institution that demonstrates community development services are responsive to those needs.

The Agencies solicit comments on all aspects of this proposed new Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

21. Does the proposed new guidance sufficiently clarify how examiners evaluate retail and community development services under the large institution service test? If not, why not? How could the answer be made clearer?

22. What types of information are financial institutions likely to maintain that may be used to demonstrate that an institution's community development services are responsive to the needs of low- and moderate-income individuals or in low- and moderate-income geographies?

B. Quantitative and Qualitative Measures of Community Development Services

As noted earlier, the regulations require the evaluation of (i) the extent to which an institution provides community development services, and (ii) the innovativeness and responsiveness of community development services when considering community development service performance under the service test. *See* 12 CFR __.24(e). However, commenters assert that it is often difficult to quantitatively or qualitatively evaluate community development services and that the difficulty appears to impede consideration of community development services in the service test.

Bankers note inconsistencies in how community development services are evaluated quantitatively. For instance, some performance evaluations reflect the number of hours that financial institution employees spend in board meetings, delivering workshops, or providing financial counseling services, while other performance evaluations reflect the range of services provided and/or the number of organizations or individuals served. In addition, commenters contend that there is inadequate consideration of whether products and services, which are intended to improve or increase access by low- and moderate-income individuals to financial services, are effective or responsive to community needs, as required under the CRA regulations.

The Agencies agree with commenters that further guidance would promote consistency in the quantitative

evaluation of community development services. In particular, the Agencies believe that it is important to clarify that examiners need not look at any one specific quantitative factor when evaluating community development services.

In order to address these concerns, the Agencies are proposing a new Q&A § __.24(e)—2 that would address the quantitative and qualitative factors that examiners review when evaluating community development services to determine whether community development services are effective and responsive. The text of proposed new Q&A § __.24(e)–2 follows:

§ __.24(e)–2: *In evaluating community development services, what quantitative and qualitative factors do examiners review?*

A2. The community development services criteria are important factors in the evaluation of a large institution's service test performance. Both quantitative and qualitative aspects of community development services are considered during the evaluation. Examiners assess the extent to which community development services are offered and used. The review is not limited to a single quantitative factor, for example, the number of hours financial institution staff devotes to a particular community development service. Rather, the evaluation also assesses the degree to which community development services are responsive to community needs. Examiners will consider any relevant information provided by the institution and from third parties to quantify the extent and responsiveness of community development services.

The Agencies solicit comments on all aspects of this proposed new Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

23. Does the proposed new guidance sufficiently explain the importance of the qualitative factors related to community development services?

24. What types of information are financial institutions and relevant third parties likely to maintain that may be used to demonstrate the extent to which community development services are offered and used?

II. Responsiveness and Innovativeness

A. Responsiveness

The term ''responsive'' is found throughout the CRA regulations and the Questions and Answers. Generally, the Agencies' regulations and guidance promote an institution's responsiveness to credit and community development needs by providing that the greater an institution's responsiveness to credit and community development needs in its assessment area(s), the higher the CRA rating that is assigned to that institution.[3] For example, Q&A § __.21(a)–2 explains that responsiveness is meant to lend a qualitative element to the rating system. Other Q&As explain that examiners should give greater weight to those activities that are most responsive to community needs, including the needs of low- and moderate-income individuals or neighborhoods. *See, e.g.,* Q&As § __.12(g)(4)(ii)–2 and § __.12(g)(4)(iii)–3. Other Q&As mention various types of activities that may be considered responsive to community needs. *See, e.g.,* Q&As § __.12(g)(3)–1 and § __.12(t)–8. Many of the Q&As addressing ''responsiveness'' also indicate that an institution's performance context influences assessment of the responsiveness of a given activity. Further, Q&A § __.12(h)–6, which was revised as part of the 2013 Guidance, also placed emphasis on an institution's responsiveness to community development needs and opportunities in its assessment area(s).

When the Agencies revised their CRA rules to adopt the concept of ''intermediate small'' institutions and added a community development test for those institutions in 2005, one performance factor in the new community development test evaluated the institution's responsiveness through community development activities to community development lending, investment, and service needs. To elaborate on this factor, the agencies also adopted Q&A § __.26(c)(4)–1 to describe ''responsiveness to community development needs'' in the context of the community development test for intermediate small institutions.

Because the concept of ''responsiveness'' is utilized in the CRA regulations and Questions and Answers applicable to all covered institutions, the Agencies propose a new Q&A § __.21(a)–3 that sets forth general guidance on how examiners evaluate whether a financial institution has been responsive to credit and community development needs. The proposed Q&A is intended to encourage institutions to think strategically about how to best meet the needs of their communities based on their performance context.

The new Q&A indicates that examiners will look at not only the volume and types of an institution's activities, but also how effective those activities have been. Examiners always evaluate responsiveness in light of an institution's performance context. The proposed Q&A suggests several information sources that may inform examiners' evaluations of performance context and responsiveness. The text of proposed new Q&A § __.21(a)–3 follows:

§ __.21(a)–3: *''Responsiveness'' to credit and community development needs is either a criterion or otherwise a consideration in all of the performance tests. How do examiners evaluate whether a financial institution has been ''responsive'' to credit and community development needs?*

A1. Examiners evaluate the volume and type of an institution's activities, i.e., retail and community development loans and services and qualified investments, as a first step in evaluating the institution's responsiveness to community credit needs. In addition, an assessment of ''responsiveness'' encompasses the qualitative aspects of performance, including the effectiveness of the activities. For example, some community development activities require specialized expertise or effort on the part of the institution or provide a benefit to the community that would not otherwise be made available. In some cases, a smaller loan may have more benefit to a community than a larger loan. Activities are considered particularly responsive to community development needs if they benefit low- and moderate-income individuals, low- or moderate-income geographies, designated disaster areas, or distressed or underserved nonmetropolitan middle-income geographies.

Examiners evaluate the responsiveness of an institution's activities to credit and community development needs in light of the institution's performance context. That is, examiners consider the institution's capacity, its business strategy, the needs of the community, and the opportunities for lending, investments, and services in the community. To inform their evaluation, examiners may consider information from many sources, including

- Demographic and other information compiled by local, state, and Federal government entities;
- public comments received by the Agency, for example, in response to its publication of its planned examination schedule;
- information from community leaders or organizations; and

[3] For example, Appendix A—Ratings states, ''The [Agency] rates [an institution's] investment performance 'outstanding' if, in general, it demonstrates: . . . (C) Excellent responsiveness to credit and community development needs.'' 12 CFR __app. A(b)(2)(i). Responsiveness is generally a consideration in all of the ratings.

• the results of an assessment, prepared by an institution in the normal course of business, of the credit and community development needs in the institution's assessment area(s) and how the institution's activities respond to those needs.

The Agencies solicit comments on all aspects of this proposed new Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

25. Does this proposed new guidance appropriately highlight the importance of responsiveness to credit and community development needs and provide a flexible, yet clear, standard for determining how financial institutions will receive consideration?

26. Are there other sources of information that examiners should consider when evaluating an institution's responsiveness to credit and community development needs?

27. In connection with community development activities that will not directly benefit a financial institution's assessment area(s), as described in Q&A § __.12(h)–6 in the 2013 Guidance, would the proposed new Q&A help a financial institution in making decisions about the community development activities in which to participate? Note that Q&A § __.12(h)–6 addresses two categories of community development activities that will not directly benefit a financial institution's assessment area(s): (i) Those that have a purpose, mandate, or function to serve the assessment area(s); and (ii) those that do not directly benefit the assessment area(s) but that do benefit geographies or individuals in the broader statewide or regional area that includes the institution's assessment area(s).

B. Innovativeness

Innovativeness, like responsiveness, is a standard that is found throughout the CRA regulations. For example, ''innovativeness'' is included as a standard throughout the performance tests for large financial institutions. The large institution lending test evaluates the innovativeness of community development lending and the institution's use of innovative lending practices in a safe and sound manner to address the credit needs of low- or moderate-income individuals or geographies. *See* 12 CFR __.22(b)(4) and (b)(5). The large institution investment test evaluates the innovativeness or complexity of qualified investments. *See* 12 CFR __.23(e)(2). Similarly, the large institution service test evaluates the innovativeness and responsiveness of community development services. *See* 12 CFR __.24(e)(2).

The three-part performance criteria in the community development test for wholesale or limited purpose banks includes an evaluation of the use of innovative or complex qualified investments, community development loans, or community development services. *See* 12 CFR __.25(c)(2). Finally, when evaluating a strategic plan, the Agencies evaluate a plan's measurable goals according to the regulatory criteria, all of which mention innovativeness. *See* 12 CFR __.27(g)(3).[4]

The Questions and Answers also provide further guidance on what is meant by ''innovativeness.'' For example, under the large institution lending test, the Agencies state that in evaluating the innovativeness of an institution's lending practices (and the innovativeness of its community development lending), examiners are not limited to reviewing the overall variety and specific terms and conditions of the credit products themselves. In connection with the evaluation of an institution's lending, examiners also may give consideration to related innovations when they augment the success and effectiveness of the institution's lending under community development loan programs or, more generally, its lending under its loan programs that address the credit needs of low- and moderate-income geographies or individuals. *See* Q&A § __.22(b)(5)–1.

In addition, the Questions and Answers provide that innovative lending practices, innovative or complex qualified investments, and innovative community development services are not required for a ''satisfactory'' or ''outstanding'' CRA rating, even for large institutions or wholesale and limited purpose institutions. *See* Q&A § __.28–1. However, under these tests, the use of innovative lending practices, qualified investments, and community development services may augment the consideration given to an institution's performance under the quantitative criteria of the regulations, resulting in a higher level of performance rating. *Id.*

Bankers have sought further guidance, reporting that there are inconsistencies in the types of activities that have been considered innovative. For instance, bankers have mentioned that some examiners consider community development services innovative only if they are new to a particular market or to the assessment area, while others consider an activity innovative if it is new to the institution.

The Agencies agree that additional clarification regarding the meaning of ''innovativeness'' would benefit both examiners and institutions. Therefore, the Agencies are proposing a new Q&A § __.21(a)–4 that would address what is meant by ''innovativeness.'' First, the proposed new guidance discusses innovativeness based on the institution, stating that an innovative practice or activity will be considered when an institution implements meaningful improvements to products, services, or delivery systems that respond more effectively to customer and community needs, particularly those segments enumerated in the definition of community development. Then, the proposed new Q&A addresses innovativeness in terms of an institution's market and customers, specifically stating that innovation includes the introduction of products, services, or delivery systems by institutions, which do not have the capacity to be market leaders in innovation, to their low- or moderate-income customers or segments of consumers or markets not previously served. The Agencies' proposal stresses that institutions should not innovate simply to meet this criterion of the applicable test, particularly if, for example, existing products, services, or delivery systems effectively address the needs of all segments of the community. Finally, the proposed new Q&A indicates that practices that cease to be innovative may still receive qualitative consideration for being flexible, complex, or responsive. A practice typically ceases to be innovative for an institution when the once innovative practice has become a standard, everyday practice of the institution.

The text of proposed new Q&A § __ .21(a)–4 follows:

§ __.21(a)–4: *What is meant by ''innovativeness''*

A. Innovativeness is one of several qualitative considerations under the lending, investment, and service tests. The community development test for wholesale and limited purpose institutions similarly considers ''innovative'' loans, investments, and services in the evaluation of performance. Under the CRA regulations, an innovative practice or activity will be considered when an institution implements meaningful improvements to products, services, or delivery systems that respond more effectively to customer and community needs, particularly those segments enumerated in the definition of community development.

[4] ''Innovativeness'' is not a factor in the community development test applicable to intermediate small institutions. *See* Q &A § __ .21(a)–2.

Institutions should not innovate simply to meet this criterion of the applicable test, particularly if, for example, existing products, services, or delivery systems effectively address the needs of all segments of the community. Innovative activities are especially meaningful when they emphasize serving, for example, low- or moderate-income consumers or distressed or underserved non-metropolitan middle-income geographies in new or more effective ways. Innovation also includes the introduction of existing types of products, services, or delivery systems by institutions, which do not have the capacity to be market leaders in innovation, to their low- or moderate-income customers or segments of consumers or markets not previously served. Practices that cease to be innovative may still receive qualitative consideration for being flexible, complex, or responsive.

The Agencies solicit comments on all aspects of this proposed new Q&A. In addition, the Agencies specifically request commenters' views on the following questions.

28. Does the proposed new guidance clarify what is meant by innovativeness?

29. Does the proposed new guidance appropriately explain innovations that may occur at financial institutions of different sizes and types?

30. Is it clear that innovative activities are not required?

General Comments

The Agencies invite comments on any aspect of this proposal. The Agencies particularly would like comments addressing those questions specifically noted at the end of the discussion of each of the proposed revised and new Q&As in this supplementary information section.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) (PRA), the Agencies may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. The proposed revisions to the Questions and Answers would not involve any new collections of information pursuant to the PRA. Consequently, no information will be submitted to OMB for review.

Solicitation of Comments Regarding the Use of ''Plain Language''

Section 722 of the Gramm-Leach-Bliley Act of 1999, 12 U.S.C. 4809, requires the Agencies to use ''plain language'' in all proposed and final rules published after January 1, 2000. Although this guidance is not a proposed or final rule, comments nevertheless are invited on whether the proposed revised interagency Q&As are stated clearly, and how the guidance might be revised to make it easier to read.

Dated: August 6, 2014.

Thomas J. Curry,

Comptroller of the Currency.

By order of the Board of Governors of the Federal Reserve System, September 4, 2014.

Secretary of the Board.

Dated at Washington, DC, this 14th day of August, 2014.

Federal Deposit Insurance Corporation.

Robert E. Feldman,

Executive Secretary.

[FR Doc. 2014–21560 Filed 9–9–14; 8:45 am]

BILLING CODE 4810–33–6210–01– 6714–01–P

FEDERAL REGISTER

Vol. 79 Wednesday,

No. 175 September 10, 2014

Part II

Department of Commerce

National Oceanic and Atmospheric Administration

50 CFR Part 223

Endangered and Threatened Wildlife and Plants: Final Listing Determinations on Proposal To List 66 Reef-Building Coral Species and To Reclassify Elkhorn and Staghorn Corals; Final Rule

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 0911231415–4826–04]

RIN 0648–XT12

Endangered and Threatened Wildlife and Plants: Final Listing Determinations on Proposal To List 66 Reef-Building Coral Species and To Reclassify Elkhorn and Staghorn Corals

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: We, the National Marine Fisheries Service (NMFS), are publishing this final rule to implement our final determination to list the following 20 species as threatened: five in the Caribbean (*Dendrogyra cylindrus, Orbicella annularis, Orbicella faveolata, Orbicella franksi,* and *Mycetophyllia ferox*); and 15 in the Indo-Pacific (*Acropora globiceps, Acropora jacquelineae, Acropora lokani, Acropora pharaonis, Acropora retusa, Acropora rudis, Acropora speciosa, Acropora tenella, Anacropora spinosa, Euphyllia paradivisa, Isopora crateriformis, Montipora australiensis, Pavona diffluens, Porites napopora,* and *Seriatopora aculeata*) under the Endangered Species Act (ESA) of 1973, as amended. The two species currently listed as threatened (*Acropora cervicornis* and *Acropora palmata*) in the Caribbean still warrant listing as threatened. We also determined that a total of 43 proposed species do not warrant listing as endangered or threatened species, and three proposed species are not determinable under the ESA. We have reviewed the status of the species and efforts being made to protect the species, and public comments received on the proposed rule, and we have made our determinations based on the best scientific and commercial data available. We also solicit information that may be relevant to the designation of critical habitat for the 20 species newly listed under this final rule.

DATES: The effective date of this final rule is October 10, 2014. Responses to the request for information regarding a subsequent ESA section 4(d) Rule and critical habitat designation must be received by November 10, 2014.

ADDRESSES: Submit responses to the request for information regarding a subsequent ESA section 4(d) Rule and critical habitat designation to National Marine Fisheries Service, Pacific Islands Regional Office, NOAA Inouye Regional Center, 1845 Wasp Blvd., Building 176, Honolulu, HI 96818; or National Marine Fisheries Service, Southeast Regional Office, 263 13th Avenue South, Saint Petersburg, FL 33701.

FOR FURTHER INFORMATION CONTACT: Lance Smith, NMFS, Pacific Island Regional Office, 808–725–5131; Jennifer Moore, NMFS, Southeast Regional Office, 727–824–5312; or Marta Nammack, NMFS, Office of Protected Resources, 301–427–8469. A list of the literature cited in this rule is available at *http://coral.sero.nmfs.noaa.gov* and *http://www.fpir.noaa.gov/PRD/prd_coral.html.*

SUPPLEMENTARY INFORMATION:

Background

On October 20, 2009, the Center for Biological Diversity (CBD) petitioned us to list 83 reef-building corals as threatened or endangered under the Endangered Species Act (ESA) and designate critical habitat. The 83 species included in the petition were: *Acanthastrea brevis, Acanthastrea hemprichii, Acanthastrea ishigakiensis, Acanthastrea regularis, Acropora aculeus, Acropora acuminata, Acropora aspera, Acropora dendrum, Acropora donei, Acropora globiceps, Acropora horrida, Acropora jacquelineae, Acropora listeri, Acropora lokani, Acropora microclados, Acropora palmerae, Acropora paniculata, Acropora pharaonis, Acropora polystoma, Acropora retusa, Acropora rudis, Acropora speciosa, Acropora striata, Acropora tenella, Acropora vaughani, Acropora verweyi, Agaricia lamarcki, Alveopora allingi, Alveopora fenestrata, Alveopora verrilliana, Anacropora puertogalerae, Anacropora spinosa, Astreopora cucullata, Barabattoia laddi, Caulastrea echinulata, Cyphastrea agassizi, Cyphastrea ocellina, Dendrogyra cylindrus, Dichocoenia stokesii, Euphyllia cristata, Euphyllia paraancora, Euphyllia paradivisa, Galaxea astreata, Heliopora coerulea, Isopora crateriformis, Isopora cuneata, Leptoseris incrustans, Leptoseris yabei, Millepora foveolata, Millepora tuberosa, Montastraea annularis, Montastraea faveolata, Montastraea franksi, Montipora angulata, Montipora australiensis, Montipora calcarea, Montipora caliculata, Montipora dilatata, Montipora flabellata, Montipora lobulata, Montipora patula, Mycetophyllia ferox, Oculina varicosa, Pachyseris rugosa, Pavona bipartita, Pavona cactus, Pavona decussata, Pavona diffluens, Pavona venosa, Pectinia alcicornis, Physogyra lichtensteini, Pocillopora danae, Pocillopora elegans, Porites horizontalata, Porites napopora, Porites nigrescens, Porites pukoensis, Psammocora stellata, Seriatopora aculeata, Turbinaria mesenterina, Turbinaria peltata, Turbinaria reniformis,* and *Turbinaria stellulata.* Eight of the petitioned species occur in the Caribbean, and 75 of the petitioned species occur in the Indo-Pacific region. Most of the 83 species can be found in the United States, its territories (Puerto Rico, U.S. Virgin Islands, Navassa, Northern Mariana Islands, Guam, American Samoa, Pacific Remote Island Areas), or its freely associated states (Republic of the Marshall Islands, Federated States of Micronesia, and Republic of Palau), though many occur more frequently in other countries.

On February 10, 2010, we published a 90-day finding (75 FR 6616) that CBD had presented substantial information indicating the petitioned actions may be warranted for all of the petitioned species except for the Caribbean species *Oculina varicosa.* We also announced the initiation of a formal status review of the remaining 82 petitioned species, and we solicited input from the public on six categories of information: (1) Historical and current distribution and abundance of these species throughout their ranges (U.S. and foreign waters); (2) historical and current condition of these species and their habitat; (3) population density and trends; (4) the effects of climate change on the distribution and condition of these coral species and other organisms in coral reef ecosystems over the short and long term; (5) the effects of all other threats including dredging, coastal development, coastal point source pollution, agricultural and land use practices, disease, predation, reef fishing, aquarium trade, physical damage from boats and anchors, marine debris, and aquatic invasive species on the distribution and abundance of these coral species over the short- and long-term; and (6) management programs for conservation of these species, including mitigation measures related to any of the threats listed under No. 5 above.

The ESA requires us to make determinations on whether species are threatened or endangered ''solely on the basis of the best scientific and commercial data available * * * after conducting a review of the status of the species * * * '' (16 U.S.C. 1533). Further, our implementing regulations

specifically direct us not to take possible economic or other impacts of listing species into consideration (50 CFR 424.11(b)). We convened a Coral Biological Review Team (BRT) composed of seven Federal scientists from NMFS' Pacific Islands, Northwest, and Southeast Fisheries Science Centers, as well as the U.S. Geological Survey and National Park Service. The members of the BRT are a diverse group of scientists with expertise in coral biology, coral ecology, coral taxonomy, physical oceanography, global climate change, coral population dynamics and endangered species extinction risk evaluations. The BRT's comprehensive, peer-reviewed Status Review Report (SRR; Brainard *et al.*, 2011) incorporates and summarizes the best available scientific and commercial information as of August 2011 on the following topics: (1) Long-term trends in abundance throughout each species' range; (2) potential factors for any decline of each species throughout its range (human population, ocean warming, ocean acidification, overharvesting, natural predation, disease, habitat loss, *etc.*); (3) historical and current range, distribution, and habitat use of each species; (4) historical and current estimates of population size and available habitat; and (5) knowledge of various life history parameters (size/age at maturity, fecundity, length of larval stage, larval dispersal dynamics, *etc.*). The SRR evaluates the status of each species, identifies threats to the species, and estimates the risk of extinction for each of the species out to the year 2100. The BRT also considered the petition, comments we received as a result of the 90-day finding (75 FR 6616; February 10, 2010), and the results of the peer review of the draft SRR, and incorporated relevant information from these sources into the final SRR. Additionally, we developed a supplementary, peer-reviewed Draft Management Report (NMFS, 2012a) to identify information relevant to ESA factor 4(a)(1)(D), inadequacy of existing regulatory mechanisms, and protective efforts that may provide protection to the corals pursuant to ESA section 4(b).

The response to the petition to list 83 coral species is one of the broadest and most complex listing reviews we have ever undertaken. Given the petition's scale and the precedential nature of the issues, we determined that our decision-making process would be strengthened if we took additional time to allow the public, non-Federal experts, non-governmental organizations, state and territorial governments, and academics to review and provide information related to the SRR and the Draft Management Report prior to issuing our 12-month finding. Thus on April 17, 2012, we published a **Federal Register** notice announcing the availability of the SRR and the Draft Management Report, and specifically requested information on the following: (1) Relevant scientific information collected or produced since the completion of the SRR or any relevant scientific information not included in the SRR; and (2) relevant management information not included in the Draft Management Report, such as descriptions of regulatory mechanisms for greenhouse gas (GHG) emissions globally, and for local threats in the 83 foreign countries and the United States, its territories (Puerto Rico, U.S. Virgin Islands, Navassa, Northern Mariana Islands, Guam, American Samoa, Pacific Remote Island Areas), or its freely associated states (Republic of the Marshall Islands, Federated States of Micronesia, and Republic of Palau), where the 82 petitioned coral species collectively occur. Further, in June 2012, we held listening sessions and scientific workshops in the Southeast region and Pacific Islands region to engage the scientific community and the public in-person. During this public engagement period, which ended on July 31, 2012, we received over 42,000 letters and emails. Also, we were provided with or we identified approximately 400 relevant scientific articles, reports, or presentations that were produced since the SRR was finalized, or not originally included in the SRR. We compiled and synthesized all relevant information that we identified or received into the Supplemental Information Report (SIR; NMFS, 2012c). Additionally, we incorporated all relevant management and conservation information into the Final Management Report (NMFS, 2012b). Therefore, the 82 candidate coral species comprehensive status review consists of the SRR (Brainard *et al.*, 2011), the SIR (NMFS, 2012c), and the Final Management Report (NMFS, 2012b).

On December 7, 2012, we published a proposed rule (77 FR 73219) to list 12 of the petitioned coral species as endangered (five Caribbean and seven Indo-Pacific) and 54 coral species as threatened (two Caribbean and 52 Indo-Pacific), and we determined 16 coral species (all Indo-Pacific) did not warrant listing as threatened or endangered under the ESA. This was the final agency action for those species which we determined were not warranted for listing. We also determined that two currently listed Caribbean corals (*Acropora cervicornis* and *Acropora palmata*) warranted reclassification from threatened to endangered. The findings in the proposed rule were based on the information contained within the reports described above (SRR, SIR, and Final Management Report). During a 90-day comment period, we solicited comments from the public, other concerned governmental agencies, the scientific community, industry, foreign nations in which the species occur, and any other interested parties on our proposal. We later extended the public comment period by 30 days, making the full comment period 120 days. We received approximately 32,000 comments through electronic submissions, letters, and oral testimony from public hearings held in Dania Beach, FL; Key Largo, FL; Key West, FL; Rio Piedras, Puerto Rico; Mayaguez, Puerto Rico; Christiansted, St. Croix, U.S. Virgin Islands; Charlotte Amalie, St. Thomas, U.S. Virgin Islands; Hilo, Hawaii, HI; Kailua Kona, Hawaii, HI; Kaunakakai, Molokai, HI; Wailuku, Maui, HI; Lihue, Kauai, HI; Honolulu, Oahu, HI; Hagatna, Guam; Saipan, Commonwealth of the Northern Marianas Islands (CNMI); Tinian, CNMI; Rota, CNMI; Tutuila, American Samoa; and Washington, DC.

During the public comment period, we received numerous comments on the proposed listing and the sufficiency or accuracy of the available data used to support the proposed listing determinations. In particular, comments raised questions and provided varied, often conflicting, information regarding the following topics:

(1) The proposed species' listing statuses (*e.g.*, certain species proposed as endangered should be threatened);

(2) the sufficiency and quality, or lack thereof, of the species-specific information used for each species' proposed listing determination;

(3) the accuracy of the methods used to analyze the available information to assess extinction risk (including NMFS' ''Determination Tool'') and derive listing statuses for each of the proposed species;

(4) the ability of corals to adapt or acclimatize to ocean warming and acidification;

(5) the reliability, certainty, scale, and variability of future modeling and predictions of climate change; and

(6) the effect local management efforts have on coral resilience.

After considering these comments, we found that substantial disagreement existed regarding the sufficiency and accuracy of the available data used in support of the proposed determinations.

As a result, we determined it was necessary to solicit additional data from those scientists who were identified by public comments and others who may have additional data to assist in resolving the substantial disagreement. Therefore, pursuant to the ESA section 4(b)(6)(B)(i), we determined that a 6-month extension of the deadline for final determinations on the proposed rule was necessary (78 FR 57835; September 20, 2013). We completed our data collection effort in the fall of 2013, and the relevant information that we received or collected was considered in the formulation of this final rule. The data collection effort was the final step in our thorough process to assemble the best available information on the status of the species addressed in this final rule. As a result, this final rule represents a logical evolution from the proposed rule, including some changes in our overall decision-making framework and a holistic reconsideration of the key elements that contribute to a species' listing status, as described in detail throughout this rule. Consequently, most of the listing determinations have changed between the proposed and final rules.

Listing Species Under the Endangered Species Act

We are responsible for determining whether the 66 proposed coral species should be listed as threatened or endangered under the ESA, and whether the two species proposed for reclassification should be listed as endangered under the ESA (16 U.S.C. 1531 *et seq.*). Clonal, colonial organisms, such as corals, are vastly different in their biology and ecology than vertebrates, which are typically the focus of ESA status reviews. Therefore, concepts and terms that are typically applied to vertebrates have very distinct meanings when applied to corals. A 'rare' coral may have millions of colonies as compared to a 'rare' vertebrate, which may only have hundreds of individuals. To be considered for listing under the ESA, a group of organisms must constitute a ''species,'' which is defined in section 3 of the ESA to include ''any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.'' In the case of reef-building corals, the decision that a species is a listable entity is often complicated by several aspects of their biology including individual delineation, taxonomic uncertainty, identification uncertainty, and life history (*e.g.*, colonialism and clonality).

Section 3 of the ESA further defines an endangered species as ''any species which is in danger of extinction throughout all or a significant portion of its range'' and a threatened species as one ''which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' Section 4(a)(1) of the ESA requires us to determine whether any species is endangered or threatened due to any one or a combination of the following five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We are required to make listing determinations based solely on the best scientific and commercial data available after conducting a review of the status of the species and after taking into account efforts being made by any state or foreign nation to protect the species.

This finding begins with an overview of coral biology, ecology, and taxonomy in the Corals and Coral Reefs section below, including whether each proposed species meets the definition of a ''species'' for purposes of the ESA. Specifically, are the proposed species determinable under the ESA given any discrepancies between their current morphologically-based taxonomy and any new genetic information that may result in taxonomic reclassification. Other relevant background information in this section includes the general characteristics of the habitats and environments in which the proposed species are found. The finding then summarizes information on factors adversely affecting and posing extinction risk to corals in general in the Threats Evaluation section. The Risk Analyses section then describes the framework applied to each of the species that resulted in final listing statuses for the proposed species. The Species-specific Information and Determinations section provides the best available species-specific information, which, coupled with the general portions of this final rule, provide the basis for the individual determinations for final listing status. Finally, we assessed efforts being made to protect the species and determined if these efforts are adequate to mitigate impacts and threats to the extent that a species does not meet one of the statutory statuses.

Given the precedential and complex nature of this rule-making process, we took extra steps to assemble the best available information for informing the final listing determinations. Efforts to acquire this information first included the formation of an expert scientific panel (BRT) that used the best available scientific information at that time in a structured decision-making process to inform and write the SRR. Further, this process provided numerous opportunities for public input, including a public comment period after the 90-day finding in 2010 (75 FR 6616; February 10, 2012), a unique public information-gathering period (77 FR 22749; April 17, 2012) prior to the release of the proposed rule in 2012, and a 120-day formal public comment period after the publication of the proposed rule. Finally, in a targeted data-solicitation effort to resolve substantial scientific disagreement in the public comments on the proposed rule, we published a 6-month extension in September 2013 to gather additional information to further inform our final decisions (78 FR 57835; September 20, 2013). Over the course of this multi-year process, we gathered and reviewed thousands of scientific papers, journal articles, reports, and presentations (bibliography and select documents available at *http://www.nmfs.noaa.gov/pr/species/invertebrates/corals.htm*). In addition, we held a total of 19 public hearings in 2012 and 2013 throughout the Southeast and Pacific Islands regions, and received and reviewed over 75,000 public comments during the information-gathering period in 2012 and the proposed rule public comment period in 2012–2013, combined. These efforts ensure that this final rule is based upon the best available information on the proposed species at this time, as explained in more detail below.

Summary of Comments Received

Below we address the comments received pertaining to the proposed listings or reclassifications of the 68 coral species in the December 7, 2012, proposed rule (77 FR 73219). During the 120-day public comment period from December 7, 2012, to April 6, 2013, we received 1,120 written and verbal responses (including public testimony during the 19 public hearings). This included 1,119 unique comments on the proposed listings or reclassifications and 32,000 action alert responses in support of the rule organized by the petitioner CBD, which substantively constitutes one unique comment, and. The public comments received covered a wide breadth of topics, many of which

were significant and within the scope of this rule-making. We summarized the comments, and these summaries and our responses are organized according to the sections of the proposed rule on which those comments were based. We have considered all public comments, and we provide responses to all relevant issues raised by comments. We have not responded to comments outside the scope of this rulemaking, such as comments regarding the potential economic impacts of ESA listings, comments suggesting that certain types of activities be covered in any future regulations pursuant to ESA section 4(d) for threatened species, or whether ESA listings are appropriate for species threatened by climate change. As explained in the Background above, this final rule was extended by 6 months to resolve substantial scientific disagreement in the public comments on six topics related to the proposed listing.

Comments on Taxonomic Uncertainty in Reef-Building Corals

Comment 1: Many public comments on the proposed listing rule stated that species identification uncertainties and taxonomic uncertainties associated with many reef-building corals are problematic for the ESA listing determination process. Four comments specifically stated that the ability to determine the status of coral species under the ESA is impeded by the taxonomic uncertainty of many coral species. Two comments stated that genetic and genomic science is just beginning for corals, and as it develops it will likely show the current morphologically-based taxonomy is incorrect, completely changing current coral taxonomy. Therefore, management decisions based on the current taxonomy should be approached with caution. One comment stated that proper species identification, especially for the Indo-Pacific *Acropora* genus, is difficult and exacerbated by the use of outdated and inadequate information.

Most of these comments are based on species identification uncertainties and the conflicting taxonomic results between recent genetics studies and traditional morphology-based taxonomy, and comments identified two potential problems: (1) Species identification and taxonomic uncertainty prevents many reef-building coral taxa, especially in the Indo-Pacific, from being determinable species under the ESA; and (2) even if these taxa are determinable species under the ESA, the taxonomic uncertainty confounds the available information regarding the status of each species, thus it is not possible to determine the listing status of these species with adequate confidence.

Response: The comments correctly note that in some instances, lack of information, or ambiguity and uncertainty in available information, is so great that any listing determination on such a basis would be arbitrary. In our judgment, that is not the case for the proposed species, with a few exceptions noted below. The SRR concluded that the 68 species in the proposed rule were determinable, including the species for which the SRR found that splitting or lumping petitioned species was necessary based on genetic studies. For the proposed rule, we agreed with the SRR, and considered the 68 species to be determinable for purposes of conducting a status review and determining listing status under the ESA.

The public comments did not provide any studies or results, nor did we find any new studies or results, that significantly contradict the consideration of the traditional, morphologically described species as determinable species, with the exception of *Pocillopora.* We acknowledged in the proposed rule, however, that the taxonomic uncertainty for reef-building corals is not only real (Brainard *et al.,* 2011), but increasing in recent years as genetics studies have advanced (Stat *et al.,* 2012; Veron, 2013). In the case of *Pocillopora* species, the taxonomic uncertainty has recently increased substantially such that the three proposed species in this genus are not determinable under the ESA (see Comment 2). For the remaining 65 species, the best available scientific information continues to support their classification as species. The taxonomic uncertainty associated with each species is considered along with other types of uncertainty when determining the status of each species in the Species-specific Information and Determinations section. In this way, the species identification and taxonomic uncertainty for each species is acknowledged and incorporated into each of the 65 determinations in this final rule.

In this final rule, even though *Millepora foveolata* and *Montipora lobulata* were affirmed to be valid species, and there are few if any taxonomic uncertainty issues, the two species are so difficult to identify in the field that there is very little reliable information available for either species (Fenner, 2014b). Thus, as described in the Species-specific Information and Determinations below for *M. foveolata* and *M. lobulata*, the species identification uncertainty is so high for these species that there is not sufficient evidence to support listing determinations of threatened or endangered for either species. This is explained in more detail in each species' individual determination.

Comment 2: Related to Comment 1, one comment identified *Pocillopora* as a problematic taxon and provided a recent scientific paper describing new genetic evidence of taxonomic contradictions between genetic and morphologic results for *Pocillopora* species (Pinzón *et al.,* 2013).

Response: Based on information summarized in the SRR, the proposed rule split *P. elegans* into Indo-Pacific and Eastern Pacific nominal species, and proposed *P. elegans* (Indo-Pacific), *P. elegans* (Eastern Pacific), and *P. danae* for listing (*P. danae* only occurs in the Indo-Pacific). However, after considering new information on taxonomic uncertainty throughout the genus *Pocillopora* that has become available since the publication of the proposed rule, including the paper (Pinzón *et al.,* 2013) submitted by the commenter, we no longer consider the three *Pocillopora* species that were proposed for listing to be determinable under the ESA. A range-wide phylogeographic survey that included most currently recognized pocilloporid species found that reliance on colony morphology is broadly unreliable for species identification, and that several genetic groups have highly limited geographic distributions. The study concluded that ''a taxonomic revision informed foremost by genetic evidence is needed for the entire genus'' (Pinzón *et al.,* 2013). Similarly, a phylogeographic survey of several currently recognized pocilloporid species representing a range of atypical morphologies thought to be rare or endemic to remote locations throughout the Indo-Pacific found that: (1) The current taxonomy of Pocillopora based on colony morphology shows little correspondence with genetic groups; (2) colony morphology is far more variable than previously thought; and (3) there are numerous cryptic lineages (*i.e.,* two or more distinct lineages that are classified as one due to morphological similarities). The study concluded that ''the genus *Pocillopora* is in need of taxonomic revision using a combination of genetic, microscopic characters, and reproductive data to accurately delineate species'' (Marti-Puig *et al.,* 2013). Likewise, a more limited study of several currently recognized pocilloporid species in Moorea found that genetic groups do not correspond to colony morphology, and exhibit a wide range of morphological variation

(Forsman *et al.,* 2013). These studies demonstrate that colony morphology in pocilloporids is a poor indicator of taxonomic relationships, for the following reasons: (1) Morphologically similar colonies may not be the same species (*i.e.,* colonies of different species appear similar because of similar environmental conditions or other reasons); and (2) morphologically different colonies may be the same species (*i.e.,* colonies of the same species appear different because of different environmental conditions or other reasons).

While the current literature supports the taxonomic division of pocilloporids geographically into Indo-Pacific and Eastern Pacific groups, it indicates a high level of taxonomic uncertainty for all *Pocillopora* species that are found in both areas, such as *P. elegans.* Within these two geographic areas, colonies that resemble *P. elegans* may be different species, including possibly still undescribed species. That is, colonies may merely resemble *P. elegans* because of similar environmental conditions or other reasons, but actually may be different species. And the opposite type of taxonomic uncertainty also appears to be common, as colonies that do not resemble *P. elegans* may actually be *P. elegans.* That is, colonies that are *P. elegans* appear different because of different environmental conditions or other reasons (Forsman *et al.,* 2013; Marti-Puig *et al.,* 2013; Pinzón *et al.,* 2013). The recently appreciated taxonomic uncertainty is in addition to the historical morphological taxonomic uncertainty within the genus *Pocillopora* and for *P. elegans* specifically (Veron, 2013; Veron, 2014). While *P. danae* does not occur in the Eastern Pacific, similar taxonomic uncertainty problems occur for this species. That is, this species also had historical morphological taxonomic uncertainty (Veron, 2013), which has recently been compounded by genetic taxonomic uncertainty, leading Veron (2014) to conclude that the species likely requires a taxonomic revision. A new taxonomic revision of *Pocillopora* was published, in which *P. danae* was found to be a synonym of *P. verrucosa,* resulting in the traditional *P. danae* being included within *P. verrucosa* (Schmidt-Roach *et al.,* 2014). However, the overall taxonomic uncertainty within *Pocillopora,* including for *P. elegans* and *P. danae,* has not been resolved, and in fact continues to increase as more studies are conducted. Thus, at this time, *Pocillopora* species are not determinable under the ESA. Therefore, we are withdrawing our proposal to list *P. elegans* (Indo-Pacific) as threatened, *P. elegans* (Eastern Pacific) as endangered, and *P. danae* as threatened; these species are not considered further in this final rule.

Comment 3: Several comments objected to our agreement with the SRR's (Brainard *et al.,* 2011) lumping of *Montipora dilitata, M. flabellata,* and *M. turgescens* into a single species, as well as the lumping of *M. patula* and *M. verrilli* into a single species, based on the results of a single genetics study by Forsman *et al.* (2010).

Response: The objections in the public comments to lumping *Montipora dilitata*/*M. flabellata*/*M. turgescens* and *M. patula*/*M. verrilli* did not provide any new or supplemental information, nor did we find any new or supplemental information, contradicting the key study used by the SRR to consider these species as a group. We must use the best available science on which to base our determinations, and there is no indication that Forsman *et al.* (2010) is in error. However, as discussed in the response to Comment 1, we acknowledge that coral taxonomy is a rapidly growing field and that is creates uncertainty in determining a species under the ESA. This taxonomic uncertainty is considered in the individual Species-specific Information and Determination for the *Montipora.*

Comments on Reproductive Life History of Reef-Building Corals

Comment 4: There were only a few comments related to the reproductive life history of corals. One comment stated that coral reef connectivity data are sparse, and while the majority of published studies on coral larval dispersal report evidence of local seeding and replenishment of reefs, other models and studies report sporadic periods of longer distance dispersal and recruitment events. The commenter felt that the proposed rule did not adequately address coral population dynamics and connectivity in determining the status of the candidate coral species under the ESA. Another comment stated that there is almost no information on any of the species' trends or recruitment rates, and the limited information available is based on qualitative opinion, not quantitative data. The comment also pointed out that the proposed rule agreed that the term 'recruit' could be difficult to apply in the case of corals, which reproduce both sexually and asexually, and that the number of recruits per spawner depends on the age or size at which an entity is defined as a recruit. These comments assert that there is insufficient information on productivity and connectivity on which to base listing decisions.

Response: Coral reproduction and connectivity are addressed generally in the Reproductive Life History of Reef-building Corals section. As each proposed coral species has a different reproductive life history, we more comprehensively address each species' reproduction, connectivity, and recruitment (when that information was available) as they relate to each species' status under the ESA in the Species-specific Information and Determinations section. The public comments did not provide any studies or information on reproduction or connectivity for any species except for *Acropora cervicornis* (see Species-specific Information and Determinations section). Any supplemental information we found is included in Species-specific Information and Determinations section.

Comments on Distribution and Abundance of Reef Building Corals

Comment 5: We received several comments regarding the distribution and abundance of reef-building corals, mainly regarding the lack of species-specific information for many species' geographic distributions and population abundances. There were only a few comments related to determining the distribution and abundance of reef building corals, specifically on extrapolating individual corals to overall population abundance and distribution, on which to base a listing decision. One comment stated that coral population size and structure across the world's oceans is nearly impossible to determine with any accuracy because we use crude substitutes for individual animals in determining population and range information within a species. For example, there is a significant difference between using colony population and range estimates versus using polyp population and range estimates, which are essentially impossible to estimate. Another comment stated that it is not accurate to equate percent coral cover on reefs to population abundance (*i.e.,* numbers of individuals). Any loss of coral cover often is manifest by loss of coral tissue over large portions of still living colonies, without the loss of the individual. Furthermore, it is unclear whether the loss of many separate but genetically-identical colonies ('clones') equates to the loss of a single but genetically-distinct individual if some of the clone colonies survive. Another commenter noted that the distributions of the Indo-Pacific species are largely unknown due to their incredibly vast ranges encompassing numerous

archipelagos that include thousands of islands and atolls. The commenter emphasized this point by noting that there are between 30,000 and 40,000 islands in Oceania which could potentially have populations of the proposed coral species. The comments described above collectively assert that listing decisions cannot be made due to the lack of species-specific information.

Response: We acknowledge that it is difficult to quantify and qualify distribution and abundance for individual coral species. The ambiguity associated with the delineation of the individual in reef-building corals is addressed in the Individual Delineation sub-section in the Corals and Coral Reefs section, including how we characterize the delineation of the individual for the species covered by this final rule. In response to public comments, we more adequately address each species' distribution and abundance as those characteristics relate to each species' determination status under the ESA in the Species-specific Information and Determinations section. The public comments provided some useful information on the distribution and abundance of specific coral species, and we also collected supplemental information on distribution and abundance that is included in the Species-specific Information and Determinations section.

Comments on Coral Reefs, Other Coral Habitats, and Overview of Candidate Coral Environments

Comment 6: Some comments asserted that the proposed rule focused too much on coral reefs rather than focusing on coral species. A couple of comments stated that corals thrive in places that are not coral reefs, even when nearby coral reefs are not thriving, underscoring the notion that reefs are not species. Another couple of comments stated that the focus on coral reefs and reef ecosystems, and the importance they have to reef-associated species, is improper for ESA listing analysis and added that NMFS cannot simply decide to treat reefs as a species under the ESA simply because evaluating reefs is easier.

Response: The proposed rule acknowledged that reef-building coral species are not reef-dependent and provided a description of non-reefal habitats. Public comments did not provide information on how to interpret non-reefal habitat in our analysis, but in the Coral Habitats sub-section of this final rule we clarify the relevance of non-reefal habitats in determining each species' status under the ESA (*e.g.*, providing variability in environmental conditions).

Further, in the Coral and Coral Reefs section (Individual Delineation and Species Identification sub-sections), we explain that we define a coral species as the ''physiological colony'' (*i.e.,* unit of the species that can be identified as an individual in the field) to ensure that we are evaluating the individual species and not coral reefs generally for determining ESA status. Public comments did not offer any information on how to define a coral species, but our explanations in the Individual Delineation and Species Identification sub-sections makes clear that we do not consider coral reefs as species in this final rule. However, it should be noted that defining an individual coral as the physiological colony in this final rule did not change how we interpreted abundance data for any species.

Comment 7: A few comments stated that the proposed rule lacked species-specific information for mesophotic habitats (deep, lower-light areas, usually between 30 and 100 m deep). One comment stated that the coral communities of many Indo-Pacific jurisdictions have received little attention, with vast areas of reef remaining unexplored, especially for corals occurring in the mesophotic zone, which likely harbors populations of species that can also be found at shallower depths. Another comment stated that recent data from NOAA-supported studies of mesophotic reefs found these extensive and poorly studied ecosystems serve as refugia for numerous shallow water coral species, yet no survey data from these ongoing studies were included in the proposed rule. We also received two papers (Bridge and Guinotte, 2013; Kahng *et al.,* 2014) that suggested the global diversity of some mesophotic corals may be underestimated and the biogeographic ranges of mesophotic corals are not fully explored.

Response: The proposed rule briefly described mesophotic habitats and acknowledged that the amount of mesophotic habitat available is unknown and likely greater than the amount of shallow reef habitat. The proposed rule also stated there is greater coral cover on mesophotic reefs in the Indo-Pacific than in the Caribbean. However, more information has become available on this habitat type since publication of the proposed rule. Two papers (Bridge and Guinotte, 2013; Kahng *et al.,* 2014) provided more information on the global diversity and biogeographic ranges of mesophotic corals and we have collected information on the magnitude and diversity of mesophotic habitat. The extent of mesophotic habitat is addressed in the Coral Habitats sub-section. Mesophotic habitat's potential function as refugia for corals from ocean warming is addressed in the Spatial and Temporal Refugia sub-section. Where mesophotic habitat information is available for an individual coral species we have included and considered that information in the Species-specific Information and Determinations section.

Comment 8: With regard to coral habitats being divided into only two global regions (*i.e.,* Caribbean and Indo-Pacific), a couple of comments stated that the Indo-Pacific region was too coarse. Specifically, the comments stated that the Hawaiian Islands should be considered its own region or sub-region with Hawaiian species evaluated separately, due to Hawaii's isolated nature and significant number of endemic species.

Response: We recognize that there may be numerous distinct sub-regions throughout the Caribbean and Indo-Pacific basins for some or all species, and that some coral species are endemic to Hawaii. However, under the ESA, we must evaluate the status of the species throughout their entire ranges. Invertebrate species, such as corals, cannot be divided further into Distinct Populations Segments (DPS) under the ESA, since DPS specifically refer only to vertebrate species. Therefore, we cannot identify sub-regions, such as Hawaii, as its own distinct geographic range and evaluate the status of more broadly distributed species only within that specific area. In addition, as described in the Risk Analyses—Statutory Standard sub-section of this final rule, we were not able to identify a significant portion of its range (SPOIR) for any of the proposed corals and therefore could not evaluate whether the status of the species within that portion of its range impacts the overall status of the species throughout its range.

Comment 9: We received a few comments regarding the consideration and inclusion of Traditional Ecological Knowledge (TEK), particularly from local island cultures (Hawaiian, Chamorro, and Samoan), as best available information for our listing determination process. One comment noted the importance of corals and coral reefs to island cultures in the Pacific Islands region, in particular to native Hawaiians. The comment criticized the lack of TEK in the SRR and proposed rule for the candidate corals, stating that coral biology and ecology is a fundamental part of TEK, and that their TEK is part of best available science.

Response: We agree that TEK provides an important and unique perspective on local ecosystems, their status, threats, and changes over time; when relevant information was made available to us, we incorporated it into the proposed rule. We also acknowledge that this information is not necessarily accessible in academic peer reviewed journals or text books. Therefore, we requested any additional TEK-related information on the biology, ecology, threats, and extinction risks of the 65 coral species on numerous occasions for inclusion within this final rule. While we received public comments and listened to several public testimonies from community members in both the Pacific Islands and Southeast regions that disagreed with our proposed listing determinations, we did not receive any TEK-related information or data on the biology, ecology, threats, or extinction risks for any of the 65 coral species within this final rule.

Comments on Threats Evaluation

Comment 10: We received a large number of public comments on the various threats to corals and coral reefs. In addition to the specific comments on the nine most important threats, one comment stated that there should be no doubt that corals and coral reefs throughout the world are in serious trouble and in decline due to the effects of anthropogenic stressors. Another commenter asked whether the mere threats from anthropogenic impacts are sufficient for ESA listing. Yet another commenter requested that recreational boating activities should be recognized as a specific threat, even though recreational boating activities may only present a relatively minor risk to coral species.

Response: As described in the proposed rule, there are nine threats considered to be the most significant to the current or expected future extinction risk of reef-building corals. The comments and responses on these nine threats (ocean warming, disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade) are addressed individually below. We acknowledged that recreational boating activities may present some risk to coral species and it was included in the description of the threat ''Human-induced Physical Damage'' in the SRR. However, we determined that threat's contribution to the extinction risk of corals, generally, is negligible to low.

We also recognized that anthropogenic threats are affecting coral species worldwide and may be sufficient for an ESA listing if the species meets the definition of threatened or endangered. That is, if the species is currently in danger of extinction or may become so in the foreseeable future due to any one or a combination of the five factors under Section 4 of the ESA (in which the various threats are categorized) then the species may be listed.

Comments on Global Climate Change—General Overview

Comment 11: We received many comments on the general treatment of global climate change in the proposed rule and supporting documents. The Global Climate Change—General Overview section in the proposed rule and the global climate change portion of the SRR describe past, current, and future GHG emissions and atmospheric concentrations and the associated past, current, and future general effects on coral reef ecosystems, based primarily on the International Panel on Climate Change's (IPCC) Fourth Assessment Report (AR4), The Physical Basis (IPCC, 2007) and supporting literature.

Some comments stated that we did not adequately account for the uncertainty in climate change modeling. A few comments stated that global temperature has been stable for the last ten years or that warming has slowed down since 2000. One commenter provided two recent papers (Guemas *et al.,* 2013; Hansen *et al.,* 2012) that showed global mean surface temperatures did not increase as much as had been predicted from 2000 to 2010.

Some comments stated that GHG emissions and global temperatures continue to rise unabated. One comment referenced two studies (Frieler *et al.,* 2012; van Hooidonk *et al.,* 2013b) that projected the frequency of coral reef bleaching under different levels of warming and emissions scenarios, indicating that significant and immediate GHG reductions are critical to prevent coral reefs from degradation and collapse. Another comment also referenced van Hooidonk *et al.* (2013b) and stated that targets for atmospheric carbon dioxide (CO_2) concentrations must be lower than 450 parts per million (ppm) to protect coral reef ecosystems. Yet another comment stated that scientific modeling indicates that within 40 to 50 years, reef decline will pass a tipping point, largely due to the increasing impacts of climate change, and may not be reversible over ecological time scales. Another comment pointed out that climate change also could likely increase corals' exposure to cold water stress, which studies have shown can cause extensive mortality of corals (Colella *et al.,* 2012; Schopmeyer *et al.,* 2012).

Response: We agree with commenters and acknowledge that there is uncertainty associated with climate change projections. Climate change projections over the foreseeable future are associated with three major sources of uncertainty: (1) The projected rate of increase for GHG concentrations; (2) strength of the climate's response to GHG concentrations; and (3) large natural variations. The recent warming slow-down is an example of a large natural variation that was not anticipated by previous models. However, AR4's projections were built upon scientifically accepted principles, which fairly simulated many large scale aspects of present-day conditions, providing the best available information on climate change at the time the proposed rule was published. The IPCC's Fifth Assessment Report (AR5), Climate Change 2013: The Physical Science Basis (IPCC, 2013), commonly referred to as the Working Group I Report (WGI) became available in September 2013, and supersedes AR4; accordingly, this final rule relies on the information provided in AR5's WGI. Despite the advance of climate change science in recent years, there is still complexity and uncertainty associated with projections of global climate change. However, the current state of climate change science is capable of producing informative projections that provide a rational basis for considering likely patterns in future climate change-related threats to reef-building corals. More detail on the overall complexity associated with projections of global climate change, major sources of uncertainty in climate change projections, and a summary of AR5's WGI, including the pathway that we consider the most impactful to corals, are addressed in Threats Evaluation—Global Climate Change Overview sub-section.

We also acknowledge the observed recent hiatus/slow-down in the rate of global surface air temperature increase, and we have accordingly provided a description of the hiatus/slowdown and its implications in the Threats Evaluation—Ocean Warming sub-section. In summary, despite unprecedented levels of GHG emissions in recent years, a slow-down in global mean surface air temperature warming has occurred since 1998, which AR5's WGI refers to as a ''hiatus.'' Despite this slowdown in warming, the period since 1998 is the warmest recorded and ''Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since

1850.'' The slow-down in global mean surface warming since 1998 is not fully explained by AR4 or AR5 WGI's models, but is consistent with the substantial decadal and interannual variability seen in the instrumental record and may result, in part, from the selection of beginning and end dates for such analyses.

Public comments provided supplemental information on several aspects of global climate change, as described above. We also collected information to inform how we assess the effects of global climate change to corals, including the IPCC Working Group II report on impacts, adaptation, and vulnerability. We maintain that global climate change is central to assessing extinction risk for the corals in this final rule. As described in more detail in the Threats Evaluation—Global Climate Change Overview sub-section below, the supplemental information underscores the complexity and uncertainty associated with projecting the extent and severity of effects of global climate change across the ranges of reef-building corals.

Comments on Ocean Warming (High Importance Threat, ESA Factor E)

Comment 12: We received several comments on general future projections of ocean warming levels. One commenter stated that climate change models applied in our assessment are too coarse to accurately predict the conditions reefs will experience in the future and that real conditions are impacted by bathymetry, water mixing, wind patterns, fresh water inputs, and other bio-geographic factors. The commenter concluded that existing projections for sea surface temperature are not sufficient to conclude the species face an existential threat. Other comments also criticized the use of AR4's worst-case scenario as the basis for determining the most likely future scenario with regard to ocean warming, and related topics such as the proposed rule's lack of consideration for the post-1998 hiatus in global warming.

Response: In the proposed rule, we discussed the numerous, complex spatial and temporal factors that compound uncertainty associated with projecting effects of ocean warming on corals in the future, and we have determined that ocean warming will not affect all species in all locations uniformly over the foreseeable future. We believe that different bio-geographic factors such as bathymetry, water mixing, wind patterns, and fresh water will likely impact conditions corals will experience over the foreseeable future. We also recognized that global climate change models are associated with uncertainty, as discussed in response to comment 11 above. However, in response to comments on ocean warming projections, such as criticism of the reliance of the proposed rule and supporting documents on AR4 (IPCC, 2007) and the lack of consideration of the ocean warming hiatus, we provide a review of the best available information on these topics, including AR5's WGI Report (IPCC, 2013), in the Threats Evaluation—Global Climate Change Overview, Representative Concentration Pathways (RCP) 8.5 Projections, and Ocean Warming sub-sections below. These data support the conclusion in the proposed rule that ocean warming is increasing in severity, and is likely to continue increasing in severity within the ranges of reef-building corals. However, a key difference between the proposed and final rule is that we now more fully consider the ability of each species' spatial and demographic traits to moderate exposure to threats, including warming, and place appropriate emphasis on the non-uniform nature of global threats at the regional and local levels that allows habitat heterogeneity to play a role in buffering a species against vulnerability to extinction. The significance of coral abundance and distribution, and habitat heterogeneity, to this final rule is described in more detail in the Corals and Coral Reefs, Risk Analyses and Species-specific Information and Determinations sections of this rule.

After reviewing the public comments and information provided in AR5's WGI our conclusion regarding the threat of ocean warming remains unchanged from the proposed rule. We maintain that ocean warming is a high importance threat in assessing global extinction risk for the corals in this final rule, while we also acknowledge that the interpretation of future climate change threats to corals is associated with complexity and uncertainty, and that effects on individual species of reef-building corals are difficult to determine as described in more detail in the Threats Evaluation—Global Climate Change Overview subsection below.

Comment 13: Many comments criticized the proposed rule for not accounting for spatial variability in ocean warming and overlooking regional and local variability in conditions leading to warming-induced bleaching, which may be more or less severe regionally or locally than the overall warming. For example, we received two comments requesting us to review the literature for information regarding current and projected regional differences in sea surface temperature anomalies and for variations in the responses of individual coral species across their ranges. Comments noted that coral species and their symbionts are not uniformly susceptible and/or resilient to climate change across their ranges. That variability results in heterogeneous responses of coral species to ocean warming both in different parts of the ranges and also at different rates in the future. Another comment provided information from van Hooidonk (2013b) regarding spatial and temporal variability of ocean warming within different regions. The commenter identified reef locations that appear to be less vulnerable to bleaching, including the southern Great Barrier Reef (GBR), the western Indian Ocean, Persian Gulf, Red Sea, Thailand, New Caledonia and French Polynesia, as well as other locations that appear to be more vulnerable to bleaching, including the western Pacific warm pool, northwestern Australia, west Papua New Guinea and the central Pacific islands of Tokelau. Another commenter stated that the corals at Flower Garden Banks National Marine Sanctuary seem to be less affected by elevated sea surface temperatures that are impacting corals in other parts of the wider Caribbean.

Response: We discussed spatial (*i.e.,* regional and/or local) variability of ocean warming impacts to corals in the proposed rule and we agree that ocean warming will not affect all species in all locations uniformly over the foreseeable future, and that different regions are predicted to experience the effects of ocean warming on different time scales and at different magnitudes than others. We provide a review of all the best available information on spatial variability in ocean warming, including any information provided via public comment or gathered ourselves since the proposed rule was published, in the Threats Evaluation—Global Climate Change Overview, RCP8.5 Projections, and Ocean Warming sub-sections below. These data support the conclusion in the proposed rule that ocean warming is increasing in severity, and likely to continue increasing in severity within the ranges of reef-building corals. This review also underscores the complexity and uncertainty associated with spatial variability in ocean warming across the ranges of reef-building corals. A key difference between the proposed and final rule is that we now more fully consider the ability of each species' spatial and demographic traits to moderate exposure to threats, including warming, and place appropriate emphasis on the non-uniform nature of

global threats at the regional and local levels which allows habitat heterogeneity to play a role in buffering a species against vulnerability to extinction. The significance of coral abundance and distribution and habitat heterogeneity to this final rule is described in more detail in the Corals and Coral Reefs, Risk Analyses and Species-specific Information and Determinations sections of this rule.

Comment 14: Comments on the overview of ocean warming and coral reefs focused on projected effects of ocean warming on coral reef ecosystems, rather than on reef-building coral species. These comments comprise two distinct views. Some comments emphasized that coral reefs are likely to decline sharply in the future because of increasing GHG emissions, while other comments emphasized that recent reviews indicate a wide range of possible responses by coral species. For example, one commenter cited Frieler *et al.* (2012) and stated that the estimated frequency of coral bleaching at different levels of global warming showed that limiting warming to 1.5 °C above pre-industrial levels is unlikely to protect most of the world's reefs from degradation. The commenter further explained that even under the lowest of the IPCC AR5 emissions scenarios (RCP3–PD) and optimistic assumptions regarding thermal adaptation, approximately one-third (range from 9 to 60 percent) of the world's coral reefs will experience long-term degradation. Another commenter cited Donner (2009) and similarly stated that the projected increase in sea surface temperatures due to the physical commitment from the present accumulation of GHGs due to anthropogenic activity, as well as the amount of GHGs likely to be emitted, is sufficient to cause frequent and higher magnitude heat stress for the majority of the world's coral reefs by 2050. Another commenter provided information from Kiessling *et al.* (2004) and Carpenter *et al.* (2008) and asserted that if bleaching events become very frequent, many species may be unable to maintain breeding populations as repeated bleaching causes potentially irreversible declines, perhaps mimicking conditions that led to previous coral extinctions. In contrast, some commenters disagreed with our conclusion of the projected effects of ocean warming on corals and coral reef ecosystems in the proposed rule. As described above in Comment 13, many commenters pointed out several studies showing regional and local variability in responses of corals and coral reefs to ocean warming.

Response: We summarized the best available information on the interaction between ocean warming and corals reefs in the proposed rule, and concluded that ocean warming is a severe and increasing threat to corals. The public comments and supporting papers we received on the overview of ocean warming and coral reefs generally support the conclusion in the proposed rule that ocean warming is an important and increasing threat to coral reefs. However, the other comments underscore the uncertainty associated with projecting the effects of ocean warming on coral reefs in the future, and as described in our response to Comment 13, we also acknowledge that there is and will continue to be regional and local variability in responses of corals to ocean warming over the foreseeable future. We acknowledge that ocean warming will not act uniformly on all species at all times over the foreseeable future. Further, we recognize that the responses of each species to ocean warming will vary across their ranges over the foreseeable future. Additionally, as described in previous comment responses, a key difference between the proposed and final rule is that we now more fully consider the threat-buffering capacity of each species' unique characteristics, and place appropriate emphasis on the non-uniform nature of global threats at the regional and local levels which allows habitat heterogeneity to play a role in buffering a species against vulnerability to extinction.

Comment 15: We received comments on specific effects of ocean warming on reef-building corals that covered various topics, including the interactions of warming-induced bleaching with other threats. For example, one commenter noted that anthropogenic climate change (*e.g.,* ocean warming) weakens coral colonies and renders them more susceptible to disease, which is also covered in the Threats Evaluation—Disease sub-section below. Other commenters also emphasized the potential for ocean warming to act synergistically with other threats such as nutrification as well as overfishing. Another commenter provided information from Ferrier-Pagès *et al.* (2010) suggesting remarkable tolerance to global change, such as the potential to reduce bleaching vulnerability through increased feeding rates.

Response: In the proposed rule, we discussed how multiple threats stress corals simultaneously or sequentially, whether the effects are cumulative (the sum of individual stresses) or interactive (*e.g.,* synergistic or antagonistic). The comments and supporting papers we received on these topics provide supplemental information (such as synergistic effects of ocean warming with other threats), which has been incorporated and considered in our assessment, as described in more detail in the Threats Evaluation—Ocean Warming sub-section. The comments and supporting papers support the conclusion in the proposed rule that the impacts of ocean warming on reef-building corals are increasing in severity and likely to continue increasing in severity. This information also underscores the great complexity and high uncertainty associated with the various specific effects of ocean warming, including synergistic effects with other threats, across the ranges of reef-building corals. We continue to acknowledge that susceptibility of a species to a threat depends on the combination of: (1) Direct effects of the threat on the species; and (2) the cumulative and interactive (synergistic or antagonistic) effects of the threat with the effects of other threats on the species. In the proposed rule, we considered how the cumulative or interactive effects altered the rating assigned to a threat susceptibility in isolation. However, upon further consideration, we need to evaluate the extent to which one threat influences the susceptibility of an individual species to another threat with more species-specific information, in connection with all the other elements that influence a species' extinction risk. Generally, cumulative and interactive processes are complex and uncertain and existing information about threats interactions is only based on a few studies on a few species. Where possible, when we have species-specific or applicable genus-level information on cumulative or interactive effects, we have applied this information to that particular species' susceptibilities in a more integrated manner.

Comment 16: We received several comments on the capacity of reef-building corals for acclimatization and adaptation to ocean warming, covering various specific characteristics of reef-building corals that may contribute to such capacity. Mostly, commenters asserted that we did not adequately consider the ability of corals to acclimatize or adapt to changing temperatures. Several comments cited empirical evidence that corals have already adapted to ocean warming, thereby demonstrating the potential for acclimatization or adaptation. For example, one comment letter provided information from Pandolfi *et al.* (2011) and Cahill *et al.* (2013) stating that more recent analyses incorporating thermal

tolerance of species indicate a wide range of outcomes including maintenance of comparable levels of cover to 2100 and beyond. Another commenter provided data from Maynard *et al.* (2008) and Guest *et al.* (2012) showing that many types of coral show surprisingly large (~0.5–1 °C) increases in thermal tolerance after a single mass bleaching event, due to either adaptation or acclimatization. In another comment letter, information provided from Jones and Berkelmans (2010) and Baker *et al.* (2004) show that the acclimatization potential of corals to increased temperatures is an active area of research, with a focus on identifying heat-resistant phenotypes. Another commenter pointed to the coral species that occur in the Arabian Gulf as an example of species adapting to warmer temperatures.

Response: In the proposed rule we acknowledged that there is some evidence to suggest that reef-building corals may have various mechanisms for acclimatization and adaptation to ocean warming. These topics were described in the Ocean Warming sub-section of the proposed rule, and we concluded that existing scientific information was inconclusive on how these processes may affect individual corals' extinction risk, given the projected intensity and rate of ocean warming. The public comments and supporting papers have been incorporated and considered in our assessment, as described in more detail in the Threats Evaluation—Ocean Warming sub-section and the Species-specific Information and Determinations section. However, the supplemental information does not alter the conclusion in the proposed rule that the capacity for acclimatization and adaptation of reef-building corals to ocean warming is inconclusive for corals generally at this time.

Comments on Disease (High Importance Threat, ESA Factor C)

Comment 17: One comment regarding the decline of Caribbean coral populations cited land-use changes as well as disease outbreaks (among other local threats) as the causes of Caribbean coral decline rather than climate change. Some comments also provided such information pertaining to specific species. For example, one comment stated that the genetic diversity of *Acropora cervicornis* in Florida may be sufficient to maintain viability and resilience to environmental perturbations and disease.

Response: The proposed rule described how disease had a major role in the initial decline of Caribbean coral populations as described in the Coral Reefs, Other Coral Habitats, and Overview of Candidate Coral Environments sections of the proposed rule. Further, in the Threats Evaluation—Disease section of this rule, we acknowledge diseases are of high importance with regard to extinction risk of corals. However, in assessing extinction risk over the foreseeable future, climate change-related threats are highly important to all reef-building corals. Any species-specific information provided on disease is included in the Species-specific Information and Determinations section later in this rule.

Comment 18: One commenter noted the explicit link between coral bleaching, disease, and the larger driving environmental factor of climate change by citing several studies that show anthropogenic climate change weakens coral colonies and renders them more susceptible to disease (Harvell *et al.,* 1999; Harvell *et al.,* 2002; Knowlton, 2001). Another commenter provided information from Muller and van Woesik (2012), stating that exceeding environmental disease thresholds will most likely become increasingly common in rapidly warming oceans, leading to more frequent coral-disease outbreaks. The study suggested that that the expression of some coral diseases occurs when (1) environmental thresholds are exceeded and (2) these environmental conditions either weaken the corals, which are then more susceptible to infection, or increase the virulence or abundance of pathogens. In other words, corals that experience bleaching are more likely to suffer from disease outbreaks and subsequent mortality.

Response: In the proposed rule, we described the importance of disease as a threat to corals and the potential for disease to act synergistically with other threats such as ocean warming. We also understand that assessing the threat of disease is highly complex, as the cause or causes of many coral diseases remains either unknown or poorly understood. Overall, the public comments we received underscored and supported the analysis in the SRR and the proposed rule. In addition to public comments, we collected a significant amount of information on disease that became available since the proposed rule published. Thus, we maintain that disease is a high importance threat to the extinction risks of the 65 corals in this final rule. All of the supplemental information received or otherwise collected has been detailed and summarized in the Threats Evaluation—Disease sub-section of this final rule. The extent to which the extinction risk of a particular coral species is impacted by disease is discussed in more detail in the Species-specific Information and Determinations section below.

Comments on Ocean Acidification (Medium-High Importance Threat, ESA Factor E)

Comment 19: We received public comments on the description of and future projections of ocean acidification, which provided information on the complexity of ocean chemistry on corals, and criticism of the use of the AR4's worst-case scenario as the basis for determining the most likely future scenario with regard to ocean acidification. For example, one commenter asserted that global projections of ocean acidification are too coarse and do not take into consideration competing and extremely localized factors that affect local CO_2 concentrations (*e.g.,* local atmospheric processes, local biological processes, local temperature, and upwelling from deeper waters). The commenter emphasized that despite acknowledging the multitude of local, regional, and seasonal factors that may cause local CO_2 concentrations to increase and pH to decrease, we opted instead to base our reef-scale threat analysis on generalized acidification predictions from global models. Other commenters also criticized our reliance on the IPCC's AR4 report as the basis for our threat evaluation of ocean acidification to corals.

Response: In the proposed rule we acknowledged that numerous, complex spatial and temporal factors compound uncertainty associated with projecting effects of ocean acidification on corals in the future. We also acknowledged that global climate change models are associated with uncertainty. We further acknowledge that the interpretation of future climate change threats to corals is complex and that effects on individual species of reef-building corals are difficult to determine, as described in more detail in the Threats Evaluation—Global Climate Change Overview subsection. However, we agree with commenters that ocean acidification will not affect all species in all locations uniformly over the foreseeable future, and that different locations will experience the effects of ocean acidification at different time scales and at different magnitudes than others. We provide a review of all the best available information, including a review of AR5's WGI (IPCC, 2013) in the Threats Evaluation—Global Climate Change Overview, RCP8.5 Projections, and Ocean Acidification sub-sections. Upon review of the information provided in AR5's WGI and public comments, our

conclusion regarding the threat of ocean acidification remains unchanged from the proposed rule. We maintain that ocean acidification is increasing in severity, and is likely to continue increasing in severity, within the ranges of reef-building corals, and is a medium-high importance threat in assessing extinction risk for the 65 corals in this final rule. However, as described in earlier comment responses, a key difference between the proposed and final rule is that we now more fully consider the ability of each species' spatial and demographic traits to moderate the impacts of threats, and we place appropriate emphasis on the non-uniform nature of global threats at the regional and local levels which allows habitat heterogeneity to play a role in buffering a species against vulnerability to extinction.

Comment 20: We received a comment regarding variability in ocean acidification on coral reefs related to fluctuations in pH from localized factors such as seagrass beds. The commenter provided information from Manzello *et al.* (2012) indicating that local and regional biochemical processes buffer effects of ocean acidification in locations such as the Gulf of Mexico and South Atlantic. Manzello *et al.* (2012) reported that the photosynthetic uptake and sequestering of carbon dioxide by seagrasses and other macroalgae and the positive growth response by seagrasses to increasing dissolved carbon dioxide (Palacios and Zimmerman, 2007) may create ocean acidification refugia for corals. Comments on specific effects of ocean acidification on coral reefs and reef-building corals focused on capacity for acclimatization of corals to acidification, and evidence that some coral species are resistant to low pH.

Response: In the proposed rule, we discussed that numerous, complex spatial and temporal factors compound uncertainty associated with projecting effects of ocean acidification on corals and coral reefs in the future, and we agree with the comment that ocean acidification will not affect all species in all locations uniformly over the foreseeable future, and that different locations will experience the effects of ocean acidification at different time scales and at different magnitudes than others. In response to comments on spatial variability of ocean acidification, such as lack of consideration of localized increase in pH from adjacent seagrass beds, we provide a review of the best available information on spatial variability in ocean acidification, including any information provided by public comments as well as any information we gathered ourselves since the proposed rule was published, in the Threats Evaluation—RCP8.5 Projections and Ocean Acidification sub-sections. These data in our view still support the conclusion in the proposed rule that ocean acidification is increasing in severity, and likely to continue increasing in severity within the ranges of reef-building corals; however, as described in earlier comment responses, a key difference between the proposed and final rule is that we now more fully consider the threat moderation capacity of each species' spatial and demographic traits, and of habitat heterogeneity.

Comment 21: We received one comment that identified a couple of ocean acidification and coral reef calcification rate studies that were not included in the SRR and proposed rule. The commenter provided two studies: One showing that coral calcification increases with global warming (McNeil *et al.,* 2004), and another study showing that corals are already thriving in conditions similar to the ocean acidification conditions predicted by the IPCC for 2100 (Hofmann *et al.,* 2011).

Response: In the proposed rule and supporting documents we acknowledged that some exceptional areas exist where reef-building coral communities appear to be thriving under naturally high CO_2 concentrations. As described in the comment response above to Comment 19, we agree that ocean acidification will not act uniformly on all species in all locations over the foreseeable future. We provide a review of all the best information available on the threat of ocean acidification, including these studies, which we received in public comments, and any information we gathered ourselves in the Threats Evaluation—Ocean Acidification sub-section (*e.g.,* Shamberger *et al.,* in press). This supplemental information supports the proposed rule's conclusion that the threat of ocean acidification has already impacted corals and coral reefs and will become increasingly severe from now to 2100, with increasingly severe consequences for corals and coral reefs. However, as described in previous comment responses, a key difference between the proposed and final rule is that we now more fully consider the capacity of each species' spatial and demographic traits, and habitat heterogeneity, to buffer a species against vulnerability to extinction.

Comment 22: We received a detailed comment letter with supporting papers regarding specific effects of ocean acidification on reef-building corals, such as effects on reef accretion, effects on larvae and juvenile corals, and interactive or synergistic effects with other environmental variables. For example, the commenter pointed out several studies that underscore the potential impact of ocean acidification on reef calcification rates, noting that even under the most optimistic modeling scenario, 98 percent of reefs would be chemically stressed by 2050. The commenter also emphasized that corals may have a limited ability to adapt to ocean acidification based on an in-situ study of two corals in Florida Bay (Okazaki *et al.,* 2013).

Response: The comment letter and supporting papers support the conclusion in the proposed rule that ocean acidification is increasing in severity, and likely to continue increasing in severity, within the ranges of reef-building corals, resulting in various detrimental impacts. This information also underscores the complexity and uncertainty associated with the various specific effects of ocean acidification, including interactive or synergistic effects with other threats, across the ranges of reef-building corals as well as predicting adaptive capacity. The information provided by the commenter and the supporting papers regarding the specific effects of ocean acidification on corals and coral reefs have been incorporated and described in more detail in the Threats Evaluation—Ocean Acidification sub-section.

Comments on Trophic Effects of Fishing (Medium Importance Threat, ESA Factor A)

Comment 23: One comment provided supplemental information that was not included in the proposed rule regarding the role of herbivorous fish in terms of building and maintaining reef resilience. The commenter stated that ''overfishing also degrades coral reefs, particularly by depleting key functional groups, such as herbivores, that reduce turf algae on reefs and maintain optimal conditions for coral growth and recruitment'' and provided Keller *et al.* (2009) as a reference. Another commenter also described the importance of herbivorous functional groups, and stated that limiting or attempting to reduce harvest of predatory fish may cause ecological harm by unbalancing a healthy trophic chain.

Response: The proposed rule described the importance of trophic interactions which include reducing herbivorous fish species that control algal growth, limiting the size structure of fish populations, reducing species richness of herbivorous fish, and

releasing corallivores from predator control. The supplemental information provided by public comments supports our conclusion in the proposed rule that healthy levels of herbivorous functional groups are essential to coral reef ecosystem resilience in light of climate change-related threats. Detailed information regarding the trophic effects of fishing can be found in the Threats Evaluation—Trophic Effects of Fishing sub-section as well as the Inadequacy of Existing Regulatory Mechanisms—Reef Resilience sub-section.

Comment 24: One commenter stated that fish landings have been stable for 30 years in St. Thomas, U.S. Virgin Islands, with many species increasing in size, indicating that overfishing is not occurring in this location or contributing to the status of the Caribbean species in that area. The commenter also pointed out numerous sources of sediments and nutrients, and coastal development projects in the U.S. Virgin Islands as the main contributors to coral reef decline rather than overfishing. Other commenters also disagreed that overfishing was contributing to coral reef decline in Hawaii and highlighted significant increases in tourism and in-water recreational activities as local drivers of reef decline in that area.

Response: Although not explicitly stated in the proposed rule, we agree that levels of fishing effort vary throughout the ranges of the 65 corals under consideration. We did acknowledge that exposure to this threat varies throughout the ranges of the proposed species and between the Caribbean and Indo-Pacific. In the proposed rule, we also recognized that management and regulation of commercial and recreational fisheries are inconsistent throughout the coral reef world. When evaluating the current and potential threat impacts from trophic effects of fishing, we are required to assess this threat throughout the entire ranges of the 65 coral species in this final listing. We understand that levels and impacts of overfishing differ depending on the particular location under evaluation; however, we maintain that the trophic effects of fishing represent a medium importance threat to the extinction risk of all 65 coral species in this final rule.

Comment 25: One commenter stated that we failed to consider human demography in terms of our analysis of fishing impacts to corals. The commenter noted that large swaths of area throughout Oceania are being depopulated in favor of more metropolitan countries, which reduces the level of human impacts to corals, including fishing pressure.

Response: The issues of human demography and population trends were covered explicitly in the SRR and considered in the proposed rule. While there may be some areas being depopulated, increased human population and consumption of natural resources are root causes for increases in fishing (particularly of herbivores) at many locations around the globe (Brainard *et al.,* 2011). Data from the World Bank show human population abundance and density have increased in all five coral reef regions since 1960 (*i.e.,* Indian Ocean, Caribbean, Southeast Asia, Pacific, and Middle East), with the greatest human population densities and increases in population density in the Southeast Asia and Indian Ocean regions. In these regions, current human population densities are 4–5 times greater than the global average and probably suggest the greatest local human-induced effects to corals and coral reefs. In the areas in closest proximity to coral reefs, the Southeast Asian, Indian Ocean and Middle East regions have the highest densities of people per reef area (Burke *et al.,* 2011). However, these data are regional averages. We do not dispute that human demography within any of these regions may be shifting to higher density in metropolitan areas, resulting in a decrease of human disturbance in some portions of these regions. The regional trend data suggest increasing risks to corals and coral reefs overall (Brainard *et al.,* 2011). However, because we must consider the extent to which a particular threat impacts each species throughout its entire range, we still maintain that overfishing is a medium importance threat to all 65 coral species in this final rule.

Comments on Sedimentation (Low-Medium Importance Threat, ESA Factors A and E)

Comment 26: We received some public comments on sedimentation as a threat to the 65 coral species in this final rule. Comments generally underscored the importance of sedimentation as a considerable local threat to corals and pointed out the potential of sedimentation to interact and potentially exacerbate other threats, as well as to reduce coral resilience. For example, we received a detailed comment asserting that prospects for recovery of certain reef sites in the Caribbean from acute episodes of hurricane damage or die-offs from bleaching and disease (brought on by ocean warming) are extremely poor without sustained recruitment, which may be prevented by sediment preempting larval attachment. Further, the commenter identified sedimentation (among other local threats) as a local threat with the capability of exacerbating bleaching and disease impacts, thereby reducing the resilience of corals. One commenter pointed out that mass mortality of *Acropora palmata* at Vega Baja, Puerto Rico, was caused in part by sedimentation. Another commenter stated that near shore marine-origin sediments have almost completely been replaced by terrestrial sediments due to a lack of land use controls, resulting in near total mortality of nearshore *Acropora* stands in the U.S. Virgin Islands. Other commenters identified the negative impacts of sedimentation to reefs on the Hawaiian Island of Molokai, emphasizing the issue of run-off from large rain events in certain areas. In general, these comments emphasize the importance of sedimentation as a threat to the 65 coral species in this final rule, with some asserting that this threat is as important, if not more important, than the higher rated threat of reef fishing.

Response: We acknowledge all of the public comments and information we received on the threat of sedimentation to the 65 coral species in this final rule. As summarized in the proposed rule, we also recognize the possibility for sedimentation to interact with other global and local threats and potentially reduce the resiliency of coral reef ecosystems and/or impede recovery. In addition to public comments, we also collected supplemental scientific information regarding the impacts of sedimentation to corals that became available after the proposed rule was published. The findings from these studies and more detailed information regarding the evaluation of sedimentation as a threat to coral reefs can be found in the Threats Evaluation—Sedimentation sub-section. We also acknowledge the concern that some comments expressed regarding the importance of this threat in comparison to other local threats. However, for corals in general, we maintain that sedimentation is a low-medium threat to the extinction risk of the 65 corals in this final rule. Any species-specific information we received on sedimentation is included in the Species-specific Information and Determinations section.

Comments on Nutrients (Low-Medium Importance Threat, ESA Factors A and E)

Comment 27: We received limited public comments on nutrient enrichment of nearshore waters (*i.e.,*

eutrophication) and its impacts to coral reef ecosystems. Comments generally underscored the importance of nutrient enrichment as a considerable local threat to corals, and emphasized the potential of nutrient enrichment to interact and potentially exacerbate other threats, as well as reduce coral reef resiliency. For example, we received a detailed comment letter that provided studies regarding the impacts of nutrient enrichment to coral species. These studies, which became available after the proposed rule was published, provide evidence that nutrient enrichment can worsen thermal stress on inshore reef communities, and that management actions to reduce coastal nutrient enrichment can improve the resistance and resilience of vulnerable coastal coral reefs to ocean warming. Another comment detailed some of the impacts of nutrients in the U.S. Virgin Islands. For example, industrial effluent in St. Croix allegedly impacted fisheries in the area to the point where fishermen struggle to sell their catch due to perceived contamination. Further, a sewage pumping station in another area impacted nursery grounds for spiny lobsters. We received other comments regarding the negative impacts of nutrient enrichment in various locations in Florida and Hawaii from sewage outfalls and other land-based sources of pollution. In general, comments emphasized the importance of nutrients as a threat to the 65 coral species in this final rule, some asserting that this threat is as important, if not more, than the higher rated threat of reef fishing.

Response: In the proposed rule we described the threat nutrient enrichment poses to corals. The public comments and supporting papers regarding the impacts of nutrients to coral reef ecosystems have been considered and incorporated into our assessment, as described in more detail in the Threats Evaluation—Nutrients sub-section. We also acknowledge the concern that some comments expressed regarding the importance of this threat in comparison to other local threats. However, for corals in general, we maintain that nutrient enrichment is a low-medium threat to the extinction risk of the 65 corals in this final rule. Any species-specific information we received on nutrient enrichment is included in the Species-specific Information and Determinations section.

Comments on Sea-Level Rise (Low-Medium Threat, ESA Factor A)

Comment 28: We received one public comment that cited the Consensus Statement on Climate Change and Coral Reefs (drafted by a working group of eminent scientists and endorsed by hundreds of scientists to address the topic of climate change impacts on coral reefs; ICRS, 2012) as a source of estimates of sea-level rise by the end of this century. However, the comment did not expound upon the potential ramifications of these estimates. We did not receive any other public comments or gather new or supplemental information on the threat of sea-level rise to the 65 corals in this final rule.

Response: Although we received only one public comment on this topic, we collected supplemental information regarding the threat of sea-level rise to corals as a result of the IPCC's AR5. These findings are summarized in the Threats Evaluation—Sea-Level Rise sub-section.

Comments on Predation (Low Threat, ESA Factor C)

Comment 29: We received very few comments regarding the threat of predation to the 65 corals in this final rule. The majority of comments we received regarding predation were specific to individual species in Guam. For example, we received a detailed comment letter that included suggested changes to individual species vulnerability ratings to predation, as a result of local crown-of-thorns seastar (*Acanthaster planci*) predation levels. One commenter cautioned us in terms of inferring predation vulnerabilities for certain species from genus-level information. Other comments identified predation as a threat to corals, but provided no further information or scientific references.

Response: We acknowledge all of the public comments and information we received on the threat of predation to the 65 coral species in this final rule. The extent to which the extinction risk of a coral species is impacted by predation is discussed in more detail in the Species-specific Information and Determinations section, including any information we received from specific locations. We also agree that inferring susceptibility to threats from genus-level information is not always appropriate. However, that particular comment referenced a species we deemed Not Warranted for listing under the ESA, and are no longer considering. In addition to public comments, we collected information regarding the variable effects predation has on certain coral species. These studies are detailed and summarized in the Threats Evaluation—Predation sub-section. Overall, we maintain that predation is a low level threat to the extinction risk of corals in general.

Comments on Collection and Trade (Low Threat, ESA Factor B)

Comment 30: We received hundreds of comments that strongly criticized our characterization of the trade industry as a whole, stating that our analysis failed to use current science and/or commercial information about the coral trade. Commenters also asserted that we did not adequately consider aquaculture and mariculture industries as a potential alternative to alleviate pressures from wild collection practices. For example, we received a detailed comment regarding the mariculture industry in Indonesia, stating that in the last five years, the coral trade communities of Indonesia have developed coral mariculture with long-term objectives of reducing the wild harvest of coral species for the live coral trade. Another comment letter provided information from recent papers by Rhyne *et al.* (2012) and Wood *et al.* (2012) that report declining trade in wild-harvested Pacific corals and remarkable growth in the production and trade in cultured corals from Pacific countries. Overall, many comments asserted that a shift from wild collected corals to cultured corals is occurring as a result of increasing aquaculture and mariculture operations both within the United States and major source countries such as Indonesia.

Response: We agree with commenters that the SRR and proposed rule did not adequately describe the full scope of the marine ornamental trade industry and the contribution of captive culture in terms of alleviating pressures from wild collection. We agree that some significant progress has been made in terms of shifting from wild collection of corals to trade of aquacultured and/or maricultured corals as a result of both U.S. domestic production and production of corals in major source countries such as Indonesia. In addition to public comments we also collected a large amount of supplemental information on coral collection and trade. Specifically, we collected information about (1) the physical and ecological impacts of wild collection of coral colonies and/or fragments from their natural habitats; and (2) captive culture (*i.e.*, mariculture and aquaculture) including information on operations and the role of home aquaria as it relates to trade. All of the public comments and supporting papers have been considered and incorporated into our assessment as described in more detail in the Threats Evaluation—Collection and Trade sub-section. However, this information does not change our determination that the threat

is of low importance to the extinction risk of corals, generally.

Comment 31: We also received numerous comments that strongly disagreed with our characterization and conclusion regarding the adequacy of regulatory mechanisms within the coral trade industry, particularly CITES and other laws in major source countries such as Indonesia. Many commenters assert that CITES and various regulations provide adequate restrictions and requirements for the ornamental trade of coral reef species, such that trade has much less of a negative impact on the extinction risk of the 65 coral species than was portrayed by the proposed rule and supporting documents. One commenter also described Indonesia's development of regulations for their mariculture industry that is helping to alleviate wild collection pressures.

Response: In the proposed rule we described that there are some protections afforded via CITES and various other national regulations in some countries where trade of coral reef species is prevalent. However, we agree that our evaluation of trade regulations was incomplete. There are numerous challenges in documenting trends in trade due to deficiencies of CITES import and export data, and the most recent information is conflicting. Some reports state that 98 percent of reef-building corals within the aquarium trade are still wild collected, with only two percent originating from maricultured sources (Thornhill, 2012). In contrast, another report shows that maricultured corals accounted for approximately 20 percent of the trade in 2010 (Wood *et al.*, 2012). Further, adequate tracking of wild and maricultured corals along the supply chain from ocean to aquarium is extremely difficult, yet necessary for determining the true dimensions and impacts of the industry (Cohen *et al.*, 2013). Additionally, the level of wild collection of reef-building corals may be underestimated due to an undocumented illegal trade and a significant amount of mortality along the supply chain from reef to aquarium (Thornhill, 2012). There are many other issues and discrepancies related to assessing the overall impacts of the trade and the adequacy of regulations like CITES; however, collection and trade was ultimately ranked as a low level threat to corals in general by the BRT and in the proposed rule. Further, no one species of coral was determined to be threatened or endangered solely due to the effects of the coral trade industry, and that is still true for the final determinations in this rule. Therefore, while we agree CITES provides some protections for corals in the trade industry, we maintain that the threat from collection and trade is low and does not dictate the listing status of any individual species. In addition to public comments, we collected some supplemental information on regulatory mechanisms for the global marine ornamental trade industry, including details regarding trade of both live and dead corals and other coral reef wildlife.

In light of the public comments and information we received regarding the ornamental trade industry, the Threat Evaluation—Collection and Trade sub-section discusses the trade and its impacts to corals in detail, including information regarding the physical and ecological impacts as a result of the collection process, advances in aquaculture and mariculture industries, as well as issues and trends in trade of both live and dead coral. Any species-specific information we received on collection and trade is included in the Species-specific Information and Determinations section.

Comments on Inadequacy of Existing Regulatory Mechanisms (ESA Factor D) and Conservation Efforts

Comment 32: We received several comments that critiqued our evaluation of local regulatory mechanisms and conservation efforts. Some comments asserted that we failed to adequately consider the beneficial effects of local management actions and conservation efforts with regard to building reef resilience in the face of climate change. For example, we received a comment letter that stated a broad consensus exists for management to increase marine ecosystem resilience to climate change by reducing local anthropogenic stressors and reduction of these stressors may boost the ability of species, communities, and ecosystems to tolerate climate-related stresses or recover after impacts have occurred. Another commenter emphasized the importance of local management for increasing coral reef resiliency, including management of land-use changes and water quality, as well as utilizing coral reef restoration techniques. Overall, these comments disagreed with our characterization regarding the effectiveness of local regulatory mechanisms and conservation efforts in the face of climate change related threats and urged us to consider the concept of reef resilience.

Response: We recognize that certain aspects of local management actions and conservation efforts need more explanation than was provided in the proposed rule and Management Report (NMFS, 2012b). This final rule provides that additional explanation, as summarized here. There is an emerging body of literature regarding the concept of reef resilience, defined as an ecosystem's capacity to absorb recurrent shocks or disturbances and adapt to change without compromising its ecological function or structural integrity (Hughes *et al.*, 2010; Obura, 2005). Recent evidence suggests that managing local scale disturbances for resilience will be crucial to maintaining complex, bio-diverse coral reef ecosystems given the predicted widespread impacts of climate change related threats (Anthony *et al.*, 2011).

Therefore, we recognize that effective local laws and regulations as well as conservation projects and programs may help reduce impacts to corals and coral reefs from threats on an ecosystem level, positively affecting the timeframe at which corals may become in danger of extinction by providing a protective temporal buffer (*i.e.*, resiliency) to individual coral species in the face of climate change related threats. Some evidence suggests that local management actions, particularly of fisheries (specifically, no-take marine reserves) and watersheds, can delay reef loss by at least a decade under ''business-as-usual'' rises in GHG emissions (Jackson *et al.*, 2014; Kennedy *et al.*, 2013; Marshall and Schuttenberg, 2006; Mumby and Steneck, 2011). However, many scientists strongly suggest that these local actions be combined with a low-carbon economy to prevent further degradation of reef structures and associated ecosystems (Kennedy *et al.*, 2013).

We cannot definitively say whether and to what degree the presence of regulations in a particular location is currently conferring resilience benefits for any particular species. Overall, we agree that local regulatory actions and conservation efforts to reduce threats are imperative for resiliency of coral reef ecosystems in the face of climate change. However, for purposes of evaluating the inadequacy of regulatory mechanisms as well as conservation efforts under the ESA, we are unable to definitively establish the current status and effectiveness of local regulation of impacts from local threats for any particular species in any given location, with the exception of local regulatory mechanisms for *Acropora palmata* and *A. cervicornis*, which were evaluated in detail in the 2005 status review for those species. Further, we maintain that global regulations to reduce impacts from climate change are inadequate at this time. For more detailed information

about our evaluation of how local regulatory mechanisms relate to building coral reef resilience, please refer to the Threats Evaluation—Inadequacy of Existing Regulatory Mechanisms sub-section. Likewise, for more detailed information about our evaluation of conservation efforts please refer to the Conservation Efforts sub-section.

Comment 33: We received some comments that disagreed with our characterization of local regulatory mechanisms in general, asserting that certain local laws are sufficient for protection of corals, thus rendering additional protection via the ESA unnecessary. For example, we heard from several commenters who believe there are adequate regulations to prohibit the damage of reef-building corals, such that additional protections from the ESA are redundant. We also received comments that disagreed with our characterization of conservation efforts. For example, we received a comment that disagreed with our conclusion regarding conservation efforts, asserting that coral conservation actions already have, and will continue to, contribute to coral species recovery. Examples of conservation efforts that were not included in the Final Management Report (FMR; NMFS, 2012b) include ongoing coral reef restoration projects, specifically in Florida and the wider-Caribbean, as well as aquaculture and mariculture efforts both internationally (*e.g.*, Indonesia) and within the United States to try to alleviate wild collection pressure on coral reef ecosystems. Comments urged us to take these efforts into consideration for evaluating the status of the 65 corals in this final rule.

Response: We recognize that certain locations have effective local laws, regulations, and programs that address local threats and provide for the protection and conservation of coral species. For example, it is illegal to collect or harvest reef-building coral species in all U.S. states, territories, and commonwealths. Some laws even prohibit harming any reef-building coral species through activities such as boat groundings and impose penalties and fines for doing so. However, we must evaluate whether regulatory mechanisms are inadequate for corals across their entire ranges rather than in any one specific location. Likewise, our analysis of conservation efforts must also include the entirety of the species' ranges, and it must consider whether those efforts will result in recovering the species to the point of ameliorating threats throughout the species' range to such a degree that a species should be listed as threatened rather than endangered or even not at all. Therefore, we cannot solely consider whether regulations or conservation efforts in the United States or any other particular location are sufficient for reducing threats to corals. The importance of global climate change-related threats to the extinction risk of these corals makes it even more problematic to limit our assessment of conservation efforts and the adequacy of regulatory mechanisms to individual countries. For these corals, we are required to consider the adequacy of regulatory mechanisms for reducing GHG emissions and curbing the rate of global climate change.

For this final rule, we assessed regulatory mechanisms and conservation efforts in a more species-specific approach. To better capture the full breadth of existing regulatory mechanisms, in addition to the individual country descriptions in the Final Management Report, we re-characterized and summarized the presence of existing regulatory mechanisms throughout all the countries in the range of each individual species. The Inadequacy of Threats Evaluation—Existing Regulatory Mechanisms sub-section provides more detailed information on that range-wide evaluation process, as well as the Species Descriptions for the results. For more detailed information about our evaluation of the inadequacy of local management actions, please refer to the Threats Evaluations—Inadequacy of Existing Regulatory Mechanisms sub-section. For more detailed information about our evaluation of conservation efforts, please refer to the Conservation Efforts sub-section of this rule.

Comment 34: Several comments identified potential errors, omissions, and/or inaccurate characterizations within the Final Management Report (NMFS, 2012b). For example, we received a comment letter pointing out several omissions and inaccuracies regarding Federal management responsibilities for an extensive area of lands and waters in the Pacific Ocean. Many other comments provided additional laws, regulations, or conservation efforts that were not described in the Final Management Report or identified previously during the public engagement period during the summer of 2012. For example, one commenter requested our inclusion of Guam Public law 24–87 that ensures Guam's marine preserves are protected from recreational/commercial activities that may prove detrimental to fragile ecosystems. Another commenter pointed out that we omitted information regarding certain National Wildlife Refuges and National Parks that include coral reefs. We also received a public comment letter requesting us to consider information regarding Indonesia's Coral Reef Rehabilitation and Management Program as a conservation effort.

Response: We acknowledge that the Final Management Report had some minor errors and omissions. However, it should be noted that the Final Management Report was not intended to be an exhaustive document; rather, it aimed to capture the breadth of existing regulatory mechanisms and conservation efforts that may reduce threat impacts to corals and coral reefs. Due to the immense number of regulatory mechanisms that exist throughout the entire ranges of the 65 coral species (*i.e.*, 84 countries), the Management Report was not intended to identify every individual law and regulation that may have an effect on corals or their threats in every country within the species' ranges. However, any additional laws and regulations that were brought to our attention through the public comments were noted and considered in the analysis of inadequacy of existing regulatory mechanisms presented in this final rule under the Threats Evaluation—Inadequacy of Existing Regulatory Mechanisms sub-section.

Comments on Risk Analyses

Comment 35: We received many comments regarding the composition of the BRT. Some comments disagreed with the selection of BRT members, asserting that because all seven members of the BRT were Federal employees, non-Federal coral biologists with expertise in the field within specific regions (*e.g.*, Hawaii) were overlooked, thus casting doubt on the qualifications of the BRT members and the results of the status review. One comment suggested that the BRT member votes should have been weighted to reflect their level of expertise in the different types of corals undergoing review. Another comment stated that it would not be possible for certain members of the BRT to act in a neutral or unbiased manner because they are strong proponents of establishing Marine Monuments, sanctuaries, and MPAs for the protection of coral reef systems throughout the U.S. Pacific Islands. Yet another comment stated there was no independent verification from experts who did not have a stake in the Federal ESA listing processes.

Response: According to agency guidance, members of the BRT should have expertise in the particular species'

biology, population dynamics or ecology, or other relevant disciplines (*e.g.*, ocean/environmental/climate processes, analytical techniques, population genetics, extinction risk, or pertinent threats). Additionally, NMFS must also consider team composition in light of the Federal Advisory Committee Act (FACA). Generally, any committee or group established for the purpose of providing consensus advice or recommendations to a Federal agency is subject to the procedural requirements of FACA. Biological Review Teams are subject to FACA because their assessments constitute group advice upon which NMFS may base its determinations as to whether to list species as endangered or threatened under the ESA. Based on the requirements of FACA, the team must therefore be composed of Federal officials and employees, and specific classes of state employees, unless specifically exempted. As such, the coral BRT was composed of seven Federal scientists from NMFS's Pacific Islands, Northwest, and Southeast Fisheries Science Centers and the U.S. Geological Survey and National Park Service. The members of the BRT are a diverse group of scientists with expertise in coral biology, coral ecology, coral taxonomy, physical oceanography, global climate change, and coral population dynamics. Additionally, the BRT consulted with numerous non-Federal scientists and subject matter experts during the status review, and had their work peer reviewed, to ensure the best available information was utilized in the SRR. These subject matter experts are detailed in the Acknowledgements of the SRR. Last, we provided extraordinary opportunities for non-Federal scientists to provide their expertise prior to the publication of the proposed rule, including two scientific workshops held in the summer of 2012. All information received was considered in the proposed rule.

Comment 36: We received numerous criticisms regarding the evaluation methods used by the BRT. Many comments criticized the Critical Risk Threshold voting method used by the BRT for developing extinction risk values for the 82 corals within the proposed rule. Some comments asserted that the voting process relied on subjective opinion rather than scientific facts, while other comments stated that the anonymous scoring system by the BRT could not truly be anonymous. Still, other comments pointed out critical errors or flaws in the BRT's methods. For example, one comment stated that ranking each coral species relative to the rankings of other coral species does not inform NMFS of the risk status of an individual coral species. Another comment stated the Critical Risk Threshold graphs have an inappropriate and misleading quantitative horizontal axis, which suggests higher threat levels than estimated by the BRT. A couple of comments questioned the assignment of levels of confidence in the outcomes of the BRT voting process given the lack of information on which those outcomes were based, noting there was not a high degree of certainty between the experts.

Response: The voting methods used by the BRT are consistent with previous agency listing determinations that utilized similar structured decision making techniques. This approach is typically used when quantitative modeling of extinction risk is not a viable option due to a lack of precise quantitative population data. The BRT's voting relied upon professional interpretation of the best available scientific information at the time, including qualitative assessments. This approach allowed the BRT to explicitly address various ranges of uncertainty within their voting. We also emphasize that the determinations in the proposed rule did not solely rely on information within the SRR and the voting outcomes of the BRT. As described previously in the proposed rule and throughout this final rule, numerous sources of information were considered and incorporated in the listing determination process, as described in explicit detail in the Risk Analyses and Species-specific Information and Determinations sections. Additionally, the ESA does not require quantitative precision when estimating extinction risk and determining whether a species warrants listing as threatened or endangered under the ESA. Rather, the decision must be reasonable and based solely on the best scientific and commercial information available at the time of the decision, even in light of considerable uncertainty.

Comment 37: We received several comments that criticized how the proposed rule and supporting documents inferred species' characteristics based on genus-level information (*i.e.*, the proposed rule assumed that information for other species in the genus applied to the proposed species in that genus). A few comments stated that the BRT only considered threats to the taxonomic class and therefore it conducted no individual species threat analysis for any of the candidate coral species. Most comments stated that genus-level info on response to threats, abundance, and other characteristics were improperly extrapolated to species because there are numerous examples in the literature in which ecological or physiological traits are not consistent across species within a genus.

Response: In the proposed rule, we relied on higher taxonomic level (*i.e.,* genus or family) information for threats susceptibilities when species-specific susceptibilities were not available. We acknowledge that there is intra-genus or intra-family variability in response to threats in many cases. In response to criticism of how the proposed rule and supporting documents inferred species' characteristics based on genus-level information, this final rule does not automatically assume that genus-level information for other species in the genus applies to the proposed species in that genus. Rather, a careful analysis of genus-level information is incorporated into the Species-specific Information and Determination sections below for each of the 21 genera in which the 65 species belong. That is, as a preface to the Species-specific Information and Determinations for species in a genus, this final rule includes a description of the available information for other species in the genus that are not part of this final rule, and an analysis of the degree of applicability of that information to the species included in this final rule. Further, in no case in this final rule do we extrapolate from family-level information.

Comment 38: We received multiple comments criticizing the definition of ''foreseeable future'' in the proposed rule and supporting documents out to the year 2100 because it is too far into the future. One comment stated that climate change projections beyond 50 years have a high degree of uncertainty and may be impacted by numerous unforeseen and unpredictable circumstances, and thus identifying the foreseeable future as out to the year 2100 is not appropriate. Another comment stated that our use of 2100 for the foreseeable future is contrary to previous decisions made by FWS and NMFS, and there have been no breakthroughs in climate modeling to justify our new position on the reliability of long-term climate modeling.

Response: Consistent with our practice for all species listing determinations, we established that the appropriate period of time corresponding to the foreseeable future is a function of the particular type of threats, the life-history characteristics, and the specific habitat requirements for the coral species under consideration.

The timeframe established for the foreseeable future considered the time necessary to provide for the conservation and recovery of each threatened species and the ecosystems upon which they depend. It was also a function of the reliability of available data regarding the identified threats and extends only as far as the data allow for making reasonable predictions about the species' response to those threats. In the proposed rule, we explained that our choice of the year 2100 as the ''foreseeable future'' for analysis of global climate change was based on AR4's use of 2100 as the end-point for most of its global climate change models. Similarly, most of AR5's WGI models also use 2100 as the end-point (some models go beyond 2100) and AR5's WGI reinforces our original rationale for defining the foreseeable future as the period of time from the present to the year 2100. For global climate change threats, there is strong support for considering the foreseeable future as the period from the present to 2100 in AR5's WGI and its cited literature (IPCC, 2013). However, we agree that the foreseeable future for purposes of other threats to the species and the species' responses thereto does not necessarily extend out to 2100. Therefore, in this final rule, we clarify that 2100 simply marks the outer temporal bounds for consideration of climate change-related threats, and does not frame our analysis across all threats or our ultimate listing determinations. Further discussion of the foreseeable future is presented in the Foreseeable Future subsections of the Threats Evaluation and Risk Analysis sections below.

Comment 39: There were many comments on the quantity and quality of information used to make listing decisions for the candidate coral species in the proposed rule. Several comments stated that the present biological data do not support the proposed listings. They stated that the available science was insufficient and not compelling enough to demonstrate the need to make a decision under the ESA. A few comments criticized the use of IUCN data as a surrogate for ''true scientific data'' on species distribution and abundance. Many comments stated that useful information was available, especially on coral trade and mariculture, but the BRT did not use it, which led to serious errors in the SRR. The study by Rhyne *et al.* (2012) was given as an example. Other comments stated that there was little data regarding individual species' population numbers and trends, so NMFS did not conduct the species-specific analyses required under the ESA. In general, the commenters indicated that the voting process by the BRT seemed very subjective, with the results coming from the individual scientists' perception of extinction rather than solid scientific data.

Response: The proposed rule and the SRR did conduct a species by species analysis of extinction risk for each of the candidate corals. However, in the proposed rule, the presentation of the information on which we based our determinations may have been unclear because of our use of the Determination Tool as an organizational mechanism to present the enormous amount of data. In response to criticism of the lack of sufficient species-specific information in the proposed rule and supporting documents on distribution, abundance, threat susceptibilities, and other information, this final rule clarifies and explains how the information relating to the taxonomic, field identification, distribution, abundance, life history, threat susceptibilities, and management information for each of the 65 coral species were evaluated in reaching the final listing determinations. The presentation of the information includes the information on which the proposed rule was based, information submitted by public comments, and information we gathered after the proposed rule published. The information was also analyzed in an integrated, non-formulaic framework instead of in a linear, formulaic framework as it was in the Determination Tool. The resulting information provides the basis for the 65 listing determinations in this final rule. In addition, while IUCN listings were used by the petitioner as one criterion for selecting coral species in the original 2009 petition, and IUCN maps were used in the 2011 SRR, no IUCN data or information is used in this final rule because it does not represent the current best available species-specific information. To explain more clearly the changes from the proposed to the final listings, we included an Overview of Methods and Key Changes Applied in Final Determination Framework sub-section within the Risk Analyses section to illustrate how all of the available information was considered for each species and how it contributed to each species' listing status. As a result, the 65 species-specific determinations below are based on the best available species-specific information and improves upon the proposed rule.

Comment 40: We received a couple of comments disagreeing with the characterization of the level of extinction risk inherent for a species due to its occurrence in the Caribbean. One comment stated that the BRT's determination that the entire Caribbean is sufficiently limited in geographic scale to be a factor that increases the extinction risk of all corals in the Caribbean is at odds with genetic data. The commenter provided references (Baums *et al.,* 2005b; Baums *et al.,* 2006a; Murdoch and Aronson, 1999; Vollmer and Palumbi, 2007) that show that, while it is clear that regional-scale processes such as bleaching and disease are acting on all these reefs simultaneously, no two reefs or areas respond the same to these disturbances. Another comment asserted that no threat to Caribbean *Acropora* is imminent, and therefore endangered listings are not supportable for these species.

Response: Geographic distribution is one of many factors we must evaluate to determine a species' status. We agree with commenters that an inherent increase in extinction risk solely due to occurrence in the Caribbean is not accurate; rather, the ratings in the Determination Tool regarding basin occupancy were an inadvertent function of comparing the Caribbean basin to the Indo-Pacific basin. That is, the automatic increase in extinction risk for species occurring in the smaller, more disturbed Caribbean was only relative in comparison to species occurring in the larger, less disturbed Indo-Pacific. In light of public comments, we determined that absolute range size in both the Caribbean and Indo-pacific was inadvertently under-estimated in the proposed rule. As a result, we now give consideration to geographic distribution in terms of absolute size rather than relative size in both the Caribbean and Indo-Pacific. We still maintain that the Caribbean is a highly disturbed basin that has experienced loss of resilience; however, the reconsideration of absolute distribution represents one piece of a more holistic approach to linking each species' characteristics to each species' status. The implications of occurrence in the Caribbean and more detailed descriptions of geographic ranges and how they may affect extinction risk are now provided in more detail for all species individually in the Risk Analyses and Species-specific Information and Determinations sections below.

We also explicitly incorporated consideration of regional and local variability in response to threats. We have also endeavored to provide a clearer discussion of how we assessed the vulnerability of each coral species, not just the Caribbean *Acropora,* to the major threats. The evolution of the

Determination Tool into a more comprehensive Determination Framework is described in the Risk Analyses section of this final rule below.

Comments on the Determination Tool

Comment 41: Commenters criticized that the Determination Tool equated species' characteristics to outcomes without adequate rationale. For example, one commenter stated that the Determination Tool suffers from a lack of transparency because we did not provide any information regarding how the rating values in the Determination Tool were assigned, who made the determinations, what their expertise was, or on what basis the decisions were made.

Several comments stated that the Determination Tool's decision points and resulting outcomes depended on species-specific information that was not available. For example, one commenter asserted that there is little to no experimental data provided in the proposed rule documentation to support the ratings used in the Determination Tool. Another commenter noted that there is almost no information on many of the species' abundances, geographic ranges, trends or recruitment rates, and that the ratings for these were based solely on qualitative opinion. Similarly, another commenter used ocean acidification as an example, stating that due to the large degree of uncertainty regarding the impacts of ocean acidification on coral species it is difficult to quantify the level of risk ocean acidification poses to the species. The commenter concluded by stating that assigning levels of ocean acidification-associated risk within the Determination Tool is a difficult proposition. Another commenter deemed the Determination Tool analysis and results arbitrary. The commenter stated that the analysis and results of the Determination Tool were based on the same faulty assumptions, extrapolations, assessments, and approximations of the seven BRT members and were based on very little, if any, species-specific spatial distribution or abundance data for a number of the proposed species.

Commenters claimed the Determination Tool was flawed and equated species' characteristics to listing outcomes too conservatively, especially for proposed endangered species. We received a detailed comment letter that outlined several criticisms of the Determination Tool and its four elements with regard to species outcomes. The Determination Tool was labeled faulty because it was deemed inherently biased towards listing. The commenter criticized that the first element in the Determination Tool was just a re-hash of the BRT's highly subjective ranking of threats and vulnerabilities. The commenter also asserted that nowhere in the four elements of the Determination Tool is there a discussion of imminence or a discussion of why we considered a species that meets any of the four factors to be ''on the brink'' of extinction. The commenter asserted that we not only failed to adhere to the legal standard of endangered, but we did so on extremely poor evidence. Further, the commenter criticized the results of the BRT voting as well as the Determination Tool for ranking each of the coral species' in a relative fashion, and as a result, asserted that our approach in determining extinction risk for each species was flawed.

Several comments pointed out additional perceived flaws in the Determination Tool. For example, one commenter stated that the Determination Tool dismissed the potential benefits of management efforts. Another commenter noted that the Determination Tool did not incorporate or consider projections of adaptation potential over the foreseeable future (*i.e.,* 2100). More specifically, the commenter asserted that the Determination Tool did not sufficiently consider the ability of corals to migrate (*i.e.,* undergo range expansion/shift) and adapt to changing conditions, especially when local stressors are well managed. One commenter also suggested that the Determination Tool conflicted with the SRR (*e.g.,* by giving too much weight to distribution when the range maps that the BRT relied upon were not precise). Similarly, commenters also criticized us for overemphasizing the importance of qualitative rankings for species' abundance (*e.g.,* common, uncommon, rare) in the Determination Tool, stating that a coral species' rarity does not necessarily correspond to its vulnerability to extinction.

Response: We acknowledge that several aspects of the process by which we produced our determinations in the proposed rule were not described or explained clearly enough. The Determination Tool in the proposed rule was a central aspect of a larger overall framework for making our decisions, as it organized and standardized our presentation of the risk factors, but we acknowledge that the larger determination framework was not sufficiently explained in the proposed rule. This lack of a clear explanation led to an overemphasis on and misunderstanding of the Determination Tool, which was one component of the determination framework. To better explain how the Determination Tool assessed risk and derived listing statuses we conclude that, as some public comments suggested, the Determination Tool was too linear and deterministic. We describe our final determination framework in greater detail in the Risk Analyses—Final Determination Framework sub-section below, and utilize a more holistic approach in considering all of the available information for each species. As described in that section, the non-formulaic approach used in this final rule, is more species-specific, and allowed us to address the concern that sufficient species-specific information was not available.

In summary, the Final Determination Framework in this final rule is composed of seven elements. The first element is describing the statutory standards for corals. The second, third, fourth, and fifth elements are identifying and analyzing all the appropriate species-specific and general characteristics that influence extinction risk for a coral species. The sixth element is relating a species' characteristics to a particular extinction risk at appropriate spatial and temporal scales. The seventh element is explicitly stating how each species' extinction risk meets the statutory listing definitions as applied to corals, resulting in an ultimate listing status. As a last consideration, we determine if any conservation efforts are abating the threats to the species such that it changes the individual species' listing status (*i.e.,* an endangered species' extinction risk is reduced such that it is threatened or that a threatened species is not warranted). This method of implementing our Final Determination Framework for every species individually is intended to be more transparent, by showing how complete use is made of available information to reach individual listing decisions.

We believe that there is still significant value in applying a standardized framework to each of the species to ensure consistency throughout the 65 individual determinations, but now do that in a narrative fashion in which there are no recipes or formulas for endangered, threatened, and not warranted species. This approach allows for the consideration of the system as a whole (*i.e.,* synergistically evaluating each species' demography, spatial characteristics, threat susceptibilities, and current and future environmental conditions independently of the other species), leading us to species-specific

conclusions about vulnerability to extinction.

In response to the criticism that the Determination Tool did not appropriately evaluate the imminence of danger of extinction in proposing to list corals as endangered, in this final rule we more fully explain the biological characteristics and distinctions between endangered and threatened corals, and corals not warranting listing under the ESA, and relate each species' particular characteristics to one of those classifications. These characteristics and the distinctions between them as they relate to the three ESA classifications are explained in the Statutory Standards sub-section of the Risk Analyses section.

Comments on Significant Portion of Its Range (SPOIR)

Comment 42: We received one comment regarding the identification of a significant portion of its range to support not warranted determinations for the proposed coral species found in Hawaii. The commenter asserted that the species of corals proposed for listing in Hawaii are abundant, relatively healthy, and relatively insulated from impacts of the primary identified threats. As a result, the species will presumably persist in Hawaii, despite more immediate threats in other portions of their ranges, ultimately preventing the species from going extinct. Thus, the commenter argues that a significant portion of its range should be identified for these species, rendering the species not warranted for listing.

Response: The commenter misunderstands the function of the SPOIR analysis. As discussed in the Statutory Standard sub-section below, a SPOIR analysis is performed to ensure that a species that has been found not to be endangered or threatened based on the range-wide analysis is still considered for listing if any portions of its range meet the criteria of the SPOIR Final Policy. Therefore, the function of a SPOIR is not to avoid a listing but to still consider a listing. In any case, as described in the Risk Analyses section below, the results of our analysis of SPOIR are unchanged from the proposed rule, after considering all comments and supplemental information. At this time, no SPOIR is determinable for any of the proposed species. Thus, our analysis of each species at the range-wide level is determinative, and no portions of the range require further examination. Nevertheless, we agree with the general underlying premise of the comment, which is that if a species has significant areas of refugia or diversity of habitat, those are factors that provide additional buffering against extinction risk. We have incorporated that consideration in the final rule through our Final Determination Framework and species-specific evaluations.

Comments on Listing Determinations

Comment 43: We received numerous comments referring to the actual listing determinations of the 82 candidate coral species in the proposed rule. Many of those comments referred to specific coral species and to specific aspects of those species determinations. Those comments are discussed in detail in the Caribbean Species: Listing Determinations, Indo-Pacific Species: Listing Determinations, and Reclassification of *Acropora palmata* and *A. cervicornis* comment response sections below. The other comments regarding listing determinations centered on the lack of species-specific information on which the species determinations were based. Some comments were very skeptical that the assumptions being made from limited scientific information on individual coral species, which the proposed rule recognized, could justify the listing proposals. These commenters asserted that further studies and surveys should be performed to gather factual and relevant data on the status of the coral species, which could potentially change the assumptions used to make the listing determinations. Some comments specifically stated that a much better understanding of the global distribution and abundance of the species, including developing better species distribution maps, is critical to making an informed listing decision. Yet other comments stated that the proposed rule did not take into account the variability of response to threats that corals can have based on species, location, habitat type, and other factors that define an individual coral. Other comments suggested that NMFS was using global climate predictions as a substitute measure for species population and distribution information for listing purposes.

Response: We recognize that species-specific information was fairly limited for many of the proposed species. However, since the proposed rule was published, we have received or collected information for all species, including supplemental distribution and abundance information for 63 of the 65 species in this final rule as a result of the data collection effort by Veron (2014). In addition to updating all of the general information regarding coral reef biology, ecology, demography, and threat susceptibilities, we also incorporated this supplemental information in our discussions in the individual species-specific listing determinations in that section of this final rule. In light of the supplemental species-specific information, and the change to a more holistic and species-specific determination framework, we considered the ability of each species' distribution and abundance traits to affect vulnerability to extinction in the context of the statutory definitions of threatened and endangered for each species. In most cases, this consideration led to changes in listing status from the proposed rule. These species-specific assessments consider all of the public comments and available information for each species and provide a detailed description of what is and is not known for each species, including susceptibilities to all identified threats and vulnerability to extinction

Comment 44: We received several letters alerting us to an extensive ongoing effort by coral expert, Dr. J.E.N. ''Charlie'' Veron, to gather previously unpublished information for all reef-building corals of the world, including the 65 corals in this final rule. The resulting report (Veron, 2014) updates species-specific information on semi-quantitative (*i.e.,* survey data from 2,984 individual sites) and qualitative population abundance estimates (*i.e.,* Veron's subjective estimates covering a full range of habitats and most ecoregions the author has worked in), geographic distribution, principle habitat, and identification issues. Comments stated that given the lack of species-specific information on quantitative abundances and geographic distribution for most of our Indo-Pacific species, this effort proves extremely relevant to our listing decisions within this final rule.

Response: We agree with comments that information from Veron (2014) supplemented the existing species-specific information relied on in the proposed rule and that this information is relevant to the determinations made in this final rule. Thus, the supplemental information received in the report (Veron, 2014) was made available to the public on NOAA's Web site, and has been incorporated into the Species-specific Information and Determinations section for the 63 species covered in the report, Veron (2014) does not cover non-scleractinian corals in his report, and thus did not provide information for the *Millepora* species in this final rule).

Comments on Alternatives To Listing Under the ESA

Comment 45: We received several comments that suggested alternatives to ESA listing such as Candidate Conservation Agreements (CCAs), adding the proposed corals to the Species of Concern list, and extending the time period in which to make a determination to allow for the gathering of additional scientific data. One commenter suggested using CCAs, citing lack of species-specific information and other concerns as justification. Comments also asserted that because NOAA has no authority under the ESA to protect corals from climate change, CCAs could provide the same conservation benefits as ESA listings.

Response: While we acknowledge that CCAs provide conservation value for candidate species, no such agreements exist for any of the proposed species. Therefore, we are unable to determine a species' status on the basis of the conservation provided by a CCA. Further, in the Conservation Efforts section we determined that there are no conservation efforts currently or planned in the future that are expected to improve the overall status of any of the 65 coral species in this final rule, such that the additional protections provided by the ESA are not warranted.

We also considered the potential for utilizing the Species of Concern designation, which was suggested in lieu of ESA listings due to a lack of species-specific information and taxonomic uncertainty. This designation can be used if we decide a species is not warranted for listing under the ESA because we are unable to confidently assess the level of extinction risk, even qualitatively. Ultimately, based on the best available scientific information, we concluded that all 65 corals within this final rule are determinable species under the ESA. We also concluded that we have enough information to qualitatively assess the level of extinction risk and make listing determinations for most of the 65 species in this final rule with some degree of confidence. The species that are determined to be not warranted for listing due to a lack of sufficient information to assess their status are clearly described as such in the individual species determinations. Those species may be considered for inclusion on the Species of Concern list after this listing rule becomes final.

Extending the time period in which to make final species determinations in order to collect more scientific data is not permissible under the ESA. We are required to use the best scientific and commercial data available within the applicable statutory timeframes for responding to petitions, as the basis for our final determinations.

Comment 46: We received comments that criticized our proposed determinations due to their assumed inconsistency with other recent agency decisions, such as the Not Warranted bumphead parrotfish 12-month finding, and the negative Alaska deep-sea corals 90-day finding. Comments cited a lack of adequate species-specific information and taxonomic uncertainty as justification for the previous not warranted and negative determinations for bumphead parrotfish and Alaskan corals, and claimed that the proposed rule for the 68 reef-building corals suffers from the same level of uncertainty. Comments thus concluded that NOAA's decision to propose 68 reef-building corals for listing under the ESA is inconsistent with previous agency decisions and that there is a lack of adequate species-specific information to proceed with final listings.

Response: We respond to each petition based on the information presented within that petition and, if we conduct a status review, on the best scientific and commercial information available for each petitioned species at the time. We disagree that this final rule for 65 reef-building corals is inconsistent with our previous Not Warranted 12-month finding for the bumphead parrotfish. Primary threats to bumphead parrotfish, a coral reef-associated fish, were determined to be adult harvest and juvenile habitat loss. As a result of a thorough status review, the bumphead parrotfish received a Not Warranted determination largely due to its current abundance, life history, existing local management in the form of spear fishing regulations, and protections for mangrove habitat. Overall, the differences between bumphead parrotfish and the reef-building corals in this final rule are vast; however, we have complied with the requirements set forth under the ESA in each case.

Likewise, we disagree that this final rule is inconsistent with the negative 90-day finding for 44 Alaska deep-sea corals. The Alaska deep-sea coral species are non-reef building and exhibit many different characteristics than shallow-water tropical corals, which have been comparatively well researched. The Alaska corals were petitioned due to climate change related threats, as well as physical threats from commercial fisheries. NOAA considered these factors, but found that there are no empirical studies that have shown harmful effects of climate change related threats to these deep-sea corals or to similar corals in the area. Additionally, ocean acidification research cited in the petition was conducted on mostly tropical, reef-building corals that are very different from deep-sea corals; no inference could be made about the potential effects to the status of deep-sea corals from this information. Finally, there have been large swaths of fishing ground closures in Alaska since 2005 and NOAA determined that these closures were sufficient for protecting deep-water corals from bottom-contact fishing activities. Overall, differences between the Alaska deep-water corals and the reef-building corals in this final rule are vast; however, we have complied with the requirements set forth under the ESA in each case.

Comments on Caribbean Species: Listing Determinations

Comment 47: We received some comments that expressed disagreement with our proposed threatened determinations for some Caribbean species. For example, one comment disagreed with our proposed threatened listing of *Dichocoenia stokesi,* citing the following as justification: Large population numbers (even after the White Plague Type II epidemic), broad distribution among multiple habitat types (especially hard-bottom habitats), high relative abundance among all corals in the region, and the presently low prevalence of White Plague Type II. Another comment stated that *D. stokesi* is among the most common species in Florida, and that population estimates approached 100 million colonies in 2005, with no apparent downward trend. In addition, we received comments about the proposed threatened determination for *Agaricia lamarcki.* Comments argued that due to potentially larger populations not yet surveyed in deeper waters, the threatened status for *A. lamarcki* is not warranted. Many comments disagreed with the proposed endangered determinations for the *Orbicella* (formerly *Montastraea*) *annularis* complex (*i.e., O. annularis, O. faveolata,* and *O. franksi*). One comment provided information from van Woesik *et al.* (2012) as justification for listing *O. annularis* complex as threatened rather than endangered. Other comments submitted a technical report (Miller *et al.,* 2013) from the Nova Southeastern University on population abundance estimates and trends for the Caribbean coral species in the Florida Keys, in opposition to all proposed endangered listing determinations, including the proposed endangered determinations for the *Orbicella* species as well as

Dendrogyra cylindrus and *Mycetophyllia ferox.* Miller *et al.* (2013) provided recommended changes to the proposed listing statuses for each of the proposed Caribbean species using their population and distribution estimates as support. We received other comment letters that also noted the large population abundances of several of the Caribbean species, despite some local declines (*i.e., O. annularis* and *O. faveolata*). One comment also noted that for five of the Caribbean species (*i.e., O. franksi, D. cylindrus, M. ferox, D. stokesi,* and *A. lamarcki*) there is a complete lack of population data to support ESA listings. We also received information regarding the ecology of *O. annularis* and *O. faveolata* in opposition to their proposed endangered determinations, but supporting threatened listings. One comment argued that the total population number estimates of these two species are very large and that, in light of their broad depth ranges and multi-habitat distributions, these species are relatively resistant (in ecologic time) to extinction. Accordingly, the comment asserted that these species' potential listing is contrary to their ecology, especially in light of their remaining substantial population numbers both in Florida and throughout their range.

Response: Since the proposed rule was published, we received and collected supplemental information for all the Caribbean species, including updated distribution and abundance information. Therefore, we updated and expanded our individual species-specific descriptions in the Species-specific Information and Determinations section for all 65 reef-building corals within this final rule. These species-specific assessments consider the public comments and available information for each species, and explain what is and is not known for each species, including susceptibilities to the identified threats and overall vulnerability to extinction. Further, as described in earlier comment responses, we now more fully consider the ability of abundance, distribution and habitat heterogeneity to affect vulnerability to extinction in the context of the statutory definitions of threatened and endangered as applied to corals. The reconsiderations of the spatial and demographic factors contributed to changes in all the Caribbean species' statuses in this final rule. Thus, as described in detail in the Species-specific Information and Determinations section, based on the public comments, best available information, and the Final Determination Framework, we are revising our proposal to list *O. annularis, O. faveolata, O. franksi, D. cylindrus,* and *M. ferox* as endangered species. Our final determination for these species is to list them as threatened species. We have determined *D. stokesi* and *A. lamarcki* do not warrant listing.

Comments on Indo-Pacific Species: Listing Determinations

Comment 48: We received several comments regarding our proposed threatened and endangered determinations for various Indo-Pacific species. Several comments disagreed with our proposed threatened determinations for the Hawaiian *Montipora* clades (*M. dilitata/flabellata/turgescens* and *M. patula/verrilli*). As described in more detail below, comments disagreed with the status of these clades and suggested they be assessed individually rather than lumped into groups (see Comment 49 below for more details). Taxonomic uncertainty as it relates to the Genus *Montipora* and the decision to lump these two groups of species is addressed in more detail in the response to comments on taxonomic uncertainty (Comment 3 above). Comments also asserted that the *Montipora* clades not only have significantly large geographic ranges, but also include some of the most common coral species in Hawaii, thus rendering these clades not warranted for threatened listing. We received many other comments that disagreed with the proposed threatened determinations for a number of the Indo-Pacific coral species, but we did not receive any additional substantive information or data for consideration of those arguments.

One commenter provided information regarding the proposed endangered status of *Pocillopora elegans* in the Eastern Pacific. Evidence from southwestern Nicaragua suggests that *P. elegans* has undergone extensive mortality, with only a few fragmented and small colonies persisting. The data provided, while limited, supports a wider body of evidence suggesting particular vulnerability of *P. elegans* in the Eastern Pacific Ocean. However, as described above in Comments on Taxonomic Uncertainty in Reef-building Corals, new information on *Pocillopora* species has resulted in our determination that *P. elegans* is not determinable under the ESA.

The main argument against our proposed endangered determinations for Indo-Pacific species is a lack of adequate species-specific information to support an endangered status. For example, one comment letter noted the percentage of references used in the SRR that provided species-specific information for each of the proposed endangered species (*e.g.,* only two percent, 5.9 percent and 9.4 percent of the references used in the SRR provided species-specific information for *Acropora rudis, Acropora lokani,* and *Acropora jacquelineae,* respectively). We also received comments regarding the proposed endangered determinations for various *Acropora* species, particularly *A. lokani* and *A. jacquelineae.* For example, one comment emphasized the lack of adequate data for the proposed endangered determination of *A. jacquelineae,* citing questionable taxonomic status and lack of density estimates and distribution information. Likewise, another comment criticized the proposed endangered determination for *A. lokani,* stating that there is virtually no published information available for this species. Another comment letter recommended threatened designations for *A. jacquelineae, A. lokani,* and *A. rudis* rather than endangered, based on van Woesik *et al.* (2012), and stated that *Euphyllia paradivisa* absolutely does not warrant endangered status. We received other comments in disagreement with our proposed endangered determinations, but they did not include any other substantive information or data to consider.

Response: We recognize that species-specific information was limited for many of the Indo-Pacific species. Since the proposed rule was published, however, we have received or collected supplemental information for several species, including updated distribution and abundance information for 63 of the 65 species in this final rule as a result of the data collection effort by Veron (2014). As a result, we substantially updated and expanded our individual species-specific descriptions in the Species-specific Information and Determinations section for all 65 reef-building corals within this final rule. These species-specific assessments consider all of the public comments and available information for each species, and provide a detailed description of what is and is not known for each species, including vulnerabilities to all identified threats.

Comment 49: We received some comments that provided species-specific information for various Indo-Pacific species that is being applied in this final rule. The species-specific information we received predominantly relates to relative abundance and geographic distributions. We specifically received comments on abundance for the following Indo-

Pacific species: *Acropora aspera, Porites nigrescens, Acropora diversa,* and *Isopora cuneata.* We specifically received comments on distribution for the following Indo-Pacific species: *Alveopora allingi, Acropora palmerae, Acropora paniculata, Acropora jacquelineae, Acropora rudis, Euphyllia paradivisa, Acanthastrea brevis, Acanthastrea ishigakiensis, Acanthastrea regularis, Acropora globiceps, Acropora lokani, Acropora striata, Alveopora fenestrata, Alveopora verilliana, Astreopora cucullata, Barabattoia laddi, Euphyllia paraancora, Millepora tuberosa, Pavona diffluens, Pocillopora danae, Acropora verweyi,* and the *Montipora* clades that are discussed in more detail below. We received several detailed comment letters that provided species-specific information regarding the Hawaiian *Montipora* clades (*i.e., Montipora dilatata/flabellata/turgescens* and *Montipora patula/verrilli*). Several of the comments provided references to journal articles or other reports as new species-specific information. Some of those references were already available to NMFS and some constituted supplemental information we did not consider in the proposed rule. We received three comments specific to genetics of Indo-Pacific species specifically referring to *Pavona* species at mesophotic depths and to *Pocillopora* species. Species-specific comments regarding taxonomy were specific to *Acropora acuminata, Acropora paniculata,* and *Acropora polystoma.* Comments with species-specific information on threat vulnerabilities applied to *Acropora aculeus, Acropora aspera, Acropora paniculata, Acropora polystoma, Montipora patula, Montipora flabellata, Pocillopora elegans, Porites horizontalata,* and *Seriatopora aculeata.*

Response: Overall, most of the supplemental information we received for the Indo-Pacific species was specific to certain geographic locations; however, we must evaluate the status of the species throughout the entirety of their ranges. As described in earlier comment responses, we now more fully consider the ability of spatial and demographic traits, as well as the heterogeneous habitats occupied by all of the Indo-Pacific species, to affect vulnerability to extinction in the context of the statutory definitions of threatened and endangered for each species. For many of the Indo-Pacific species, their geographic ranges include waters between the east coast of Africa and French Polynesia. As described in detail in the Species-specific Information and Determinations section, based on the Final Determination Framework and supplemental information, we are maintaining our proposals to list *Acropora globiceps, Acropora pharaonis, Acropora retusa, Acropora speciosa, Acropora tenella, Isopora crateriformis, Montipora australiensis, Pavona diffluens, Porites napopora,* and *Seriatopora aculeata* as threatened in this final rule. Five Indo-Pacific coral species determinations changed from endangered in the proposed rule to threatened in the final rule: *Acropora jacquelineae, Acropora lokani, Acropora rudis, Anacropora spinosa,* and *Euphyllia paradivisa.* Forty Indo-Pacific coral species' determinations changed from threatened in the proposed rule to not warranted in the final rule: *Acanthastrea brevis, Acanthastrea hemprichii, Acanthastrea ishigakiensis, Acanthastrea regularis, Acropora aculeus, Acropora acuminata, Acropora aspera, Acropora dendrum, Acropora donei, Acropora horrida, Acropora listeri, Acropora microclados, Acropora palmerae, Acropora paniculata, Acropora polystoma, Acropora striata, Acropora vaughani, Acropora verweyi, Alveopora allingi, Alveopora fenestrata, Alveopora verrilliana, Anacropora puertogalerae, Astreopora cucullata, Barabattoia laddi, Caulastrea echinulata, Euphyllia cristata, Euphyllia paraancora, Isopora cuneata, Millepora tuberosa, Montipora angulata, Montipora calcarea, Montipora caliculata, Montipora dilatata/flabellata/turgescens, Montipora lobulata, Montipora patula/verrilli, Pachyseris rugosa, Pectinia alcicornis, Physogyra lichtensteini, Porites horizontalata,* and *Porites nigrescens.* Finally, *Millepora foveolata* changed from endangered in the proposed rule to not warranted in the final rule.

Last, as described in Comment 2, three coral species determinations changed from endangered or threatened in the proposed rule to not determinable in the final rule: *Pocillopora elegans* (eastern Pacific) warranted listing as endangered in the proposed rule but was considered not determinable in the final rule, and *Pocillopora danae* and *Pocillopora elegans* (Indo-Pacific) warranted listing as threatened in the proposed rule but were considered not determinable in the final rule.

Comments on Reclassification of *Acropora palmata* and *Acropora cervicornis*

Comment 50: Several comments disagreed with our proposal to reclassify the Caribbean species *A. cervicornis* and *A. palmata* from threatened to endangered. Most comments agreed with the current status of threatened for the Caribbean acroporid species. Many comments cited increasing abundances, recovering populations, and significant advances in active restoration projects as justification for not reclassifying them as endangered. One comment opposed the proposed reclassification, citing population numbers (Miller *et al.,* 2013), genetic diversity (Hemond and Vollmer, 2010), forward-looking population models and extinction models based on paleontological data (van Woesik *et al.,* 2012), and a better understanding of the causes of and resistance to mortality (Kline and Vollmer, 2011; Vollmer and Kline, 2008) as justification. Comments also stated that there has been no significant change in the population status of the acroporids since their initial listing in 2006, and populations are relatively stable and recovering in some areas. One commenter also emphasized that *A. cervicornis* in particular does not warrant endangered listing status due to its presence throughout its entire biogeographical range, population expansion northward in south Florida, and its ability to still reproduce sexually. One commenter asserted that reclassifying the Caribbean *Acropora* species to endangered is not warranted because the threats to these species are not imminent. Additionally, many comments cited the growing number of successful restoration projects throughout southeast Florida and the Caribbean (Hollarsmith *et al.,* 2012; Johnson *et al.,* 2011; Young *et al.,* 2012) that continue to aid in conservation of acroporids and help recover genetically viable populations. Overall, comments suggest the Caribbean acroporids should remain threatened under the ESA, and do not warrant reclassification to endangered status. However, we did receive one comment letter in support of the reclassifications for the Caribbean acroporids.

Response: As described previously, we have revised and provided a clearer explanation of our decision-making framework to further strengthen our final listing determinations. As with all other species in this final rule, we updated all of the general information regarding coral reef biology, ecology, demography, and threat susceptibilities relevant to the Caribbean acroporids, and thus we substantially updated and expanded our individual species-specific descriptions for these species in the Species-specific Information and Determinations section. Further, as previously described in earlier comment responses, we more fully consider in

this final rule the ability of spatial and demographic traits, as well as habitat heterogeneity, to affect vulnerability of the Caribbean acroporids to extinction in the context of the statutory definitions of threatened and endangered for corals.

We also carefully considered the significant progress of active restoration projects in the state of Florida and the wider-Caribbean. We agree that these efforts confer conservation and potential recovery benefits for the species; however, these efforts, to date, are very limited in scale compared to the species ranges and should not be considered a panacea for conserving and recovering the Caribbean acroporids. The Conservation Efforts section of this rule provides more information on active coral reef restoration efforts. As described in detail in the Species-specific Information and Determinations section, based on the Final Determination Framework and supplemental information, we are changing our proposal to reclassify *A. palmata* and *A. cervicornis* as endangered species. *Acropora palmata* and *A. cervicornis* will remain listed as threatened species.

Comments on Effects of Listing

Comment 51: We received several comments that described potential negative effects that could result from ESA coral listings. These include regulatory burdens in the form of permit applications and other various paperwork, consultations and biological opinions, postponement of in-water maintenance activities, and increased costs associated with harbor improvement projects. We also received numerous comments expressing concern about impacts to cultural practices as a result of listing, including native artists' livelihoods, reef access by indigenous peoples, fishing, lime production, customary navigation and seafaring, and specifically native Hawaiian recreational and cultural practices, and the cultural needs and practices of American Samoa. One comment expressed concern that reclassifying *A. palmata* and *A. cervicornis* from threatened to endangered will impede ongoing restoration and recovery efforts. We received one comment encouraging NMFS to make sure we have adequate staff to carry out the additional workload associated with ESA Section 7 consultations for any coral species that are listed in this final rule.

Response: The ESA explicitly restricts the factors that can be considered in listing decisions. Listing decisions can be based solely on the best scientific and commercial data available, after conducting a status review and taking conservation measures into account. Therefore, comments relevant to the proposed listing include those comments that provide additional substantive information regarding whether a species is in danger of extinction or likely to become so in the foreseeable future (*e.g.,* the biology, status, and/or threats to the species, evaluation methodologies, effectiveness of conservation measures, accuracy and comprehensiveness of best available information, *etc.*). We are unable to consider other types of comments in a listing determination (*e.g.,* socio-economic or policy impacts). However, after we implement the final listings, we will work with our stakeholders and affected entities to reduce the impact of the listings while still providing for the conservation of the listed corals.

Comments on Critical Habitat

Comment 52: We received three comments related to critical habitat. One commenter offered to provide information to assist in the economic analysis required for critical habitat designation. A second commenter proposed the use of NOAA benthic habitat maps to define areas of critical habitat for listed corals and requested reconsideration of designated critical habitat for *Acropora palmata* and *Acropora cervicornis.* A third commenter requested to be consulted during critical habitat designation to ensure the operation of their facilities would not be affected.

Response: The comments summarized above do not provide substantive information to help inform the final species determinations. NMFS is required to designate critical habitat at the time of final rule publication, unless we determine that critical habitat is undeterminable at that time. Below, we discuss our determination that critical habitat is not currently determinable for the species being newly listed through this final rule. Designation of critical habitat will occur via a separate rule-making process once this final rule is published, which will include opportunities for public participation and input. As such, the comments described above are noted but are not responded to further in this final rule.

Comments on ESA Section 9 Take Prohibitions

Comment 53: We received 12 comments specific to ESA 4(d) rule-making, which is discussed in the Section 9 Take Prohibitions section of the proposed rule. Eight of these comments requested or suggested exemptions from Section 9 take prohibitions for specific activities that should be included in a 4(d) rule issued for threatened species listed in this final rule. Two comments recommended that lawful emissions of GHG should be included as an exception in any future 4(d) rule. Two other comments said the opposite, stating that NMFS should not consider GHG emissions in the context of the ESA.

Response: The comments described above did not provide substantive information to help inform the final listing determinations for the 65 coral species. NMFS is not required to issue a 4(d) rule for threatened species in conjunction with a final ESA listing. We will do so only if we determine it is necessary and advisable for the conservation of threatened species. If we make that finding for threatened species listed in this final rule, issuance of a 4(d) rule is a separate rule-making process that will include specific opportunities for public input. As such, the comments above are noted but not responded to further in this final rule.

Comments on Identification of Those Activities That Would Constitute a Violation of Section 9 of the ESA

Comment 54: We received numerous comments regarding concerns over the definition of ''take'' for corals under the ESA. Comments questioned how we would define ''take'' if corals are listed, considering their unique biological and ecological characteristics (*i.e.,* corals are colonial and clonal organisms). One commenter pointed out a lack of certainty regarding the threshold of ''take'' for coral larvae. Another commenter thought it was unclear how people would know if they are ''taking'' a listed coral and expressed concern about the ability to conduct cultural practices. A third commenter stated that, in the example of corals, the stated goals of the ESA are at odds with the best plan for the recovery of any coral species.

Response: We agree that defining ''take'' of corals under the ESA is both unique and challenging, because of the biology of reef-building corals. As described below under Corals and Coral Reefs—Individual Delineation, these species are both colonial (*i.e.,* capable of creating colonies from multiple genetically-identical polyps) and clonal (*i.e.,* capable of asexual reproduction to create genetic duplicates). The ESA take prohibitions only apply to endangered species immediately upon listing. No species in this final rule are being listed as endangered; therefore, we do not define activities that may result in take in this final rule, because take is not

automatically prohibited for threatened species. Should we deem it necessary and advisable that extending any of the ESA section 9 prohibitions, including take prohibitions, is necessary for the conservation of any of the newly-list threatened coral, we will do so in a subsequent rule-making.

Comments on Policies on Role of Peer Review

Comment 55: We received two comments that criticized NMFS for not conducting peer review on the proposed rule. One commenter stated the following: ''The Department of Commerce issued guidelines to comply with the OMB mandate, publishing the final Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Disseminated Information in October 2002. As part of the NOAA guidelines, the agency must apply a higher standard to 'influential scientific information' ('ISI'), which is defined as scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions.' Id. ISI is subject to the more stringent information standards in the OMB's Final Information Quality Bulletin for Peer Review (''OMB Peer Review Bulletin''), which requires peer review by qualified specialists in the relevant field (70 F.R. 2664; January 14, 2005).''

Response: The proposed rule itself was not peer reviewed. However, the supporting documents that formed the basis for the determinations in the proposed rule (*e.g.,* the SRR, FMR) were independently peer reviewed by subject matter experts. In addition, much of the information we received as a result of the public engagement and public comment periods and incorporated into this final rule was independently peer reviewed. During the public comment period and subsequent 6-month extension solicitation, we received critical review of the information on which the proposed rule was based from several coral reef experts. As a result, the information used to form the basis of our final listing determinations represents the best available scientific and commercial information to date on the 65 reef-building coral species within this final rule, and that we have complied with all applicable policies and guidance on peer review.

Comments Outside of the Scope of the Proposed Rule

We received numerous public comments in response to the proposed rule that are outside the scope of this rulemaking. Below are brief explanations to note the comments were received and explain why they are not considered relevant to the content of the proposed rule.

Comment 56: We received several comments regarding concerns over potential economic impacts as a result of listing coral species from various concerned parties. In addition, we received many comments criticizing the proposed rule as an inappropriate use of the ESA to protect corals in the face of global climate change. Some comments emphasized that the ESA is not designed to regulate GHGs and thus ESA listings are not a prudent use of time and resources. Comments also cited impacts to cultural practices related to marine resource use in opposition of ESA coral listings.

Response: Due to the statutory requirements of the ESA, comments relevant to the proposed listing include those comments that provide additional substantive information regarding any facet of the proposed rule (*e.g.,* the biology, status, and/or threats to the species, evaluation methodologies, accuracy and comprehensiveness of best available information, *etc.*). Comments not relevant to this rule making are those comments that are not related to the content of the proposed rule and/or comments that we are legally unable to consider in a listing determination (*e.g.,* economic impacts). While we are required to review and consider all comments, comments on issues outside the scope of the proposed rule, such as the comments described above, were noted, but are generally not responded to in this final rule.

Comment 57: Several commenters provided general support for the proposed listings but did not provide substantive information or specific comments on the content of the proposed rule.

Response: General support for the proposed action does not constitute submission of substantive information regarding any facet of the proposed rule. Therefore, these comments were noted but are not responded to in this final rule.

Comment 58: We received three comments pertaining directly to one or more of the 16 Not Warranted findings that were issued simultaneously with the proposed rule. One commenter questioned why some Caribbean species were determined to be Not Warranted while others are proposed because threats to all species appear to be the same. Another commenter stated that *Porites pukoensis* should have been proposed for listing based solely on the fact that it is endemic to Hawaii. A third commenter provided information on *Turbinaria reniformis'* tolerance to threats associated with climate change.

Response: A Not Warranted finding is a final decision for which public comments are not solicited. Therefore, comments on the not warranted findings are noted but not considered relevant to the content of the proposed rule and are not responded to directly in this final rule. We do note, however, that species determinations are based on more than just geographic range or existing threats alone and not warranted determinations were reached by considering all available information on species abundance, range, depth distribution, and threat vulnerabilities including susceptibility and exposure, as is described in more detail in the not warranted findings.

As also described in the proposed rule, a threatened coral is likely to become an endangered coral within the foreseeable future throughout all or a significant portion of its range. For threatened species, there is a temporal delay in extinction risk afforded by some characteristics of the species, such as broader distribution, larger populations, lower vulnerability to the most important threats, and better management. Threatened species are less vulnerable than endangered species, but still have characteristics that are likely to put them at elevated extinction risk within the foreseeable future. For each of the 65 species under consideration, we explain how a species' characteristics and its ability to provide buffering capacity to the identified threats influences its extinction risk over the foreseeable future. Some of the 65 species in this final rule meet the definition of threatened, as explained in the species sections below.

Basis of Listing Determinations

The following sections summarize all of the best available information on reef-building corals in general, which provides the baseline context and foundation for our species-specific listing determinations. While this general information illustrates that the most important threats are currently increasing in severity, and likely to continue increasing further in the foreseeable future, it also illustrates that the impacts from these threats, both currently and over the foreseeable future, are difficult to interpret and do not necessarily correlate to increased vulnerability to extinction due to the biological and physical variability and complexity of corals and their habitat. Accordingly, our Final Determination Framework and species determinations are based upon an analysis of the best

available species-specific information evaluated within a worsening future environment.

In addition to the comments we received on the proposed rule that include new or supplemental information, we have continued to collect information that has either emerged since the publication of the proposed rule or that was published at the time of the proposed rule, but had been inadvertently overlooked. This latter category also includes literature cited in the SRR or SIR, but that was further examined to provide relevant information. Therefore, we consider ''supplemental information'' to be that which was not considered at the time of the proposed rule that expands upon the themes in the proposed rule, but does not fundamentally change a finding from the proposed rule. ''New information'' is considered to be that which is novel and results in a change to a finding in the proposed rule. To distinguish between the information on which the proposed rule was based from new or supplemental information, we will only cite the primary literature for new or supplemental information. For clarity, we will distinguish whether the information was identified via public comment or if we gathered it ourselves.

All the general information on reef-building corals, which provides the appropriate context for our species-specific determinations, is provided in the Corals and Coral Reefs and Threats Evaluation sections. The Risk Analyses section follows and describes our methods and final determination framework for making our determinations. Last, we provide the individual listing determinations in the Species-specific Information and Determinations section, which are based on all of the best available information for each coral species.

Corals and Coral Reefs

This section provides a summary of the best available information on the biology and habitat of reef-building corals as it pertains to this final rule. First, we briefly summarize the information from the proposed rule, which is based on the SRR and SIR. We also address all relevant comments received pertaining to the biology and habitats of reef-building corals. Further, we provide supplemental information relevant to biology and habitat of corals that we gathered during the period between the proposed and this final rule. This information provides part of the context in which we evaluate the species' status and illustrates the unique nature of this evaluation compared to typical NMFS' ESA listing determinations (*i.e.*, vertebrates).

As summarized in the proposed rule, corals are marine invertebrates in the phylum Cnidaria that occur as polyps, usually forming colonies of many clonal polyps on a calcium carbonate skeleton. The Cnidaria include true stony corals (class Anthozoa, order Scleractinia), the blue coral (class Anthozoa, order Helioporacea), and fire corals (class Hydrozoa, order Milleporina). All 68 proposed species are reef-building corals, because they secrete massive calcium carbonate skeletons that form the physical structure of coral reefs. Reef-building coral species collectively produce coral reefs over time in high-growth conditions, but these species also occur in non-reef habitats (*i.e.*, they are reef-building, but not reef-dependent). There are approximately 800 species of reef-building corals in the world.

Most corals form complex colonies made up of a tissue layer of polyps (a column with mouth and tentacles on the upper side) growing on top of a calcium carbonate skeleton, which the polyps produce through the process of calcification. *Millepora* fire corals are also reef-building species, but unlike the stony corals, they have near-microscopic polyps containing tentacles with stinging cells.

Individual Delineation

Comment 5 identified the lack of clarity on and complexity of the delineation of the ''individual'' with respect to corals and its influence in estimating population abundance. We agree that this is a complex issue and did not provide sufficient details on how we identified what an individual is and how the consideration of this issue factored into our estimates of abundances for each of the proposed species in the proposed rule. Thus, in this final rule, we provide details on how we considered individual delineation in the proposed rule and this final rule.

Reef-building corals are clonal organisms. A single larva will develop into a discrete unit (the primary polyp) that then produces modular units (*i.e.*, genetically-identical copies of the primary polyp) of itself, which are connected seamlessly through tissue and skeleton. These modular units may be solitary (*e.g.*, fungiid corals) or colonial. Most reef-building coral species are colonial, including all species covered in this final rule. Colony growth is achieved mainly through the addition of more polyps, and colony growth is indeterminate. The colony can continue to exist even if numerous polyps die, or if the colony is broken apart or otherwise damaged. The biology of such clonal, colonial species creates ambiguity with regard to delineation of the individual in reef-building corals, specifically: (1) Polyps versus colonies; (2) sexually-produced versus asexually-produced colonies; and (3) difficulty determining colony boundaries. Each source of ambiguity is addressed below, leading to a conclusion regarding the delineation of the ''individual'' for the species covered by this final rule, which was not specifically defined in the proposed rule. Though not specifically defined, we applied this same concept of the individual in the proposed rule.

The polyp could be considered as the smallest unit of the individual for reef-building corals. Each polyp in a coral colony consists of a column of tissue with a mouth and tentacles on the upper side, growing in a cup-like skeletal structure (the corallite) made of calcium carbonate that the polyp produces through calcification. The polyps are the building blocks of the colony, and most colony growth occurs by increasing the number of polyps and supporting skeleton. Polyps carry out the biological functions of feeding, calcification, and reproduction. However, because the polyps within a colony are modular units, and connected to one another physiologically (*i.e.*, via nerve net and gastrovascular cavity, and are the same sex), single polyps within a colony are not considered to be individuals for purposes of this final rule.

Alternatively, only colonies originating from sexually-produced larvae could be considered as the individual for reef-building corals. Colonies are founded by either sexually-produced larvae that settle and become the primary polyp of a colony, or asexually-produced fragments of pre-existing colonies that break off to form a new colony. Fragments from the same colony can fuse back together into the same colony if they are close enough to grow together. Fragmentation in branching species may lead to a large number of asexually-produced, genetically identical colonies, commonly resulting in a population made up of more asexually-produced colonies than sexually-produced colonies (Hughes, 1984). Sexually-produced colonies are important to the population by increasing the genetic diversity of the population, and colonies originating from asexually-produced fragments do not contribute to the effective population (*i.e.*, group of genetically unique individuals). Asexual reproduction, though it does not create new genetic individuals, is likely the

more critical mode for some species, especially branching species, allowing them to grow, occupy space, and persist between relatively rare events of sexual reproduction. Sexually- and asexually-produced colonies often cannot be distinguished from one another in the field, but are identifiable as an individual, in most cases. Thus, we use the concept of the ''physiological colony'' as the entity that can be considered an individual. The physiological colony for reef-building colonial species is defined here as any colony of the species, whether sexually or asexually produced.

A physiological colony is generally autonomous from other colonies of the same species. However, colony morphology, partial colony mortality, and other colony growth characteristics (*e.g.*, formation of stands or thickets) can complicate the delineation of physiological colonies from one another in the field. For example, the overall colony morphology of many encrusting species (*e.g.*, some *Montipora* species) is largely dictated by the underlying substrate. In those cases, colony shape may not distinguish colonies from one another, and boundaries between separate encrusting colonies that have grown together may be difficult or impossible to make out visually. Partial mortality of colonies, especially larger colonies, can also mask the boundaries between colonies, because the algae-encrusted coral skeleton of a partially dead colony may appear to delineate two or more colonies. In addition, many reef-building coral species occur in stands or thickets that may be tens of meters or more in diameter (*e.g.*, some *Acropora* species), possibly consisting of multiple colonies or only one large colony, also masking the boundaries between colonies. In each of these instances, the actual number of genetically-distinct individuals can only be determined through genetic analysis. Those techniques have not been established for all coral species and are not feasible to conduct for every reef assessment. Therefore, most reef assessments for coral abundance also use the concept of the physiological colony as the unit for enumerating species.

Despite the challenges in individual delineation of clonal, colonial reef-building corals, this final rule considers the ''individual'' for each of the proposed species to be the physiological colony, as defined above. That is, polyps are not considered individuals, but sexually- and asexually-produced colonies are considered individuals because they are a type of physiological colony and are the unit that can be identified in the field. We acknowledge that there are limitations with this definition of the individual, including usually-unknown proportions of genetically-distinct individuals in a population and the difficulty with the determination of physiological colony boundaries. But defining the individual this way is the most supportable for this final rule based on the best available science. While we did not specifically name the individual as the physiological colony in the proposed rule, it is how we considered the individual in the proposed rule because the majority of the information on abundance is based on the physiological colony which can be readily identified and counted in field surveys. Thus, in our species determinations we use the physiological colony to inform how we estimate abundance of a coral species because that is how field surveys estimate coral abundance. Using the physiological colony to estimate abundance in the final rule does not change how we estimated abundance in the proposed rule, in which we also relied on information that uses the physiological colony to report abundance estimates. If we have information on the effective population size (*i.e.*, proportion of clonality) for a species, that information is also considered.

Taxonomic Uncertainty in Reef-Building Corals

To determine if the proposed corals meet the ESA definition of a species, we had to address issues related to the taxonomic uncertainty in corals (*e.g.*, reliance on morphological features rather than genetic and genomic science to delineate species) and corals' evolutionary history of reticulate processes (*i.e.*, individual lineages showing repeated cycles of divergence and convergence via hybridization). To address taxonomic uncertainty related to species delineation, except as described below where genetic information was available, the proposed rule considered the nominal species designation as listed in the petition, acknowledging that future research may result in taxonomic reclassification of some of the candidate species. Additionally, to address complex reticulate processes in corals, the BRT attempted to distinguish between a ''good species'' that has a hybrid history—meaning it may display genetic signatures of interbreeding and back-crossing in its evolutionary history—and a ''hybrid species'' that is composed entirely of hybrid individuals (as in the case of *Acropora prolifera*, discussed in the status review of acroporid corals in the Caribbean; *Acropora* Biological Review Team, 2005). The best available information indicates that, while several of the candidate species have hybrid histories, there is no evidence to suggest any of them are ''hybrid species'' (that is, all individuals of a species being F1 hybrids); thus, they were all considered to meet the definition of a ''species.''

Studies elucidating complex taxonomic histories were available for several of the genera addressed in the status review, and we were able to incorporate those into our species determinations. Thus, while we made species determinations for most of the 82 candidate coral species on the nominal species included in the petition, we made alternate determinations on the proper taxonomic classification for the candidate species *Montipora dilatata* and *M. flabellata; Montipora patula* and *Porites pukoensis* based on genetic studies. We decided to subsume a nominal species (morpho-species) into a larger clade whenever genetic studies failed to distinguish between them (*e.g., Montipora dilatata, M. flabellata,* and *M. turgescens* (not petitioned) and *Porites* Clade 1 *forma pukoensis*). Comment 3 objected to the lumping of the *Montipora* species based solely on one study. However, because the commenter did not provide any contrary information and we did not find any new or supplemental information suggesting that subsuming the *Montipora* species into a larger clade is incorrect, we are maintaining our determination that *M. dilitata*/*M. flabellata*/*M. turgescens* and *M. patula*/*M. verrilli* are considered species under the ESA.

In the proposed rule, *Pocillopora elegans* was split into two separate species because the two geographically-distant populations have different modes of reproduction. Additionally, the proposed rule examined the listing status of *P. danae.* After consideration of the information on taxonomic uncertainty, including from the proposed rule and supporting documents, Comment 2, and new information, we have determined that these three *Pocillopora* species (*P. elegans* (Eastern Pacific), *P. elegans* (Indo-Pacific), and *P. danae*), are not listable entities under the ESA. As explained in the response to Comment 2, new information on the three proposed *Pocillopora* species proposed for listing indicates an increasing level of taxonomic uncertainty to the point that these three species are not listable entities under the ESA at this time. Thus, this final rule considers 65 of the 68 species included in the proposed rule. However, even though these

remaining 65 species are determinable under the ESA, some uncertainty regarding taxonomy and certain species identification remains. These uncertainties are addressed for each species in the Species-specific Information and Determinations sections.

In addition to these specific examples of species delineation, Comment 1 stated that taxonomic uncertainties associated with many reef-building coral species are problematic for the ESA listing determination process. We acknowledge the clear delineation among individuals that characterizes vertebrate species is often absent in reef-building coral species. This final rule addresses that ambiguity with the general introductions in this sub-section, then by providing species-specific information for each species. Therefore, the level of taxonomic uncertainty is addressed for each of the species in this final rule in the Species-specific Information and Determinations sub-sections below.

Species Identification

We received several comments related to the difficulty in coral species identification (see Comment 1). In the proposed rule we acknowledged the difficulty in identification and how that affected the ability to accurately infer abundances for individual species (see proposed rule Distribution and Abundance section). However, we did not discuss the species identification uncertainty on a species by species basis. In this sub-section, we more fully describe the challenge of species identification. In the Species-specific Information and Determinations section, we address the identification uncertainty for each species, and determine if that uncertainly affects the reliability of the distribution and abundance information described for each species, based on expert analysis (Fenner, 2014b).

In this final rule ''species identification'' refers to the assignment of a given individual to a species based on its appearance in the field or lab. In contrast, ''species delineation'' refers to the definition of reef-building corals as distinct species based on their scientific classification or taxonomy (covered in the previous sub-section). Many reef-building coral species are difficult to identify for many reasons, including: (1) The high biodiversity of reef-building corals; (2) the high morphological plasticity in many reef-building coral species; and (3) the different methods used for species identification. An example of all three factors working together (high biodiversity, morphological plasticity, different methods) is provided by massive *Porites* species: Many species occur together in the same habitats and locations, morphological plasticity is high for both colony shape and corallite structure, and experts disagree about how to distinguish the species (Forsman *et al.*, 2009; Veron, 2000).

Coral species identification is based on the assumption that the taxonomy is correct. The high biodiversity, high morphological plasticity, and different methodologies create species identification problems even when the taxonomy is correct. But if the taxonomy is not correct, the species identification problems described here are irrelevant because species with a high level of taxonomic uncertainty (*e.g.*, the *Pocillopora* species in this final rule) are not listable entities under the ESA. Both the species delineation and species identification problems are highly species-specific, and are addressed for each species in the Species-specific Information and Determinations section.

Reproductive Life History of Reef-Building Corals

As summarized in the proposed rule, corals use a number of diverse reproductive strategies that have been researched extensively; however, many individual species' reproductive modes remain poorly described. Most coral species use both sexual and asexual propagation. Sexual reproduction in corals is primarily through gametogenesis (*i.e.*, development of eggs and sperm within the polyps near the base). Some coral species have separate sexes (gonochoric), while others are hermaphroditic. Strategies for fertilization are either by ''brooding'' or ''broadcast spawning'' (*i.e.*, internal or external fertilization, respectively). Asexual reproduction in coral species most commonly involves fragmentation, where colony pieces or fragments are dislodged from larger colonies to establish new colonies, although the budding of new polyps within a colony can also be considered asexual reproduction. In many species of branching corals, fragmentation is a common and sometimes dominant means of propagation.

Depending on the mode of fertilization, coral larvae (called planulae) undergo development either mostly within the mother colony (brooders) or outside of the mother colony, adrift in the ocean (broadcast spawners). In either mode of larval development, larvae presumably experience considerable mortality (up to 90 percent or more) from predation or other factors prior to settlement and metamorphosis. Such mortality cannot be directly observed, but is inferred from the large amount of eggs and sperm spawned versus the much smaller number of recruits observed later. Coral larvae are relatively poor swimmers; therefore, their dispersal distances largely depend on the duration of the pelagic phase and the speed and direction of water currents transporting the larvae. The documented maximum larval life span is 244 days (*Montastraea magnistellata*), suggesting that the potential for long-term dispersal of coral larvae, at least for some species, may be substantially greater than previously understood and may partially explain the large geographic ranges of many species.

The spatial and temporal patterns of coral recruitment have been studied extensively. Biological and physical factors that have been shown to affect spatial and temporal patterns of coral recruitment include substrate availability and community structure, grazing pressure, fecundity, mode and timing of reproduction, behavior of larvae, hurricane disturbance, physical oceanography, the structure of established coral assemblages, and chemical cues. Additionally, factors other than dispersal may influence recruitment, and several other factors may influence reproductive success and reproductive isolation, including external cues, genetic precision, and conspecific signaling.

In general, on proper stimulation, coral larvae settle and metamorphose on appropriate substrates. Some evidence indicates that chemical cues from crustose coralline algae, microbial films, and/or other reef organisms or acoustic cues from reef environments stimulate settlement behaviors. Calcification begins with the forming of the basal plate. Buds formed on the initial corallite develop into daughter corallites. Once larvae are able to settle onto appropriate hard substrate, metabolic energy is diverted to colony growth and maintenance. Because newly settled corals barely protrude above the substrate, juveniles need to reach a certain size to limit damage or mortality from threats such as grazing, sediment burial, and algal overgrowth. In some species, it appears that there is virtually no limit to colony size beyond structural integrity of the colony skeleton, as polyps apparently can bud indefinitely.

Comment 4 identified the lack of information on coral population dynamics and connectivity; however, it did not provide any supplemental information, other than for *Acropora*

cervicornis, which will be considered in that species' determination. Therefore, the section above is a summary of the information on coral reproductive life history from the proposed rule as it contributes to the extinction risk analyses for the proposed corals. In our species determinations, we consider life history characteristics that may contribute to extinction risk. For example, species with high recruitment rates or fast growth rates may have the ability to more quickly recover from disturbances. Additionally, long-lived species with large colony size can sustain partial mortality (fission) and still have potential for persistence and regrowth. However, detailed life history information is not available for all of the species considered in this final rule, though it is used when available.

Distribution and Abundance of Reef-Building Corals

The proposed corals are distributed throughout the wider-Caribbean (*i.e.,* the tropical and sub-tropical waters of the Caribbean Sea, western Atlantic Ocean, and Gulf of Mexico; herein referred to collectively as ''Caribbean''), the Indo-Pacific biogeographic region (*i.e.,* the tropical and sub-tropical waters of the Indian Ocean, the western and central Pacific Ocean, and the seas connecting the two in the general area of Indonesia), and the tropical and sub-tropical waters of the eastern Pacific Ocean. In our species determinations, spatial and demographic traits inform our evaluation of a species' current status and its capacity to respond to changing conditions over the foreseeable future. One important demographic trait is absolute abundance, which is a function of local density (either quantitative or qualitative) and range size. Absolute abundance is more informative than a relative description of abundance for corals such as ''rare,'' because even a coral species described as ''rare'' may still have millions of individual colonies or more (*i.e.,* few individuals per unit area spread across a very large area). Similarly, the spatial trait of geographic distributions are not considered on a relative scale (*i.e.,* narrow, moderate, wide as we did in the proposed rule), but rather considered on an absolute scale, which for even the smallest species distribution encompasses millions of square miles.

As described in the Individual Delineation sub-section, determining abundance of the proposed corals presents a unique challenge because corals are clonal, colonial invertebrates, and colony growth occurs by the addition of new polyps. In addition, colonies can exhibit partial mortality in which a subset of the polyps in a colony dies, but the colony persists. Colonial species present a special challenge in determining the appropriate unit to evaluate for status. In addition, new coral colonies, particularly in branching species, can be added to a population by fragmentation (breakage from an existing colony of a branch that reattaches to the substrate and grows) as well as by sexual reproduction (see above, and Fig. 2.2.1 in SRR). Fragmentation results in multiple, genetically identical colonies (ramets) while sexual reproduction results in the creation of new genetically distinct individuals (genotypes or genets).

In the proposed rule, quantitative abundance estimates were available for only a few of the candidate species. In the Indo-Pacific, many reports and long-term monitoring programs describe coral percent cover only to genus level because of the substantial diversity within many genera and difficulties in field identification among congeneric species. In the Caribbean, most of the candidate species are either too few in numbers to document meaningful trends in abundance from literature reports (*e.g., Dendrogyra cylindrus*), or commonly identified only to genus (*Mycetophyllia* and *Agaricia* spp.), or potentially misidentified as another species. At the time of the proposed rule, the only comprehensive abundance data in the Caribbean were for the three *Orbicella* species, partially because they historically made up a predominant part of live coral cover. Even for these species, the time series data are often of very short duration (they were not separated as sibling species until the early 1990s and many surveys continue to report them as ''*Orbicella annularis* complex'') and cover a very limited portion of the species range (*e.g.,* the time series only monitors a sub-section of a single national park). In general, the available quantitative abundance data were so limited or compromised due to factors such as small survey sample sizes, lack of species-specific data, *etc.,* that they were considerably less informative for evaluating the risk to species than other data, and were therefore generally not included as part of the individual species extinction risk evaluations.

Comment 47 provided quantitative abundance estimates from Florida for all of the proposed corals in the Caribbean. In addition, we gathered supplemental information providing quantitative abundance estimates and distribution for individual species in the Caribbean and Indo-Pacific. These data are included and described in the individual extinction risk assessments for those species in the Species-specific Information and Determinations section.

Unlike quantitative abundance data, qualitative abundance characterizations (*e.g.,* rare, common), were available for all species (Veron, 2000), and were considered in the proposed rule's individual species extinction risk evaluations. These estimates are the subjective opinion of the author and are meant to indicate relative abundance between the categories. That is, a rare species has fewer individuals as compared to an uncommon one, and an uncommon species has fewer individuals than a common one. These estimates are also meant to describe the author's opinion of the qualitative abundance of the species throughout its range, and not necessarily an estimate of the abundance at an individual location. Since the proposed rule was published, semi-quantitative (*i.e.,* survey data from 2,984 individual sites) and updated non-quantitative (*i.e.,* the author's subjective estimates covering a full range of habitats and most ecoregions the author has worked in) abundance estimates were provided for 63 of the 65 corals covered in this final rule (Veron, 2014). In addition to the semi-quantitative and non-quantitative estimates, Veron (2014) provided occupancy of each species within the approximately 150 ecoregions he has defined. An ecoregion is defined as an area that is internally cohesive (*i.e.,* areas with similar habitats share similar species complements), but externally distinct from neighboring regions (*http://coral.aims.gov.au/*). Ecoregions are widely used in biogeography because they incorporate a substantial amount of background knowledge, are a good platform for statistical analysis, and allow the pooling and comparison of different datasets from the same ecoregion. Ecoregions are not equal in size and thus occupancy in the same number of ecoregions by two different species does not indicate the same range size. Rather, the number of ecoregions occupied is a good indication of the diversity of habitats and geographic distribution in which a species may be found. These data are included in the individual extinction risk assessments for those species in the Species-specific Information and Determinations section.

As previously described in the Individual Delineation section, clonal, colonial organisms, such as corals, are vastly different in their biology and ecology than vertebrates, which are typically the focus of ESA status reviews. Therefore, concepts and terms that are typically applied to vertebrates have very distinct meanings when

applied to corals. A 'rare' coral may still have millions of colonies as compared to a 'rare' vertebrate, which may only have hundreds of individuals.

Coral Habitats

As summarized in the Coral Reefs, Other Coral Habitats, and Overview of Candidate Coral Environments section of the proposed rule, a ''coral reef'' is a complex three-dimensional structure occurring from the surface to approximately 30 to 40 meters of depth resulting from the skeletal growth of reef-building corals that provides habitat, food, and shelter for numerous marine species. As such, coral reefs foster exceptionally high biodiversity and provide the following essential functional roles: Primary production and recycling of nutrients in relatively nutrient poor (oligotrophic) seas, calcium carbonate deposition yielding reef construction, sand production, modification of near-field or local water circulation patterns, and habitat for secondary production, including fisheries. These functional roles yield important ecosystem services in addition to direct economic benefits to human societies such as traditional and cultural uses, food security, tourism, and potential biomedical compounds. Coral reefs protect shorelines, coastal ecosystems, and coastal inhabitants from high seas, severe storm surge, and tsunamis.

The three broad categories of coral reefs are fringing reefs, barrier reefs, and atolls. Fringing reefs are mostly close to coastlines, and usually have a high component of non-carbonate sediment. Barrier reefs are offshore and are composed of wave-resistant consolidated limestone. Atolls are usually a wall of reefs partially or completely enclosing a central lagoon. There are not sharp differences that clearly mark boundaries between reef types. For example, fringing reefs gradually become barrier reefs with increasing distance from shore. Also, the shape of both barrier reefs and atolls is largely determined by the bathymetry of the substratum, producing many irregularly shaped reefs that are intermediary between the two types. Isolated reefs that do not fit any of these descriptions are referred to as platform reefs (Veron, 2000).

Despite the differences between the reef categories, most fringing reefs, barrier reefs, atolls, and platform reefs consist of a reef slope, a reef crest, and a back-reef, which in turn are typically characterized by distinctive habitats. The reef slope is the seaward side of the coral reef between the reef crest and the deep ocean, and generally includes upper fore-reefs or upper slopes (approximately 5–10 to 10–20 m depth), mid-slopes that often occur as terraces or shelves (approximately 10–20 to 20–30 m depth), and deep fore-reefs, lower slopes, or walls (approximately 30–40 m depth) that transition to mesophotic areas (greater than 30–40 m depth). The reef crest (approximately 0 to 5–10 m depth) forms the boundary between the reef slope and back-reef, and generally includes a consolidated ridge or rim where the waves break, and a lower reef crest on the seaward side of the algal ridge often made of up of buttresses and surge channels (*i.e.,* spur-and-groove structures). The back-reef lies between the reef crest and land (or middle of the lagoon, in the case of atolls). The back-reef generally includes reef flats (approximately 0 to 1–5 m depth) and lagoons (approximately 1–5 to over 30 m depth), interlaced with tide pools, channels, patch reefs, and other features. The characteristics of these habitat types vary greatly by reef categories, locations, latitudes, frequency of disturbance, *etc.,* and there is also much habitat variability within each habitat type, together constituting the habitat heterogeneity of coral reefs, as described further below.

Fringing reefs occur adjacent to coastlines, and subsequently the habitats associated with their reef slopes and back-reefs may be quite different than on barrier reefs or atolls. The reef slopes of many fringing reefs that are protected from strong wave action (*e.g.,* on leeward sides of islands) consist of unconsolidated material sloping gently towards deeper water, while those of fringing reefs in more exposed areas (*e.g.* windward sides of islands) are usually more consolidated. On many fringing reefs, even on the reef slope, natural turbidity and sedimentation may be high due to proximity to land. Fringing reefs typically have narrow back-reefs consisting of a reef flat abutting the reef crest, and possibly tide pools, channels, or small lagoons between the reef flat and shore (Goreau, 1959; Veron, 2000). Barrier reefs typically form tens to hundreds of kilometers from coastlines, their reef slopes are composed of consolidated limestone that may plunge steeply to deeper water, and natural turbidity and sedimentation are very low due to distance from land. Thus the characteristics of their reef slope habitats can be quite different than on fringing reefs. Barrier reefs are exposed to very strong wave action, and their reef crests can vary from high, consolidated algal ridges to unconsolidated shingle ramparts to low and wide indistinct crests. In addition, barrier reefs typically have immense back-reefs consisting of reef flats abutting the reef crest, and large lagoons that may vary from clear and sandy near the reef to turbid and muddy near land, and include various features such as patch reefs and islands (Maxwell, 1968). Atolls occur in oceanic waters far from land, and may be hundreds of kilometers across. Their reef slopes often form vertical walls dropping into abyssal waters, and their back-reefs consist of large, clear lagoons (Veron, 2000; Wells, 1951). Environmental conditions vary greatly between the habitat types found on the reefs slopes, reef crests, and back-reefs of the world's coral reefs. In addition, much variability also occurs within each habitat type. For example, Maxwell (1968) describes six geomorphological types of reef crests, and how the different environmental conditions provide ''coral zones'' unique to each type of reef crest. The physical diversity of coral reef habitat is illustrated by Kuchler (1986), who notes that the scientific literature on the GBR alone used over 20 terms for the reef slope or its habitats, over 50 terms for the reef crest or its habitats, and over 100 terms for the reef flat and lagoon and their habitats.

In conclusion, five main points are important regarding coral habitat on coral reefs (as opposed to non-reefal and mesophotic habitats) for this final rule: (1) Regardless of reef category, reefs generally consist of reef slopes, reef crests, and back-reefs, each of which have distinct habitats, but those habitats can be highly variable between reef types and locations; (2) spatial variability in coral habitat conditions is very high between habitat types, as well as within the habitat types described above (*i.e.,* deep fore-reefs, walls, mid-slopes, upper reef slopes, lower reef crests, algal ridges, reef flats, and lagoons), producing highly variable environmental conditions across both large and small spatial scales at any given point in time; (3) temporal variability in coral habitat conditions is also very high, both cyclically (*e.g.,* from tidal, seasonal, annual, and decadal cycles) and episodically (*e.g.,* storms, temperature anomalies, *etc.*); (4) together this spatial and temporal variability in environmental conditions across multiple scales produces the very high habitat heterogeneity of coral reefs; and (5) while most coral species in this final rule are more common in certain reef habitat types, they are typically found in many different habitat types.

Reef-building corals have specific habitat requirements, including hard substrate, narrow mean temperature

range, adequate light, and adequate water flow. These habitat requirements most commonly occur on the shallow tropical and subtropical coral reefs described above, but also occur in non-reefal and mesophotic areas. All of the proposed species require hard substrates. Thus, in this final rule, ''non-reefal habitats'' refers to hard substrates where reef-building corals can grow, including marginal habitats where conditions prevent reef development (*e.g.,* turbid or high-latitude or upwelling-influenced areas) and recently available habitat (*e.g.,* lava flows). The term ''mesophotic habitats'' refers to hard substrates deeper than 30 m. Coral reefs, non-reefal areas, and mesophotic areas are not necessarily sharply delineated from one another, thus one may gradually blend into another. We anticipate the total area of non-reefal and mesophotic habitats is greater than the total area of shallow coral reef habitats within the ranges of the corals in this final rule.

Comments 6 and 7 suggested that we did not consider non-reefal habitats and mesophotic habitats adequately in our proposed rule. However, these comments did not provide any new or supplemental information on how to interpret the importance of these habitats in our extinction risk analysis. Comment 7 includes two studies that provide supplemental information on the extent of mesophotic reefs. In addition to the public comment received on the diversity and complexity of coral reef habitats, supplemental information has become available on non-reefal and mesophotic habitats since the publication of the proposed rule. The following sub-sections on non-reefal and mesophotic habitats are intended to illustrate the diversity of reef-building coral habitats, but are not intended to provide an exhaustive list of them.

Non-reefal habitats include marginal habitats (Perry and Larcombe, 2003), as well as newly available natural habitats such as the hard substrates created by lava flows (Grigg and Maragos, 1974), tsunamis (scoured bedrock or transported boulders (Goto *et al.,* 2010)), or other episodic processes. Non-reefal habitats are defined as areas where environmental conditions prevent reef formation but reef-building corals are present. Marginal habitats are much more common than newly-available natural habitats. Marginal habitats are very diverse, as they occur where seawater temperatures or light levels are sub-optimal (*i.e.,* inadequate for high skeletal growth but still allowing reef-building corals to survive), and thus include environments that are turbid (Blakeway *et al.,* 2013; Browne *et al.,* 2012), very warm (Riegl and Purkis, 2012; Riegl *et al.,* 2011), or cold because of high latitude (Dalton and Roff, 2013; Lybolt *et al.,* 2011) or upwelling (Alvarado *et al.,* 2011; Manzello *et al.,* 2008), and other environments (Couce *et al.,* 2012; Done, 1982; Perry and Larcombe, 2003). Some coral species can also live on soft substrates, such as *Manicina areolata* in the Caribbean, staghorns (*Acropora*) that must begin on hard substrate but can then grow over soft substrates, and *Catalaphyllia jardini,* which is common in some soft substrates in Australia. Such habitat is not necessarily indicative of low-diversity coral assemblages, as shown by turbid sites, which have been documented to support over 160 species of reef-building corals (Perry and Larcombe, 2003), and fresh lava flows, which have been documented to support fully recovered coral communities only 20 years after the flow (Grigg and Maragos, 1974). Marginal habitats expands the diversity of environmental conditions that can support some reef-building corals and therefore may provide refugia from some threats affecting shallow coral reef habitat, as described in the Spatial and Temporal Refugia sub-section below.

Since 2012, research on mesophotic habitats has demonstrated that many reef-building corals have greater depth distributions than previously reported. Twenty-two of the proposed species have been reported from mesophotic depths (*i.e.,* 30 m or more) and several more reported at 25 m. For other species, their biogeographic ranges may be underestimated due to lack of mesophotic exploration. These studies demonstrate that some species in shallow coral reef habitats readily extend to mesophotic depths if water clarity and temperatures remain favorable (Kahng *et al.,* 2014). For example, investigations in American Samoa (Bare *et al.,* 2010), the Hawaiian Archipelago (Kahng *et al.,* 2010; Rooney *et al.,* 2010), and the Mariana Archipelago (Rooney *et al.,* 2012), have revealed extensive mesophotic coral reef ecosystems. While classically considered to be limited to 100 m, mesophotic reefs have been observed as deep as 130 m in some of these areas, including at depths in excess of 150 m in the Au'au Channel of Hawaii (Blyth-Skyrme *et al.,* 2013). Likewise, investigations on Australia's GBR found extensive mesophotic habitats both along the continental shelf-edge and on submerged reefs inside the lagoon of the GBR, both of which support previously unknown communities of reef-building corals (Bridge *et al.,* 2012a; Bridge and Guinotte, 2013; Bridge *et al.,* 2012b). As noted in one of these recent papers, several coral species (including *Acropora aculeus, A. jacquelineae,* and *A. tenella*) are common and geographically widespread in deeper waters (30–60 m; Bridge *et al.,* 2013b). Other recent studies in Curaçao (Bongaerts *et al.,* 2013), Bermuda (Locke *et al.,* 2013), and Hawaii (Luck *et al.,* 2013) reveal extensive mesophotic habitats and reef-building coral communities. These studies expand the known potential habitats for reef-building corals, but species diversity and abundances have not been well-documented due to the relative inaccessibility of these habitats to divers.

In summary, the magnitude of habitats potentially supporting reef-building coral species is extremely large, and much larger than the 0.2 percent of the marine environment provided in the SRR. Globally, some reef-building corals can occur in shallow coral reef, non-reefal, and/or mesophotic habitats. These three types of general habitats combined provide the overall physical environment of many species, and supplemental information on non-reefal and mesophotic habitats indicates that their magnitude is larger than previously understood.

Inter-Basin Comparisons

As described in the proposed rule, the Caribbean and Indo-Pacific basins contrast greatly both in size and in condition. The Caribbean basin is geographically small and partially enclosed, has high levels of connectivity, and has relatively high human population densities. The wider-Caribbean occupies five million square km of water and has approximately 55,000 km of coastline, including approximately 5,000 islands. Shallow coral reefs occupy approximately 25,000 square km (including ≈2,000 square km within U.S. waters), or about 10 percent of the total shallow coral reefs of the world. The amount of non-reefal and mesophotic habitat that could potentially be occupied by corals in the Caribbean is unknown, but is potentially greater than the area of shallow coral reefs in the Caribbean.

The Caribbean region has experienced numerous disturbances to coral reef systems throughout recorded human history. Fishing has affected Caribbean reefs since before European contact, and continues to be a threat. Beginning in the early 1980s, a series of basin-scale disturbances has led to altered community states, and a loss of

resilience (*i.e.,* inability of corals and coral communities to recover after a disturbance event). Massive, Caribbean-wide mortality events from disease conditions of both the keystone grazing urchin *Diadema antillarum* and the dominant branching coral species *Acropora palmata* and *Acropora cervicornis* precipitated widespread and dramatic changes in reef community structure. None of the three important keystone species (*Acropora palmata, Acropora cervicornis,* and *Diadema antillarum*) have shown much recovery over decadal time scales. In addition, continuing coral mortality from periodic acute events such as hurricanes, disease outbreaks, and bleaching events from ocean warming have added to the poor state of Caribbean coral populations and yielded a remnant coral community with increased dominance by weedy brooding species, decreased overall coral cover, and increased macroalgal cover. Additionally, iron enrichment in the Caribbean may predispose the basin to algal growth. Further, coral growth rates in the Caribbean have been declining over decades.

Caribbean-wide meta-analyses suggest that the current combination of disturbances, stressful environmental factors such as elevated ocean temperatures, nutrients and sediment loads, and reduced observed coral reproduction and recruitment have yielded a loss of resilience, even to natural disturbances such as hurricanes.

Coral cover (percentage of reef substrate occupied by live coral) across the region has declined from approximately 50 percent in the 1970s to approximately 10 percent in the early 2000s (*i.e.,* lower densities throughout the range, not range contraction), with concurrent changes between subregions in overall benthic composition and variation in dominant species. However, supplemental information suggests that this estimate of coral cover decline in the Caribbean is an oversimplification. In the Caribbean, quantitative surveys of a few dozen sites from before the early 1980s suggest the regional mean for coral cover was 30–40 percent around 1980 (Gardner *et al.,* 2003; Schutte *et al.,* 2010). Supplemental information based on more complete sampling effort (*i.e.,* meta-analysis of 35,000 quantitative reef surveys from 1969 to 2012) indicates higher levels of ''current'' percent live coral cover in the Caribbean than described in the proposed rule. For example, a recent study found that average coral cover throughout the wider-Caribbean declined by 66 percent from an overall average of 41 percent between 1969–1983 to 14 percent today, slightly higher than the 10 percent reported earlier. The earlier reports were based on less thorough sampling of the available data, and were also dominated by data from the Florida Keys, U.S. Virgin Islands, and Jamaica, which may not be representative of the entire Caribbean (Jackson *et al.* 2014).

In conclusion, the supplemental information regarding live coral cover does not dispute that there has been a long-term overall decline in live coral cover in the Caribbean and that those declines are likely ongoing and likely to continue in the future as a result of a multitude of global and local threats at all spatial scales. These wide-scale changes in coral populations and communities have affected habitat complexity and may have already reduced overall reef fish abundances. These trends are expected to continue. However, as the above information illustrates, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that may not be indicative of conditions throughout the basin.

Ocean basin size and diversity of habitats (*e.g.,* reef-flats, forereef, mesophotic, non-reefal), as well as some vast expanses of ocean area with only very local, spatially-limited, direct human influences, have provided substantial buffering of Indo-Pacific corals from many of the threats and declines manifest across the Caribbean. The Indo-Pacific (Indian and Pacific Oceans) is enormous and hosts much greater coral diversity than the Caribbean region (~700 coral species compared with 65 coral species). The Indo-Pacific region encompasses the tropical and sub-tropical waters of the Indian Ocean, the western and central Pacific Ocean, and the seas connecting the two in the general area of Indonesia. This vast region occupies at least 60 million square km of water (more than ten times larger than the Caribbean), and includes 50,000 islands and over 40,000 km of continental coastline, spanning approximately 180 degrees of longitude and 60 degrees of latitude. There are approximately 240,000 square km of shallow coral reefs in this vast region, which is more than 90 percent of the total coral reefs of the world. In addition, the Indo-Pacific includes abundant non-reefal habitat, as well as vast but scarcely known mesophotic areas that provide coral habitat. The amount of non-reefal and mesophotic habitat that could potentially be occupied by corals in the Indo-Pacific is unknown, but is likely greater than the area of shallow coral reefs in the Indo-Pacific (NMFS, 2012b; SIR Section 4.3).

While the reef communities in the Caribbean may have poor resilience, the reefs in the central Pacific (*e.g.,* American Samoa, Moorea, Fiji, Palau, and the Northwestern Hawaiian Islands) appear to remain much more resilient despite major bleaching events from ocean warming, hurricanes, and crown-of-thorns seastar predation outbreaks. That is, even though the reefs have experienced significant impacts, corals have been able to recover, as described below. Several factors likely result in greater resilience in the Indo-Pacific than in the Caribbean: (1) The Indo-Pacific is more than 10-fold larger than the Caribbean, including many remote areas; (2) the Indo-Pacific has approximately 10-fold greater diversity of reef-building coral species than the Caribbean; (3) broad-scale Caribbean reef degradation likely began earlier than in the Indo-Pacific; (4) iron enrichment in the Caribbean may predispose it to algal growth versus lack of broad-scale iron enrichment in the Indo-Pacific; (5) there is greater coral cover on mesophotic reefs in the Indo-Pacific than in the Caribbean; and (6) there is greater resilience to algal phase shifts in the Indo-Pacific than in the Caribbean.

Even given the relatively higher resilience in the Indo-Pacific as compared to the Caribbean, one meta-analysis of overall coral status throughout the Indo-Pacific indicates that substantial loss of coral cover (*i.e.,* lower densities throughout the range, but not range contraction) has already occurred in most subregions. As of 2002–2003, the Indo-Pacific had an overall average of approximately 20 percent live coral cover, down from approximately 50 percent since the 1970s. However, supplemental information refines this estimate. Data from 154 surveys of reefs across the Pacific performed between 1980 and 1982 had mean live coral cover of 42.5 percent (Bruno and Selig, 2007). Coral cover in the Indian Ocean declined from approximately 40 percent prior to the 1998 bleaching event to approximately 22 percent; subsequently, mean coral cover increased to approximately 30 percent by 2005 (Ateweberhan *et al.,* 2011) Live coral cover likely had already declined in all regions before 1980, but region-wide quantitative data is generally lacking. For example, local surveys before 1980 from several parts of the Indo-Pacific documented live coral cover of 50 to 70 percent (Gomez *et al.,* 1981).

Unlike the Caribbean, no recent region-wide reports of current, overall live coral cover are available for the Indo-Pacific as a whole. However,

recent reports from parts of the region have found current live coral cover higher than the 20 percent for the region reported earlier, and stable or increasing live coral cover. For example, monitoring data collected annually from 47 sites on the GBR from 1995 to 2009 averaged 29 percent live coral cover. More importantly, this study found no evidence of consistent, system-wide decline in coral cover since 1995. Instead, fluctuations in coral cover at sub-regional scales (10–100 km), driven mostly by changes in fast-growing Acroporidae, occurred as a result of localized disturbance events and subsequent recovery (Osborne *et al.,* 2011). However, another recent study based on 2,258 surveys of 214 GBR reefs over 1985–2012, showed declines in live coral cover from 28 percent to 14 percent, a loss of half of the initial coral cover. In the Philippines, a study of 317 sites from 1981 to 2010 averaged 36 percent live coral cover, and showed an overall increase from 29 percent in 1981 to 37 percent in 2010 (Magdaong *et al.,* 2013). A study of 366 sites from 1977 to 2005 in the Indian Ocean documented large initial decline from approximately 35 percent live coral cover to approximately 15 percent at most sites following the 1998 bleaching event, followed by partial recovery to approximately 25 percent, and then stability of live coral cover (Ateweberhan *et al.,* 2011). Likewise, a study in Western Australia from 2005 to 2009, following the 2005 bleaching event, documented declines to 10 percent live coral cover as a result of the event and then subsequent recovery to 30 percent (Ceccarelli *et al.,* 2011). A study in the Andaman Islands from 2010 to 2012 following the 2010 bleaching also documented substantial recovery of live coral cover (Marimuthu *et al.,* 2012; Osborne *et al.,* 2011).

These recent studies illustrate the dynamic nature of live coral cover, especially recovery from the 1998 bleaching event. It is likely that the overall basin-wide live coral cover in both the Caribbean and the Indo-Pacific has declined over decadal and centurial time scales, but with fluctuations on shorter time scales and within smaller geographic scales. This is significant because coral decline doesn't occur in every location at every time scale. Rather, there are periods of decline and recovery over shorter time periods in various locations throughout the larger basins. This has broad implications when analyzing the temporal and spatial elements of a coral species' extinction risk.

Disagreements over the methods of how to measure live coral cover have led to different results in studies measuring changes in live coral cover over time. For example, one study (Bellwood *et al.,* 2004) reported approximately 50 percent declines in live coral cover on GBR over the last several decades, but another study disagreed (Sweatman *et al.,* 2011), making the case for considerably smaller declines, using a different method. Both studies provided detailed support for their methods and findings (Hughes *et al.,* 2011; Sweatman and Syms, 2011). Studies supporting both results have since been published (De'ath *et al.,* 2012; Osborne *et al.,* 2011), and such disagreements illustrate the complexity of determining trends in live coral cover.

In conclusion, the supplemental information regarding live coral cover does not dispute that there has been a long-term overall decline in live coral cover in both the Caribbean and Indo-Pacific, and that those declines are likely ongoing and likely to continue in the future due to a multitude of global and local threats at all spatial scales. Further, both basins have experienced conditions leading to coral mortality and prevention of full recovery; however, the Caribbean has been more greatly impacted. While basin-wide averages are useful for large-scale comparisons, they do not describe conditions at finer, regional scales. For example, decreases in overall live coral cover have occurred since 2002 in some areas, such as on the GBR, while increases have occurred in other areas, such as in American Samoa. As the supplemental information further illustrates, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Live coral cover trends are complex, dynamic, and highly variable across space and time. Thus their interpretation requires the appropriate spatial-temporal context (*i.e.,* entire range or each species now and through foreseeable future), and an understanding of the various physical, biological, and ecological processes at work within coral communities and coral reef ecosystems.

In the proposed rule, we provided a summary of conditions in the eastern Pacific to illustrate the contrast to the conditions in Indo-Pacific and Caribbean. This description was relevant because the range of one of our candidate species, *Pocillopora elegans* (eastern Pacific), was restricted to the eastern Pacific. Because we are no longer considering the three proposed *Pocillopora* species in this final rule, a detailed description of the eastern Pacific is not necessary.

Spatial and Temporal Refugia

Comment 7 suggested that certain habitats (*e.g.,* mesophotic) may provide refugia for shallow water corals. Therefore, we provide the following discussion of temporal and spatial refugia. Some of these concepts were discussed in the Threats Evaluation section of the proposed rule as they relate to exposure of corals to the various threats and how exposure influences extinction risk. The above information on coral habitats illustrates the enormous heterogeneity of the environments that many of these species inhabit. Each species occurs in a patchwork of variable habitat conditions at any given point in time, with certain combinations of variables at certain locations producing favorable conditions that may provide refugia from threats such as ocean warming. Habitat conditions are highly variable over time in different ways, including cyclically (*e.g.,* from tidal, seasonal, annual, and decadal cycles), episodically (*e.g.,* storms, temperature anomalies, *etc.*), and linearly (*e.g.,* gradual thermal regime changes, which will both degrade and improve habitat, depending on location and initial conditions). The dynamic nature of reef-building coral habitats may provide refugia for some corals from some threats, both spatially and temporally (Fine *et al.,* 2013; McClanahan *et al.,* 2011; Riegl and Piller, 2003).

Some habitats have natural features that reduce stress from extremely high temperatures or light levels (*i.e.,* the most common causes of coral bleaching), which may provide spatial refugia for some reef-building coral species from ocean warming and other threats. Deeper water may be cooler depending on the amount of mixing, and is exposed to less light (*i.e.,* irradiance). Mesophotic habitats are very extensive, and recent investigations provide evidence that mesophotic habitat functions as refugia for some reef-building corals. A review of mesophotic habitat on Australia's GBR concluded that reef-building corals in mesophotic habitat are less likely to be affected by warming-induced bleaching events than their counterparts on nearby shallow reefs (Bridge *et al.,* 2012a). Mesophotic habitat may also be important for recovery of corals disturbed coral reefs by providing sources of propagules to recolonize shallow reefs following disturbances (Bridge and Guinotte, 2013). A 37-year record from the eastern Pacific across the two most severe El Niño events on

record (1982–83 and 1997–98) shows how an exceptionally thermally-sensitive reef-building fire coral, *Millepora intricata,* twice survived catastrophic bleaching in a deeper water refuge (>11 m depth). During both events, *M. intricata* was extirpated across its range in shallow water but showed recovery within several years, while two other fire corals without deep-water populations were driven to regional extinction (Smith *et al.,* in press).

The refuge value of mesophotic habitats is limited, however. Only about one-quarter of all reef-building coral species occur at mesophotic depths (Bongaerts *et al.,* 2012) and only 22 of our proposed species. Also, there is limited connectivity between mesophotic and shallow coral habitats, at least for some species, suggesting that the actual likelihood of mesophotic corals repopulating shallow reef habitats is low for those species. For example, genetic connectivity between mesophotic and shallow populations is high in *Seriatopora hystrix* on the GBR (van Oppen *et al.,* 2011) and *Millepora intricata* in the eastern Pacific (Smith *et al.,* in press), but low for *Montastraea cavernosa* in the Caribbean (Brazeau *et al.,* 2013).

Marginal habitats are also extensive, and recent investigations provide evidence that marginal habitat also functions as refugia for some reef-building corals. Marginal habitats include turbid (Blakeway *et al.,* 2013; Browne *et al.,* 2012), very warm (Riegl and Purkis, 2012; Riegl *et al.,* 2011), cold (Dalton and Roff, 2013; Lybolt *et al.,* 2011), soft substrate, and other environments (Couce *et al.,* 2012; Done, 1982; Perry and Larcombe, 2003) with sub-optimal coral growth conditions. A study of future coral habitat suitability under ocean warming and acidification suggests that marginal habitats may provide important refugia for some reef-building corals (Couce *et al.,* 2013b), though not all coral species can survive in these habitats. The study found that the IPCC AR4's higher emission scenarios are all likely to result in: (1) Range expansion at the high-latitude boundaries; (2) no decreased suitability in currently marginal eastern Equatorial Pacific locations as well as in the Atlantic generally; and (3) severe temperature-driven impacts in the western Equatorial Pacific (Coral Triangle) and surrounding regions. These findings led to the conclusion that marginal habitat is likely to function as a patchwork of refuge habitats for some reef-building corals in both the Indo-Pacific and Atlantic as ocean warming and acidification increase over the twenty-first century.

Aside from mesophotic and marginal habitats, other types of habitats may provide refuge for reef-building corals from ocean warming and other threats. Some of these have long been known to reduce thermal stress, such as those habitats with highly-fluctuating conditions, strong currents from wind or tides, and shading from frequent cloud cover or complex bathymetry, as described in the proposed rule and supporting documents. Supplemental information suggests other oceanographic features may also provide refuge from ocean warming both currently and the foreseeable future, such as: (1) Large-scale upwelling in both the Pacific (Karnauskas and Cohen, 2012) and Caribbean (Bayraktarov *et al.,* 2012); (2) the similar but smaller-scale phenomenon of internal tidal bores that transport cooler, deeper water to warmer, shallower areas (Storlazzi *et al.,* 2013); (3) and the wakes of relatively cool water left by the passage of tropical cyclones (Carrigan, 2012). Most of the refugia described above are with regard to ocean warming, but some of these habitat types provide refugia potential from ocean acidification, such as highly-fluctuating habitats which limit pH minima via tidal flux (Shaw *et al.,* 2012), and from disease and sedimentation, such as high-energy habitats which provide flushing that reduces conditions conducive to disease and removes sediment. Seagrass beds provide beneficial changes in ocean chemistry to seawater on adjacent reefs, providing local refugia to ocean acidification (Manzello *et al.,* 2012). Depth also provides some refugia potential from disease, as most studies show a negative correlation between depth and coral disease incidence. However, some studies show no such correlation, and disease incidence can be comparable between mesophotic and shallow depths (Brandt *et al.,* 2012).

Thermal regime changes from ocean warming will have opposite effects on habitat, depending on location: In locations already near the thermal maxima of reef-building corals, warming will degrade habitat, but in locations currently too cool for these species, warming will improve habitat, if other habitat features conducive to reef growth are also present, such as hard substrate and appropriate light and water chemistry conditions. Geological evidence from past global warming periods shows a pattern of poleward expansion of some reef-building coral ranges, coupled with decline in equatorial areas (Kiessling *et al.,* 2012) and expansion into temperate areas (Woodroffe *et al.,* 2010). Predicted ocean warming in the twenty-first century is expected to result in a similar pattern of poleward expansion, thus newly-colonized areas may provide temporary refugia for some species (van Hooidonk *et al.,* 2013b). For example, models suggest that such expansion of reef-building corals could occur at the rate of 1–4 km per year in Japan (Yara *et al.,* 2011). As temperatures increase to the optimal range for reef-building corals in these northerly and southerly areas, however, the simultaneous increase in ocean acidification may negate the suitability of these areas (van Hooidonk *et al.,* 2014; Yara *et al.,* 2012). While it may appear that there is no long-term, large-scale refugia from both ocean warming and ocean acidification (van Hooidonk *et al.,* 2014), on a finer regional and/or reef-scale, there is still a large amount of refugia in the form of heterogeneous habitat, including mesophotic, non-reefal, and marginal habitats, that provide a buffer to corals from threats into the foreseeable future.

Corals and Coral Reefs Conclusion

The above general information on reef-building coral biology and habitat leads to several important overall points that apply both currently and over the foreseeable future. With regard to reef-building coral biology, first, delineations between individual colonies of the same species, and between species, can be highly uncertain, creating ambiguity with regard to the status of species—specific sources of uncertainty include unclear individual delineations, taxonomic uncertainty, and species identification uncertainty. Thus, in our species determinations we use the physiological colony to inform how we estimate abundance of a coral species because that is how field surveys estimate coral abundance. Using the physiological colony to estimate abundance in the final rule does not change how we estimated abundance in the proposed rule, in which we also relied on information that uses the physiological colony to report abundance estimates. If we have new or supplemental information on the effective population size (*e.g.,* proportion of clonality) for a species, that information is also considered. Second, while corals can reproduce both sexually and asexually, abundance estimates are based solely on the physical number of coral colonies that does not recognize mode of reproduction. Dispersal and recruitment patterns are highly variable across space and time, leading to complex and poorly understood population dynamics and

connectivity. In our species determinations, we consider life history characteristics that may contribute to extinction risk. For example, species with high recruitment rates or fast growth rates may have the ability to more quickly recover from disturbances. Additionally, long-lived species with large colony size can sustain partial mortality (fission) and still have potential for persistence and regrowth. Third, all species considered in this final rule occur in multiple habitat types and have considerable distributions that encompass at least thousands of islands and multiple habitat types, which influences absolute abundances—the absolute distributions and absolute abundances of these species are key components of their vulnerability to extinction. Therefore, in our species determinations, the spatial and demographic traits of absolute abundance and absolute distribution inform our evaluation of a species' current status and its capacity to respond to changing conditions over the foreseeable future.

Additionally, because of variability between species, some generalities cannot be assumed to apply equally to each species. Therefore, in our species determinations we consider the complex nature of coral biology and assume that for all species, responses to threats will be variable between individual coral colonies and even between different portions of the same colony. The best available species-specific information for each of the 65 species is provided in the Species-specific Information and Determinations sub-sections below.

With regard to reef-building coral habitat, first, the heterogeneity of reef-building coral habitat varies greatly both spatially and temporally. That is, the habitat of a given species varies spatially (*i.e.,* even the smallest ranges of the species included in this final rule encompass thousands of islands and multiple habitat types) and temporally (*i.e.,* varies over time in response to disturbances and recoveries). Second, some habitat types are understudied (*e.g.,* mesophotic and marginal) so data about their contribution to the distribution and abundance of individual coral species are limited, as well as the possibility of refugia from particular threats being underestimated. Third, a diversity of habitats likely helps some species capacity to acclimatize and adapt to changing conditions, especially extreme habitats. For example, while some colonies die during the stressful conditions common to extreme habitats, other colonies at the same reef survive and acclimatize, potentially leading to adaptation. The magnitude and diversity of reef-building coral habitats creates high physical heterogeneity across the ranges of these species, providing habitat refugia from threats. Some of these refuge habitats may already be occupied by the species; others could become occupied as their suitability changes, assuming the species are able to reproduce and successfully recruit into these areas. The habitat heterogeneity and refugia lead to variable micro-climates at a reef scale that leads to variable responses by reef-building corals to threats, both spatially and over time, which adds complexity to assessing the status of species in a worsening environment.

Overall, in our species determinations, we recognize that the exposure and response of a coral species to global threats varies spatially and temporally based on variability in the species' habitat and distribution. All species considered in this final rule occur in multiple habitat types, or reef environments, and have distributions that encompass diverse physical environmental conditions that influence how that species responds to global threats. As such, the concept of heterogeneous habitat influences extinction risk for all species in this final rule because each species experiences a wide variety of conditions throughout its range which allows for variable responses to global and local threats.

Threats Evaluation

Section 4(a)(1) of the ESA and NMFS' implementing regulations (50 CFR 424) state that the agency must determine whether a species is endangered or threatened because of any one or a combination of five factors: (A) Present or threatened destruction, modification, or curtailment of habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. In the proposed rule, our evaluation of the five factors was informed by the SRR and SIR for factors A–C and E; and the Final Management Report for factor D. We identified factors acting directly as stressors to the 82 coral species (*e.g.,* sedimentation and elevated ocean temperatures) as distinct from the sources responsible for those factors (*e.g.,* land management practices and climate change) and qualitatively evaluated the impact each threat has on the candidate species' extinction risk over the foreseeable future.

The proposed rule qualitatively ranked each threat as high, medium, low, or negligible (or combinations of two; *e.g.,* ''low-medium'') importance in terms of their contribution to extinction risk of all coral species across their ranges. These qualitative rankings considered: (1) The severity of the threat; (2) the geographic scope of the threat; (3) the level of certainty that corals in general (given the paucity of species-level information) are affected by each threat; (4) the projections of potential changes in the threat; and (5) the impacts of the threat on each species. Global climate change directly influences two of the three highest ranked threats, ocean warming and ocean acidification, and indirectly (through ocean warming) influences the remaining highest ranked threat, disease.

We identified nine threats (see Table 1) as posing either current or future extinction risk to the proposed corals. However, the SRR identified 19 threats that affect corals. The ten threats not included in Table 1 did not rank highly in their contribution to extinction risk, although they do adversely affect the species. Ocean warming, ocean acidification, and disease are overarching threats of high or medium-high importance when evaluating the extinction risk of the proposed species. These impacts are currently occurring, and are expected to worsen, posing increasingly severe effects on the species considered in this final rule. Other threats are of medium or medium-low importance when evaluating extinction risk because their effects are largely indirect and/or local to regional in spatial scale. These include trophic effects of fishing, sea-level rise, and water quality issues related to sedimentation and nutrients. The remaining threats can be locally acute, but because they affect limited geographic areas, they are of low importance when evaluating extinction risk. Examples in this category are predation or collection for the ornamental trade industry. These threats are more significant to certain species, such as those with naturally low abundance and/or those at severely depleted population levels. However, none of the species in this final rule can be characterized as such.

Table 1. The nine most important threats contributing to extinction risk for corals in general and ordered according to importance. The threat is paired with its corresponding ESA section 4 factor in the last column.

Threat	Importance	Section 4 factor
Ocean Warming	High	E.
Disease	High	C.
Ocean Acidification	Medium-High	E.
Trophic Effects of Fishing	Medium	A.
Sedimentation	Low-Medium	A and E.
Nutrients	Low-Medium	A and E.
Sea-Level Rise	Low-Medium	A.
Predation	Low	C.
Collection and Trade	Low	B.

Some comments (*e.g.,* Comment 26) suggested that local threats, such as sedimentation, are more important locally to species' extinction risk than the higher rated threats. In the proposed rule, we acknowledged that some of the local threats have been the cause of mass coral mortality in particular locations. Further, supplemental information provides evidence that local threats, such as overfishing and disease, have actually been more significant drivers of past coral reef species decline, particularly in the Caribbean (Jackson *et al.,* 2014). However, we must evaluate all threats that pose an extinction risk to the proposed species over the foreseeable future. Given the predicted impacts of climate-related threats over the foreseeable future, we maintain the relative importance ranking of the threats to reef-building corals generally. However, we acknowledge that lower importance threats also pose significant risk to individual species in certain locations.

Foreseeable Future

In the proposed rule, we established that the appropriate period of time corresponding to the foreseeable future is a function of the particular types of threats, the life-history characteristics, and the specific habitat requirements for the coral species under consideration. The timeframe corresponding to the foreseeable future takes into account the time necessary to provide for the conservation and recovery of each threatened species (*e.g.,* recruitment rate, growth rate, *etc.*) and the ecosystems upon which they depend, but is also a function of the reliability of available data regarding the identified threats and extends only as far as the data allow for making reasonable predictions about the species' response to those threats. As is discussed further in the Foreseeable Future and Current and Future Environmental Conditions subsections of the Risk Analysis section below, the period of time over which individual threats and responses may be projected varies according to the nature of the threat and the type of information available about that threat and the species' likely response. As described below, the more vulnerable a coral species is to the high importance threats (*i.e.,* ocean warming, diseases, ocean acidification), the more likely the species is at risk of extinction, either now or within the foreseeable future. The threats related to global climate change (*e.g.,* bleaching from ocean warming, ocean acidification) pose the greatest potential extinction risk to corals and have been evaluated with sufficient certainty out to the year 2100.

Comment 38 provides a summary of the comments we received on the determination of foreseeable future in the proposed rule and supporting documents as extending out to the year 2100. Many comments criticized the use of 2100 because they considered it to be too far into the future. We do not agree that 2100 is too far in the future to be considered foreseeable as it pertains to projections regarding climate-change related threats. As described in detail in the Global Climate Change—General Overview section, the IPCC Fifth Assessment Report (AR5), Climate Change 2013: The Physical Science Basis (IPCC, 2013), commonly referred to as the Working Group I Report (WGI), is a continuation of AR4. Most of AR5 WGI's models also use 2100 as the end-point (some models go beyond 2100) and the supplemental information included in AR5 reinforces our original basis for defining the foreseeable future as the period of time from the present to the year 2100 (IPCC, 2013). That is, the foreseeable future is not defined as the year 2100, but rather as the time period from the present to the year 2100, with increasing uncertainty in climate change projections over that time period. So while precise conditions during the year 2100 are not reasonably foreseeable, the general trend in conditions during the period of time from now to 2100 including the period 2081 to 2100 is reasonably foreseeable as a whole, although less so through time. Because the time period of the present to the year 2100 is strongly supported as a reasonably foreseeable timeframe in the climate science projections in AR5's WGI, and because the climate-related impacts to coral reefs may be substantial within that timeframe, our conclusion that 2100 is the appropriate timeframe for purposes of analyzing climate change-related threats remains unchanged.

Nine Most Important Threats to Reef-Building Corals

As described above and shown in Table 1, we considered nine threats to be the most important to the current or expected future extinction risk of reef-building corals: Ocean warming, disease, ocean acidification, trophic effects of reef fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. Vulnerability of a coral species to a threat is a function of susceptibility and exposure, considered at the appropriate spatial and temporal scales. In this finding, the spatial scale is the current range of the species, and the temporal scale is from now through the foreseeable future. Susceptibility refers to the response of coral colonies to the adverse conditions produced by the threat. Susceptibility of a coral species to a threat is primarily a function of biological processes and characteristics, and can vary greatly between and within taxa. Susceptibility depends on direct effects of the threat on the species, and it also depends on the cumulative (*i.e.*, additive) and interactive (*i.e.*, synergistic or antagonistic) effects of multiple threats acting simultaneously on the species. Exposure refers to the degree to which the species is likely to be subjected to the threats throughout its range, so the overall vulnerability of a coral species to threats depends on the proportion of colonies that are exposed to the threats. Thus, the exposure of a species to threats, on a range-wide scale, is a function of physical processes and characteristics that affect the frequency or degree to which individual colonies experience the threats and the ability of its spatial and demographic traits to affect its overall vulnerability. A species may not necessarily be highly vulnerable to a threat even when it is highly susceptible to the threat, if exposure is low over the appropriate

spatial and temporal scales. Consideration of the appropriate spatial and temporal scales is particularly important, because of potential high variability in some threats over the large spatial scales. The nine most important threats are summarized below, including general descriptions of susceptibility and exposure. Species-specific threat susceptibilities are described in the Species-specific Information and Determinations section.

Global Climate Change—General Overview

Several of the most important threats contributing to the extinction risk of corals are related to global climate change. The main concerns regarding impacts of global climate change on coral reefs generally, and on the proposed corals in particular, are the magnitude and the rapid pace of change in GHG concentrations (*e.g.*, carbon dioxide (CO_2) and methane) and atmospheric warming since the Industrial Revolution in the mid-19th century. These changes are increasing the warming of the global climate system and altering the carbonate chemistry of the ocean (ocean acidification), which affects a number of biological processes in corals, including secretion of their skeletons. The description and analysis of global climate change in the proposed rule and supporting documents were based largely on the IPCC AR4, The Physical Science Basis (IPCC, 2007) and supporting literature. Supplemental information gathered during the public engagement period shows that global temperatures continue to increase and that temperature patterns differ regionally.

As summarized in Comment 11, we received many comments on our analysis of global climate change in the proposed rule. Some commenters asserted that we did not adequately portray the level of uncertainty associated with the available climate change models. Others provided information that global GHG emissions and global temperatures continue to rise unabated. Additionally, significant supplemental information has become available on global climate change since the proposed rule, specifically, AR5's WGI (IPCC, 2013), and its companion report, Climate Change 2014: Impacts, Adaptation, and Vulnerability, commonly referred to as the Working Group II Report (WGII; IPCC, 2014).

The IPCC has summarized the major sources of uncertainty associated with AR5's WGI projections of global climate change as: (1) The projected rate of increase for GHG concentrations; (2) strength of the climate's response to GHG concentrations; and (3) large natural variations. The warming rate slow-down (or ''hiatus'' discussed in the Threats Evaluation—Ocean Warming section) since 1998 is an example of a large natural variation that was not predicted by the models at that time. However, AR4's projections are built on scientifically sound principles, and they fairly simulate many large-scale aspects of present-day conditions, and thereby provided the best available information on climate change at the time the proposed rule was published. Overall uncertainty is not necessarily any greater in AR5 than in AR4, but rather the uncertainty is understood better and expressed more clearly in AR5's WGI (IPCC, 2007; IPCC, 2013; Knutti and Jan Sedlácek, 2012). AR5's WGI represents the largest synthesis of global climate change physical science ever compiled, and a substantial advance from AR4. WGI is divided into four sections that examine observations, drivers, understanding, and projections of changes to the global climate system. The primary results of these four sections relevant to this rule are summarized below; then a summary of the potential impacts to corals resulting from the IPCC climate change scenario that we consider to be the most impactful to corals is provided in the RCP8.5 Projections section below, with a focus on ocean warming and acidification, two of the most important threats to corals.

The first section of WGI considers observations of changes in the climate system, which refers to description of past climate patterns, and the certainty associated with the same. The overall conclusion of this section is that warming of the climate system is unequivocal and since the 1950s, many of the observed changes are unprecedented over decades to millennia. With regard to ocean warming, it is ''virtually certain'' that the upper ocean (0–700 m) warmed from 1971 to 2010. With regard to ocean acidification, it is ''very likely'' that the pH of surface ocean waters has decreased as a result of ocean uptake of anthropogenic CO_2 from the atmosphere. With regard to sea-level rise, it is ''virtually certain'' that the global mean sea level rose by 19 cm from 1901 to 2010 (IPCC, 2013).

The second section of WGI considers drivers of changes in the climate system, which refers to explanations of factors forcing climate patterns. Natural and anthropogenic substances and processes that alter the Earth's energy budget are drivers of climate change. In AR5, radiative forcing (RF, measured in watts per square meter, W/m^2) quantifies energy fluxes caused by changes in these drivers relative to the year 1750. Increasing RF leads to surface warming, and decreasing RF leads to surface cooling. The concentration of CO_2 in the atmosphere is the dominant anthropogenic driver. Higher atmospheric CO_2 results in: Ocean warming via the greenhouse effect, ocean acidification via oceanic uptake of CO_2, and rising sea levels via ice melting and thermal expansion. Patterns in solar activity and major volcanic eruptions are the two dominant natural drivers. Solar activity can either increase or decrease RF, whereas major volcanic eruptions only decrease RF. Current total RF relative to 1750 is positive, and has led to an uptake of energy by the climate system. The largest contribution to current total RF is the increasing atmospheric concentration of CO_2 since 1750, most of which has been anthropogenic CO_2 emitted since 1860, and the mean rate of increase in CO_2 is unprecedented in the past 20,000 years. Current CO_2 levels (~400 ppm) will result in continued warming even if anthropogenic emissions went to zero now (this is referred to as ''commitment'' to future warming from the CO_2 build-up already in the atmosphere), but reducing emissions now would strongly influence the levels of future warming (IPCC, 2013).

The third section of WGI describes past climate patterns to understand the changes in the climate system. It is ''extremely likely'' that human activities caused more than half of the observed increase in global average surface temperature from 1951 to 2010. Anthropogenic GHGs have ''very likely'' made a substantial contribution to upper-ocean warming (above 700 m) observed since the 1970s. It is also ''very likely'' that oceanic uptake of anthropogenic CO_2 has reduced surface water pH. The anthropogenic ocean warming observed since the 1970s has contributed to global sea-level rise over this period through ice melting and thermal expansion (IPCC, 2013).

The fourth section of WGI uses projected changes in the climate system to model potential patterns of future climate. WGI uses a new set of four representative concentration pathways (RCP) that provide a standard framework for consistently modeling future climate change. These replace the old Special Report on Emissions Scenarios (SRES) system used in prior assessments. The new RCPs are named according to increases in radiative forcing (RF) relative to the 1986–2005 average by the year 2100 of 2.6, 4.5, 6.0,

and 8.5 W/m², RCP2.6, RCP4.5, RCP6.0, and RCP8.5. The four new pathways have atmospheric CO_2 equivalents of 421 (RCP2.6), 538 (RCP4.5), 670 (RCP6.0), and 936 ppm (RCP 8.5) in 2100, and follow very different trajectories to reach those endpoints. The purpose of the RCPs was to explicitly explore the impact of different climate policies in addition to the no-climate-policy scenarios explored in the earlier scenarios (Van Vuuren *et al.*, 2011). The four new pathways were developed with the intent of providing a wide range of total climate forcing to guide policy discussions and specifically include one mitigation pathway leading to a very low forcing level (RCP2.6), two stabilization pathways (RCP4.5 and RCP6), and one pathway with continued high GHG emissions (RCP8.5).

The RCP method more strongly represents the physical processes underlying climate change, and various factors affecting GHG emissions globally, than previous methods. WGI adjusts the likely global surface warming that would result from a doubling of atmospheric CO_2 to 1.5–4.5 °C (compared to AR4's estimate of 2.0–4.5 °C), due to improved understanding of the climate system, the extended temperature record in the atmosphere and ocean, and new estimates of radiative forcing to GHG concentrations. Taken together, the four new pathways project wide ranges of increases in ocean warming, ocean acidification, and sea level rise globally throughout the 21st century with conditions seen in RCP 2.6–6.0 requiring significant changes in anthropogenic GHG emissions (IPCC, 2013).

The proposed rule and supporting documents assumed that AR4's highest-emission scenario A1FI was the most likely to occur for two reasons: (1) Recent annual GHG emission growth rates had exceeded the GHG emission growth rates in A1F1 (except 2009 when the global recession slowed growth); and (2) there were no indications that major reductions in GHG emissions would occur in the near to mid-term future (decades) through national or international policies or major changes in the global fossil fuel economy (Brainard *et al.*, 2011). Recent annual GHG emission growth rates (except 2009) exceed the GHG emission growth rates in RCP8.5 (Le Quéré *et al.*, 2013). While the President's Climate Action Plan and intensified international climate negotiations may change global emissions trajectories, we make the conservative assumption to evaluate RCP8.5, and its projections for ocean warming and ocean acidification, in our assessment of extinction risk for the corals in the final rule. RCP8.5 is the scenario with the highest GHG emissions rate and subsequent future GHG levels; thus it would be the most impactful to corals through ocean warming and ocean acidification. However, should another of the IPCC RCPs ultimately be realized, the negative impacts to corals would be lower.

As described above, we received and collected significant supplemental information regarding our consideration of global climate change in the proposed rule. Additional observations, data, and testing have produced better models and a greater understanding of the uncertainty inherent in climate change projections. Annual GHG emission rates continue to climb to record levels, and the last decade has been the warmest on record, underscoring the proposed rule's conclusions about climate change threats to reef-building corals. We conclude that the supplemental information supports the central premise of the proposed rule that global climate change-related threats have already caused widespread impacts to corals and coral reefs and these impacts will become increasingly severe from now to 2100, with correspondingly severe consequences for corals and coral reefs. However, we acknowledge that the interpretation of future climate change threats to corals and coral reefs is associated with complexity and uncertainty, and that precise effects on individual species of reef-building corals are difficult to determine. Species-specific threat susceptibilities of each of the 65 species in this final rule to the threats resulting from global climate change are described in the Species-specific Information and Determinations section below.

RCP8.5 Projections

Because we have determined that RCP8.5 is the most impactful pathway to corals, we provide a summary of RCP8.5's projections over the foreseeable future for ocean warming and ocean acidification (IPCC, 2013). Where possible, projections are provided for the near-term (to mid-century) and long-term (to 2100), and globally and regionally (Indo-Pacific and Caribbean). Implications for coral reefs are also described.

Ocean Warming. Under RCP8.5, annual averaged, globally averaged, surface ocean temperature is projected to increase by approximately 0.7 °C by 2030 and 1.4 °C by 2060 compared to the 1986–2005 average, with the 10 to 90 percent range increasing over that time period to approximately +/−0.7 °C by 2060 (IPCC, 2013; WGI Figure 11.19). Projected changes in annual mean ocean temperature between 60 °N and 60 °S latitude in 2081–2100 are shown in WGI Figure 12.12. Under RCP8.5, annual mean surface ocean temperature between 60 °N and 60 °S latitude is projected to increase by approximately 3.5 °C by 2081–2100 compared to the 1986–2005 average (IPCC, 2013; WGI Figure 12.12). A different graph using the same data shows global annual mean surface ocean temperature is projected to increase by approximately 3.5 °C by 2081–2100 compared to the 1986–2005 average, with 5 to 95 percent range of +/−1–1.5 °C (IPCC, 2013; Figure AI.SM8.5.4). Thus, RCP8.5 projects that global annual mean ocean surface temperatures will increase by approximately 0.4–1 °C by 2030, approximately 0.7–2 °C by 2060, and approximately 2–5 °C by 2081–2100 (IPCC, 2013).

Projected changes in Indo-Pacific annual median ocean surface temperatures (*i.e.*, WGI's West Indian Ocean, North Indian Ocean, Southeast Asia, North Australia, and Pacific Islands regions), and Caribbean annual median land and ocean combined surface temperatures, compared to the 1986–2005 average are shown in the figures in WGI's Annex I's Supplementary Material for RCP8.5 for these six WGI regions, which together cover the ranges of the species included in this final rule. The figures include graphs in the upper right showing the projected median temperature increase to 2100 under RCP8.5, the 25 to 75 percent range, and the 5 to 95 percent range. The figures also includes maps of each region showing projected changes spatially under RCP8.5 for the time periods 2016–2035, 2046–2065, and 2081–2100, and for the 25 percent, 50 percent, and 75 percent projections under RCP8.5 for each of these time periods. For the Caribbean, the range of projections spanned by the 25, 50, and 75 percent range maps are: For 2016–2035, increases of 0.5–1.0 °C; for 2046–2065, increases of 1.0–3.0 °C; and for 2081–2100, increases of 2.0–4.0 °C. Spatial variability in the projections consists mostly of larger increases in the Greater Antilles and Jamaica, and lower increases in the Lesser Antilles and the Bahamas (Figure AI.SM8.5.44). The percent ranges in the projections described above are from the maps and are for the 25 to 75 percent range, however range of projections within the 5 to 95 percent range are considerably greater, as shown in the bar-and-whisker

graph in the upper right of each figure (IPCC, 2013).

For the Indo-Pacific (WGI's West Indian Ocean, North Indian Ocean, Southeast Asia, North Australia, and Pacific Islands regions), the range of projections spanned by the 25, 50, and 75 percent range maps are: For 2016–2035, increases of 0.0–1.0 °C; for 2046–2065, increases of 1.0–3.0 °C; and for 2081–2100, increases of 2.0–5.0 °C. Spatial variability in the projections consists mostly of larger increases in the Red Sea, Persian Gulf, and the Coral Triangle, and lower increases in the central and eastern Indian Ocean and south-central Pacific (Figures AI.SM8.5.92, 116, 124, 132, and 140). The percent ranges in the projections described above are from the maps and are for the 25 to 75 percent range, however range of projections within the 5 to 95 percent range are considerably greater, as shown in the bar-and-whisker graph in the upper right of each figure (IPCC, 2013).

To summarize ocean warming projections, RCP8.5 projects annual median ocean surface temperature increases for the Indo-Pacific, and annual median land and ocean combined surface temperature increases for the Caribbean. Projected median temperatures, and associated 25 to 75 percent range and 5 to 95 percent range, are provided for the time periods of 2016–2035, 2046–2065, and 2081–2100. We interpret these projections as follows: (1) Global annual median ocean surface temperatures are likely to rise approximately 2–5 °C by 2081–2100, exacerbating the impacts of ocean warming on reef-building corals; (2) these global mean projections are not necessarily representative of ocean surface temperature conditions throughout the ranges and habitats of the species in this final rule through the foreseeable future, due to spatial variability and statistical range of the RCP8.5 ocean warming projections described above for the Indo-Pacific and Caribbean regions; and (3) ocean surface temperature conditions in the foreseeable future within the ranges of the species in this final rule are assumed to vary spatially at the coarse spatial scales shown in WGI for the Indo-Pacific and Caribbean regions, and more so at finer spatial scales, and to fall within the statistical ranges projected for the Indo-Pacific and Caribbean regions.

Ocean Acidification. Under RCP8.5, mean surface pH in the tropics (20 °N to 20 °S) is projected to decline from the current pH of approximately 8.05 to approximately 7.95 by 2050, and to approximately 7.75 by 2100, or a reduction of 0.31 (statistical range of 0.30 to 0.32) by 2100 (IPCC, 2013; WGI Figure 6.28a). Projected changes in global surface pH in the 2090s compared to the 1990s under RCP8.5 are shown in the map in WGI Figure 6.28b. In the tropical Indo-Pacific, decreases of 0.25 to 0.40 are projected, with the lower decreases in the central and eastern Pacific, and the higher decreases in the GBR area and the northern Philippines, while most of the Caribbean is projected to decrease in pH by 0.30 to 0.35. The pH reductions associated with RCP8.5 are projected to result in declining aragonite saturation states, as shown in WGI Figure 6.29. Projected median surface aragonite saturation states of the world's oceans are shown for 2050 and 2100 in Figure 6.29d and f respectively, and by depth for the Atlantic and Pacific Oceans in 2100 in Figure 6.29c and e respectively. Surface aragonite saturation states in the tropical Indo-Pacific and Caribbean are projected to decline from current levels of over 3, to less than 2.5 by 2100, with similar spatial patterns as for pH reductions (IPCC, 2013; WGI Figure 6.29). Statistical range is not provided for aragonite saturation state, but we assume it to be similar to that associated with pH projections. As shown in Figures 6.28 and 6.29, spatial variability is projected under RCP8.5 for both pH and aragonite saturation state reductions over the foreseeable future within the ranges of the species included in this final rule (IPCC, 2013).

We interpret RCP8.5's ocean acidification projections as follows: (1) Mean surface pH in the tropics is projected to decline by approximately 0.31 to approximately 7.75 by 2100, with a subsequent large decline in aragonite saturation state in surface tropical waters, exacerbating the impacts of ocean acidification on reef-building corals; (2) surface pH and aragonite saturation state conditions throughout the ranges of the species in this final rule through the foreseeable future are not necessarily represented by these mean projections, due to the spatial variability within the Indo-Pacific and Caribbean regions, and the statistical range of the RCP8.5 ocean acidification projections; and (3) surface pH and aragonite saturation state conditions in the foreseeable future within the ranges of the species in this final rule are assumed to vary spatially at the coarse spatial scales shown in WGI for the Indo-Pacific and Caribbean regions, and more so at finer spatial scales, and to fall within the statistical ranges projected for the Indo-Pacific and Caribbean regions.

Implications for Coral Reef Ecosystems. AR5's WGII Report describes the effects of WGI's climate change projections on the world's ecosystems, including coral reefs. The report includes a description of ''Projected Impacts'' on coral reefs of all four WGI pathways combined, and a general overview of projected impacts to coral reefs. While this information does not specifically describe projected impacts of RCP8.5 to coral reefs by 2100, it strongly suggests that the projected impacts of ocean warming and ocean acidification will increase (IPCC, 2014). Likewise, the recent U.S. National Climate Assessment (NCA) report describes the effects of projected climate change on United States ecosystems, including coral reefs. Chapter 24 of the report includes a brief and general description of projected climate change without specifically examining any particular pathway (Doney *et al.*, 2014). As with WGII, while the NCA report does not specifically describe projected impacts of RCP8.5 to coral reefs by 2100, it strongly suggests that the projected impacts of ocean warming and ocean acidification will increase on United States coral reefs.

Recent papers specifically address future changes in Indo-Pacific and Caribbean coral reef ecosystems resulting from RCP8.5's projections of combined ocean warming and ocean acidification, including Couce *et al.* (2013a) and van Hooidonk *et al.* (2014). Couce *et al.* (2013a) uses RCP8.5's ocean warming and ocean acidification projections to develop predictions of ''average change in suitability'' of coral reef habitat by 2070, concluding that declines in conditions will be driven primarily by ocean warming, and vary spatially within the ranges of the species included in this final rule. Couce *et al.* (2013) predicts marked declines in environmental suitability for shallow coral reef habitats across the equatorial western Pacific and adjacent areas (*e.g.*, Coral Triangle) by 2070, and generally less favorable conditions elsewhere on Indo-Pacific and Caribbean coral reefs. Some coral reef areas show little or no change in environmental suitability by 2070, including portions of the western Indian and central Pacific Oceans, likely because seawater temperatures are moderated by physical factors such as higher latitudes or upwelling but aragonite saturation states are suitable (Couce *et al.*, 2013a; Fig. 1e). Many species included in this final rule occur in areas of the western Indian and central Pacific Oceans predicted to have

little or no change in environmental suitability by 2070. Notably, the paper concluded the detrimental effect of higher ocean warming appears to strongly outweigh the impacts of lower aragonite saturation states for tropical shallow water coral reefs (Couce *et al.*, 2013a).

van Hooidonk *et al.* (2014) also applies RCP8.5's ocean warming and ocean acidification projections to predict ''when severe coral bleaching events start to occur annually, and of changes in aragonite saturation state'' over the 21st century. The paper concludes that 90 percent of all coral reefs are projected to experience severe bleaching annually by 2055, that five percent declines in calcification are projected for all reef locations by 2034, with the predicted changes in conditions varing spatially across the geographic ranges of the species included in this final rule. These authors predicted that the most rapid increases in ocean warming will occur in the western equatorial Pacific, the slowest in the Indian Ocean, eastern Pacific Ocean, and high latitude areas, and intermediate elsewhere (van Hooidonk *et al.*, 2014; Fig 1a). The most rapid declines in aragonite saturation state are predicted for the same general areas as the slowest warming, the slowest declines in aragonite saturation state in roughly the same areas as the most rapid warming, and intermediate elsewhere in the Indo-Pacific and in the Caribbean (van Hooidonk *et al.*, 2014; Fig 1d). One of the paper's conclusions is that there are no real refugia for coral reefs to the combined threats of higher ocean warming and lower aragonite saturation states (van Hooidonk *et al.*, 2014).

Several points to consider when interpreting Couce *et al.* (2013a) and van Hooidonk *et al.* (2014) are: (1) The different results and conclusions are likely due to the different methods, and illustrate the sensitivity and variability in predicting the impacts of projected changes in climate on coral reefs; (2) both papers used very coarse spatial scales ($1° \times 1°$ cells, or >10,000 km^2 at the Equator), thus each cell can include many different reefs that collectively represent diverse coral communities and habitats, which in turn can affect the local spatial and temporal patterns of coral responses to ocean warming and acidification; (3) both papers predict high spatial variability in future conditions across coral reefs, and both show the western equatorial Pacific as having the most degraded future conditions, and parts of the Indian Ocean, central Pacific, and some outlying areas as having less degraded future conditions; and (4) neither paper analyzed the impacts of future climate change on individual coral species.

In conclusion, RCP8.5 projects impacts to global coral reef ecosystems over the foreseeable future from the combined effects of increased ocean temperature and ocean acidification, the effects of which are likley to be compounded by increasing coral disease, trophic effects of fishing, land-based sources of pollution, and other threats to corals. However, projecting species-specific responses to global threats is complicated by several physical and biological factors: (1) Global projections of changes to ocean temperatures and acidification over the foreseeable future are associated with three major sources of uncertainty (GHG emissions assumptions, strength of the climate's response to GHG concentrations, and large natural variations); (2) there is spatial variability in projected environmental conditions across the ranges of the species in this final rule at any given point in time; and (3) species-specific responses depend on many biological characteristics, including, at a minimum, distribution, abundance, life history, susceptibility to threats, and capacity for acclimatization. The available species-specific information on how species in this final rule respond to climage change is limited. Therefore, analysis of the biological characteristics on a case-by-case basis is emphasized in considering a species' vulnerability to extinction.

Ocean Warming (High Importance Threat, ESA Factor E)

Ocean warming is considered under ESA Factor E—other natural or manmade factors affecting the continued existence of the species—because the effect of the threat results from human activity and affects individuals of the species directly, and not their habitats. In the proposed rule, we described the threat from ocean warming as follows. Mean seawater temperatures in reef-building coral habitat in both the Caribbean and Indo-Pacific have increased during the past few decades, and are predicted to continue to rise between now and 2100. As also described in the proposed rule, the frequency of warm-season temperature extremes (warming events) in reef-building coral habitat in both the Caribbean and Indo-Pacific has increased during the past two decades, and it is also predicted to increase between now and 2100.

Ocean warming is one of the most important threats posing extinction risks to the proposed coral species; however, individual susceptibility varies among species. The primary observable coral response to ocean warming is bleaching of adult coral colonies, wherein corals expel their symbiotic zooxanthellae in response to stress. For many corals, an episodic increase of only 1 °C–2 °C above the normal local seasonal maximum ocean temperature can induce bleaching. Corals can withstand mild to moderate bleaching; however, severe, repeated, or prolonged bleaching can lead to colony death. Coral bleaching patterns are complex, with several species exhibiting seasonal cycles in symbiotic dinoflagellate density. Thermal stress has led to bleaching and associated mass mortality in many coral species during the past 25 years. In addition to coral bleaching, other effects of ocean warming detrimentally affect virtually every life-history stage in reef-building corals. Impaired fertilization, developmental abnormalities, mortality, impaired settlement success, and impaired calcification of early life phases have all been documented. In the proposed rule, we relied heavily on AR4 in evaluating extinction risk from ocean warming because it contained the most thoroughly documented and reviewed assessments of future climate and represented the best available scientific information on potential future changes in the earth's climate system. Emission rates in recent years have met or exceeded levels predicted by AR4's worst-case scenarios, resulting in all scenarios underestimating the projected climate condition.

Exposure of colonies of a species to ocean warming can vary greatly across its range, depending on colony location (*e.g.,* latitude, depth, bathymetry, habitat type, *etc.*) and physical processes that affect seawater temperature and its effects on coral colonies (*e.g.,* winds, currents, upwelling shading, tides, *etc.*). Colony location can moderate exposure of colonies of the species to ocean warming by latitude or depth, because colonies in higher latitudes and/or deeper areas are usually less affected by warming events. Deeper areas are generally less affected typically because lower irradiance reduces the likelihood of warming-induced bleaching. Also, some locations are blocked from warm currents by bathymetric features, and some habitat types reduce the effects of warm water, such as highly fluctuating environments. Physical processes can moderate exposure of colonies of the species to ocean warming in many ways, including processes that increase mixing (*e.g.,* wind, currents, tides), reduce seawater temperature (*e.g.,*

upwelling, runoff), or increase shading (*e.g.* turbidity, cloud cover). Exposure of colonies of a species to ocean warming will likely vary annually and decadally, while increasing over time, because: (1) Numerous annual and decadal processes that affect seawater temperatures will continue to occur in the future (*e.g.,* inter-decadal variability in seawater temperatures and upwelling related to El-Niño Southern Oscillation); and (2) ocean warming is predicted to substantially increase by 2100.

Multiple threats stress corals simultaneously or sequentially, whether the effects are cumulative (the sum of individual stresses) or interactive (*e.g.,* synergistic or antagonistic). Ocean warming is likely to interact with many other threats, especially considering the long-term consequences of repeated thermal stress, and that ocean warming is expected to continue to increase over the foreseeable future. Increased seawater temperature can lower resistance to coral diseases and reduce coral health and survivorship. Coral disease outbreaks often have either accompanied or immediately followed bleaching events, and also follow seasonal patterns of high seawater temperatures. The effects of greater ocean warming (*e.g.,* increased bleaching, which kills or weakens colonies) are expected to interact with the effects of higher storm intensity (*e.g.,* increased breakage of dead or weakened colonies), resulting in an increased rate of coral declines. Likewise, ocean acidification and nutrients may reduce thermal thresholds to bleaching, increase mortality, and slow recovery.

There is also mounting evidence that warming ocean temperatures can have direct impacts on early life stages of corals, including abnormal embryonic development at 32 °C and complete fertilization failure at 34 °C for one Indo-Pacific *Acropora* species. In addition to abnormal embryonic development, symbiosis establishment, larval survivorship, and settlement success have been shown to be impaired in Caribbean brooding and broadcasting coral species at temperatures as low as 30 °C–32 °C. Further, the rate of larval development for spawning species is appreciably accelerated at warmer temperatures, which suggests that total dispersal distances could also be reduced, potentially decreasing the likelihood of successful settlement and the replenishment of extirpated areas.

Finally, warming will continue causing increased stratification of the upper ocean because water density decreases with increasing temperature. Increased stratification results in decreased vertical mixing of both heat and nutrients, leaving surface waters warmer and nutrient-poor. While the implications for corals and coral reefs of these increases in warming-induced stratification have not been well studied, it is likely that these changes will both exacerbate the temperature effects described above (*e.g.,* increase bleaching and decrease recovery) and decrease the overall net productivity of coral reef ecosystems (*e.g.,* fewer nutrients) throughout the tropics and subtropics.

Overall, there is ample evidence that climate change (including that which is already committed to occur from past GHG emissions and that which is reasonably certain to result from continuing and future emissions) will follow a trajectory that will have a major impact on corals. There has been a recent research emphasis on the processes of acclimatization and adaptation in corals, but in the proposed rule we determined that, taken together, the body of research was inconclusive as to how these processes may affect individual corals' extinction risk, given the projected intensity and rate of ocean warming. As detailed in Comments 12–16, we received numerous comments related to ocean warming threats to corals that focused on the following aspects: (1) General future projections of ocean warming levels; (2) accounting for spatial variability; (3) the future decline of coral reefs because of increasing GHG emissions; (4) the possibility of wide ranging responses by coral reef ecosystems; (5) the specific effects of ocean warming on reef-building corals; and (6) the capacity of reef-building corals for acclimatization and adaptation to ocean warming.

With regard to the future projections of global climate change, the proposed rule and supporting documents assumed that AR4's highest-emission scenario A1FI was the most likely. As discussed in Global Climate Change—General Overview, we assume that for corals RCP8.5 is the most impactful pathway for present to the year 2100. Ocean warming projections and implications for coral reefs are described above in the RCP8.5 Projections section.

Comment 12 also criticized our lack of consideration of the post-1998 hiatus in global warming. The proposed rule did not consider this phenomenon as the issue was only emerging during the time the proposed rule was drafted. However, because supplemental information has become available since that time, we consider it here. Despite unprecedented levels of GHG emissions in recent years, a slow-down in global mean surface air temperature warming has occurred since 1998, which AR5's WGI refers to as a ''hiatus.'' Despite this slowdown in warming, the period since 1998 is the warmest recorded and ''Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850.''

The slow-down in global mean surface warming since 1998 is not fully explained by AR4 or AR5 WGI's models, but is consistent with the substantial decadal and interannual variability seen in the instrumental record and may result, in part, from the selection of beginning and end dates for such analyses. Possible factors in the slow-down may include the following: Heat absorption by the deep ocean (Guemas *et al.,* 2013; Levitus *et al.,* 2012) facilitated by stronger than normal trade winds (England *et al.,* 2014), volcanic eruptions over the last decade (Santer *et al.,* 2014), La Niña-like decadal cooling that produces multi-year periods of slower warming than the long-term anthropogenic forced warming trend (Benestad, 2012; Easterling and Wehner, 2009; Kosaka and Xie, 2013), inherent variability within the climate system that cannot currently be modeled, and potentially other factors (IPCC, 2013). As explained above, the major sources of uncertainty in climate change projections such as AR4 or AR5's WGI are: (1) The projected rate of increase for GHG concentrations; (2) strength of the climate's response to GHG concentrations; and (3) large natural variations. The slow-down in warming since 1998 is an example of a large natural variation that could not be predicted, at least by the models at that time.

Comment 12 identified several sources of spatial variability in ocean warming and requested our consideration of additional information. The proposed rule acknowledged both spatial and temporal variability in ocean warming and considered the effect that variability would have on the proposed corals. However, we acknowledge that supplemental information has since become available, and we consider it here. Regional and local variability in ocean warming conditions may lead to warming-induced bleaching that is more or less severe regionally or locally than globally. A hot spot of ocean warming occurs in the equatorial western Pacific where regional warming is higher than overall warming in the Indo-Pacific, exposing corals and coral reefs in this area to a higher risk of warming-induced bleaching. The hot spot overlaps the Coral Triangle (Couce *et al.,* 2013b; Lough, 2012; Teneva *et al.,* 2012; van

Hooidonk *et al.,* 2013b). Several other areas in the Indo-Pacific have been identified as having lower than average warming, including the western Indian Ocean, Thailand, the southern GBR, central French Polynesia, and the eastern equatorial Pacific, potentially resulting in relatively lower risk of warming-induced coral bleaching in these areas (Couce *et al.,* 2013b; van Hooidonk *et al.,* 2013b). Spatial variability in ocean warming is lower in the much smaller Caribbean, and there are fewer areas there with lower than average warming (Buddemeier *et al.,* 2011). The regional and local heterogeneity in ocean warming likely results in high variability in coral responses across spatial scales (Selig *et al.,* 2010).

There are several types of temporal variability in ocean warming on coral reefs. First, the rate of ocean warming itself changes over time. For example, ocean warming has increased in the Indo-Pacific since 1950, but at different rates at different times (Lough, 2012). Second, different periods of ocean warming can result in variability in warming-induced bleaching at the same location. For example, a study in Thailand showed significant differences in the susceptibility of coral taxa to bleaching events between the years 1998 and 2010 and among coral species at the same site (Sutthacheep *et al.,* 2013). Spatial variability in ocean warming between sites also results in temporal variability in ocean warming impacts, as the different areas are subsequently affected at different rates into the future (van Hooidonk *et al.,* 2013b). For example, a recent study found that Australian subtropical reef-building coral communities are affected by ocean warming more slowly than tropical reef-building coral communities, resulting in slower rates of changes in the subtropical than tropical communities (Dalton and Roff, 2013). These studies underscore the temporal variability of ocean warming and warming-induced bleaching across the ranges of reef-building coral species, complicating the interpretation of the effects of ocean warming on any given coral species across its range and over time.

Mesophotic and marginal habitats serving as refugia from ocean warming are relatively new and potentially important considerations for the vulnerability of coral species to ocean warming. Mesophotic habitats continue to be explored, with new surveys finding larger habitat areas and greater depth distributions for some reef-building corals (Blyth-Skyrme *et al.,* 2013; Bridge and Guinotte, 2012). Supplemental information demonstrates the potential for mesophotic habitat to provide refugia from ocean warming (Bridge *et al.,* 2013a; Smith *et al.,* in press), although it does not always do so (Neal *et al.,* 2013). Marginal habitats, such as high latitude sites, upwelling regions, and turbid areas like the GBR inner shelf, also may provide refugia from ocean warming for some species in some conditions (Browne *et al.,* 2012; Couce *et al.,* 2013b; Dalton and Roff, 2013), but not others (Lybolt *et al.,* 2011). Taken together, mesophotic and marginal habitats may represent a network of refugia from ocean warming for some species.

Comment 14 emphasized both that coral reefs are likely to decline sharply in the future because of increasing GHG emissions (*e.g.,* Carpenter *et al.,* 2008; Donner, 2009; Frieler *et al.,* 2012; Kiessling and Baron-Szabo, 2004) and that a wide range of responses by coral reef ecosystems are possible. Studies provided by commenters, and others on recent modeling results (Frieler *et al.,* 2012; van Hooidonk and Huber, 2012; van Hooidonk *et al.,* 2013b) and scientific opinion statements (Birkeland *et al.,* 2013; ICRS, 2012) suggest disastrous effects of ocean warming, in combination with other threats, on coral reef ecosystems. For example, even in AR5 WGI's best-case pathway (RCP2.6) where CO_2 equivalent concentrations peak at 455 ppm, one model suggests that 95 percent of coral reefs will experience annual bleaching conditions by the end of the century (van Hooidonk *et al.* 2013b). Another model suggests that preserving more than 10 percent of coral reefs worldwide would require limiting warming to less than 1.5 °C above pre-industrial levels. Even assuming high adaptive capacity of corals and the more optimistic AR5 pathways, the model suggests that one-third of the world's coral reefs are projected to be subject to long-term degradation (Frieler *et al.,* 2012). In addition, the combined effects of ocean warming and ocean acidification would produce even more severe impacts on coral reefs globally (van Hooidonk *et al.,* 2013a; Yara *et al.,* 2012).

These and other studies predict the irreversible disappearance of coral reefs on a global scale in the next few decades. However, other recent studies suggest that coral reef degradation resulting from global climate change threats alone is likely to be a more spatially, temporally, and taxonomically heterogeneous process. These studies indicate that coral reef ecosystems, rather than disappear entirely as a result of future impacts, will likely persist, but with unpredictable changes in the composition of coral species and ecological functions (Hughes *et al.,* 2012; Pandolfi *et al.,* 2011). Many factors contribute to the heterogeneous responses of coral reefs to climate change threats, including complexity associated with coral reef habitat, as well as the biology of reef-building coral species themselves. As described in the Corals and Coral Reefs section, the exceptional complexity, extent, and diversity of coral reef habitat increases the uncertainty associated with coarse modeling of reef responses to climate change threats. Likewise, many aspects of reef-building coral biology contribute to complex responses to ocean warming, including species-level processes such as capacity for acclimatization and adaptation (Palumbi *et al.,* 2014), the potential for range expansion (Yamano *et al.,* 2011; Yara *et al.,* 2011), and community-level processes such as changes in competition and predation (Cahill *et al.,* 2013; Hughes *et al.,* 2012). These different processes occur simultaneously, and contribute to highly-variable, complex, and uncertain responses of reef-building coral species and in turn coral reefs to climate changes threats like ocean warming. Moreover, management of local threats can increase resilience of coral reefs to ocean warming and other global climate change threats (Jackson *et al.,* 2014; Pandolfi *et al.,* 2011), as described further in the Threats Evaluation—Inadequacy of Existing Regulatory Mechanisms section.

Comment 15 focused on the specific effects of ocean warming on reef-building corals. The proposed rule described the known specific effects of ocean warming as well as the threats that act simultaneously or sequentially, and whether the effects are cumulative (the sum of individual stresses) or interactive (*e.g.,* synergistic or antagonistic). The rapidly growing literature on synergistic effects of ocean warming-induced bleaching with other threats demonstrates that bleaching is exacerbated by nutrients (Cunning and Baker, 2013; Vega Thurber *et al.,* 2013; Wiedenmann *et al.,* 2013), disease is exacerbated by warm temperatures and bleaching (Ban *et al.,* 2013; Bruno *et al.,* 2007; Muller and van Woesik, 2012; Rogers and Muller, 2012), ocean warming and acidification may impact corals in opposite but converging ways (van Hooidonk *et al.,* 2013a; Yara *et al.,* 2012), and bleaching is exacerbated by a variety of physical factors (Yee and Barron, 2010) or can be reduced by biological factors (Connolly *et al.,* 2012; Fabricius *et al.,* 2013). Other information on species-specifics effects of ocean warming is provided in the

Species-specific Information and Determinations section below.

Comment 15 focused on the potential capacity of reef-building corals for acclimatization and adaptation to ocean warming and provided several new studies (Cahill *et al.,* 2013; Guest *et al.,* 2012; Jones and Berkelmans, 2010) and some that we considered in the proposed rule (Baker *et al.,* 2004; Maynard *et al.,* 2008; Pandolfi *et al.,* 2011). Identified mechanisms include symbiont shuffling (Baker, 2012; Cunning *et al.,* 2013; Ortiz *et al.,* 2013; Silverstein *et al.,* 2012), symbiont shading by host pigments or tissue (Mayfield *et al.,* 2013; Smith *et al.,* 2013a), host genotype expression (Baums *et al.,* 2013; Granados-Cifuentes *et al.,* 2013; Meyer *et al.,* 2011), and host protein expression (Barshis *et al.,* 2013; Voolstra *et al.,* 2011). As described in the Corals and Coral Reefs section, the dynamic association of host coral and symbiotic zooxanthellae and microbes provides potential for acclimatization or adaptation of some reef-building coral species to environmental changes.

Many recent studies provide evidence that certain reef-building coral communities have acclimated or adapted to ocean warming, at least to some degree. The bleaching and mortality of some colonies of a coral species on a reef, followed by the recovery of hardier colonies, is the process by which acclimatization and adaptation of a species to ocean warming occurs. Examples of bleaching, mortality, and recovery provide information about the capacity for acclimatization and adaptation. Several such examples were provided in the proposed rule and supporting documents (Diaz-Pulido *et al.,* 2009; Hueerkamp *et al.,* 2001; Kayanne *et al.,* 2002). More recently, many relevant studies have become available on the effects of the 1998 bleaching event. For example, in comparisons of 1998 and 2010 bleaching events and recovery in southeast Asia, some coral species demonstrated more resistance to bleaching in 2010, suggesting acclimatization or adaptation to thermal stress (Sutthacheep *et al.,* 2013). In a study on an isolated reef in Australia, recovery of coral cover occurred within 12 years of the 1998 bleaching event (Gilmour *et al.,* 2013). In contrast, studies in the U.S. Virgin Islands and Florida demonstrated little if any recovery in the 10 to 12 years following the 1998 bleaching event (Rogers and Muller, 2012; Ruzicka *et al.,* 2013).

A recent analysis comparing observed versus predicted coral bleaching events suggests that corals may have already responded adaptively to some warming since the Industrial Revolution because observed bleaching responses are lower than predicted by the warm temperature anomalies (Logan *et al.,* 2013). A recent study of fast-growing, shallow water coral species demonstrated that acclimatization and adaptive responses allowed them to inhabit reef areas with water temperatures far above their expected tolerances (Palumbi *et al.,* 2014). Similar to the mechanisms of coral acclimatization and adaptation described above, there is a rapidly growing body of literature on the responses of corals to ocean warming (Ateweberhan *et al.,* 2013; Baker *et al.,* 2013; Bellantuono *et al.,* 2012; Castillo *et al.,* 2012; Coles and Riegl, 2013; Penin *et al.,* 2013). These studies help explain the capacity for reef-building corals to acclimatize and adapt to ocean warming and warming-induced bleaching and suggest some limited capacity. However, any such capacity is highly dependent on species, location, habitat type, and many other factors. Available species-specific information on vulnerability to ocean warming and warming-induced bleaching, including evidence of acclimatization or adaptation, is provided in the Species-specific Information and Determination sections below.

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding ocean warming remains unchanged from the proposed rule, in that we consider ocean warming to be of high importance in contributing to extinction risk for the 65 corals in this final rule. However, we acknowledge that the interpretation of future ocean warming and warming-induced impacts to corals and coral reefs is associated with complexity and uncertainty, and that precise effects on individual species of reef-building corals are especially difficult to determine. The impact of ocean warming may be mediated by several factors and the extent to which the extinction risk of a coral species is impacted by ocean warming depends on its particular level of susceptibility, combined with its spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is discussed in detail for each species in the Species-specific Information and Determinations section.

Disease (High Importance Threat, ESA Factor C)

Disease is considered under ESA Factor C—disease or predation. In the proposed rule we described the threat of disease as follows. Disease adversely affects various coral life history events by, among other processes, causing adult mortality, reducing sexual and asexual reproductive success, and impairing colony growth. A diseased state results from a complex interplay of factors including the cause or agent (*e.g.,* pathogen, environmental toxicant), the host, and the environment. All coral disease impacts are presumed to be attributable to infectious diseases or to poorly-described genetic defects. Coral disease often produces acute tissue loss. Other manifestations of disease in the broader sense, such as coral bleaching from ocean warming, are incorporated under other factors (*e.g.,* manmade factors such as ocean warming as a result of climate change).

Coral diseases are a common and significant threat affecting most or all coral species and regions to some degree, although the scientific understanding of individual disease causes in corals remains very poor. The incidence of coral disease appears to be expanding geographically in the Indo-Pacific, and there is evidence that corals with massive morphology species are not recovering from disease events in certain locations. The prevalence of disease is highly variable between sites and species. Increased prevalence and severity of diseases is correlated with increased water temperatures, which may correspond to increased virulence of pathogens, decreased resistance of hosts, or both. Moreover, the expanding coral disease threat may result from opportunistic pathogens that become damaging only in situations where the host integrity is compromised by physiological stress or immune suppression. Overall, there is mounting evidence that warming temperatures and coral bleaching responses are linked (albeit with mixed correlations) with increased coral disease prevalence and mortality. Complex aspects of temperature regimes, including winter and summer extremes, may influence disease outbreaks. Bleaching and coral abundance seem to increase the susceptibility of corals to disease contraction. Further, most recent research shows strong correlations between elevated human population density in close proximity to coral reefs and disease prevalence in corals.

Although disease causes in corals remain poorly understood, some general patterns of biological susceptibility are beginning to emerge. There appear to be predictable patterns of immune capacity across coral families, corresponding with trade-offs with their life history traits, such as reproductive output and growth rate. Both Acroporidae and Pocilloporidae have low immunity to

disease. However, both of these families have intermediate to high reproductive outputs. Both Faviidae and Mussidae are intermediate to high in terms of disease immunity and reproductive output. Finally, while Poritidae has high immunity to disease, it has a low reproductive output.

The effects of coral disease depend on exposure of the species to the threat, which varies spatially across the range of the species and temporally over time. Exposure to coral disease is moderated by distance of some coral habitats from the primary causes of most disease outbreaks, such as stressors resulting from sedimentation and nutrient over-enrichment. Exposure to coral disease can also be moderated by depth of many habitats, with deep habitats generally being less affected by disease outbreaks associated with stressors resulting from ocean warming. Disease exposure in remote areas and deep habitats appears to be low but gradually increasing. Exposure to coral disease will increase as factors that increase disease outbreaks (*e.g.,* warming events) expand over time.

As explained above, disease may be caused by threats such as ocean warming and bleaching, nutrients, and toxins. However, interactive effects between independently-arising disease and other threats are also important, because diseased colonies are more susceptible to the effects of some other threats. For example, diseased or recovering colonies may become more quickly stressed than healthy colonies by land-based sources of pollution (sedimentation, nutrients, and toxins), may more quickly succumb to predators, and may more easily break during storms or as a result of other physical impacts.

Comments 17 and 18 discussed the importance of disease as a threat to corals and provided a few scientific studies (Harvell *et al.,* 1999; Harvell *et al.,* 2002; Muller and van Woesik, 2012; Rogers and Muller, 2012) to emphasize this importance. Muller and van Woesik (2012) examined spatial epidemiology in the Caribbean to test if pathogens are contagious and spread from infected to susceptible hosts. They found no evidence of clustering for these diseases, so they did not follow a contagious disease model. They suggest the expression of coral disease is a two-step model: Environmental thresholds are exceeded, then those conditions either weaken the coral or increase the virulence of the pathogen (Muller and van Woesik, 2012).

We also gathered supplemental information on the threat of disease since the proposed rule was published. Burge *et al.* (2014) summarized the current understanding of interactions among coral disease, elevated temperature, and bleaching. This supplemental information provides further insight of coral disease impacts at the individual level and the local aggregation level, and provides future predictions for the role of coral disease at the population level.

At the individual level, recent studies examine both underlying factors and mechanistic explanations for the contraction and expansion of coral disease. For example, one study investigated microbial community dynamics in the mucus layer of corals to understand how the surface microbial community responds to changes in environmental conditions and under what circumstances it becomes vulnerable to overgrowth by pathogens. They found that a transient thermal anomaly can cause the microbial community to shift from a stable state dominated by antibiotic microbes to a stable state dominated by pathogens. Beneficial microbes may not be able to resume dominance after a temperature disturbance until the environment becomes considerably more favorable for them (Mao-Jones *et al.,* 2010). Another study conducted a meta-analysis to determine whether the presence of particular microbial taxa correlates with the state of coral health and found distinct differences in the microbial taxa present in diseased and healthy corals (Mouchka *et al.,* 2010). A third study investigated three variables commonly associated with immunity in hard and soft corals spanning ten families on the GBR. They found that all three variables (phenlyoxidase activity, size of melanin containing granular cells, and fluorescent protein concentrations) were significant predictors of susceptibility (Palmer *et al.,* 2010). Many other studies have focused on bacterial or eukaryotic pathogens as the source of coral disease; however, a more recent study examined the role of viruses and determined that a specific group of viruses is associated with diseased Caribbean corals (Soffer *et al.,* 2013).

Several studies provide further evidence of disease outbreaks that were significantly correlated with bleaching events. The bleaching occurred first, then several months to a year later, there were significant increases in disease prevalence in bleached areas (Ban *et al.,* 2013; Brandt and McManus, 2009; Bruno *et al.,* 2007; Croquer *et al.,* 2006; Croquer and Weil, 2009; Miller *et al.,* 2009). The specific interactions between the two phenomena varied among disease-bleaching combinations. Results from one of these studies suggest the hypothesized relationship between bleaching and disease events may be weaker than previously thought, and more likely to be driven by common responses to environmental stressors, rather than directly facilitating one another.

Ateweberhan *et al.* (2013) reviewed and summarized interactions between important threats to corals. They note that disease can interact not only with ocean warming and bleaching events, but may also be exacerbated by sedimentation, nutrients, overfishing, and destructive practices on coral reefs. From a broad, population-wide perspective, Yakob and Mumby (2011) provide an important alternative context in which to demonstrate that high population turnover within novel ecosystems (those that are different from the past and created by climate change) may enhance coral resistance to disease. They emphasize the need to move away from future projections based on historical trends and start to account for novel behavior of ecosystems under climate change.

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding disease remains unchanged from the proposed rule, in that we consider coral disease to be of high importance in contributing to extinction risk for the 65 corals in this final rule. The impact of disease may be mediated by several factors and the extent to which the extinction risk of a coral species is impacted by disease depends on its particular level of susceptibility, combined with its spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is discussed in detail for each species in the Species-specific Information and Determinations section.

Ocean Acidification (Medium-High Importance Threat, ESA Factor E)

Ocean acidification is considered under ESA Factor E—other natural or manmade factors affecting the continued existence of the species—because the effect is a result of human activity and affects individuals of the coral species more so than their habitats. In the proposed rule we described that ocean acidification is a result of global climate change caused by increased GHG accumulation in the atmosphere. Reef-building corals produce skeletons made of the aragonite form of calcium carbonate; thus, reductions in aragonite saturation state caused by ocean acidification pose a major threat to these species and other

marine calcifiers. Ocean acidification has the potential to cause substantial reduction in coral calcification and reef cementation. Further, ocean acidification adversely affects adult growth rates and fecundity, fertilization, pelagic planula settlement, polyp development, and juvenile growth. The impacts of ocean acidification can lead to increased colony breakage and fragmentation and mortality. Based on observations in areas with naturally low pH, the effects of increasing ocean acidification may also include potential reductions in coral size, cover, diversity, and structural complexity.

As CO_2 concentrations increase in the atmosphere, more CO_2 is absorbed by the oceans, causing lower pH and reduced availability of carbonate ions, which in turn results in lower aragonite saturation state in seawater. Because of the increase in CO_2 and other GHGs in the atmosphere since the Industrial Revolution, ocean acidification has already occurred throughout the world's oceans, including in the Caribbean and Indo-Pacific, and is predicted to considerably increase between now and 2100, as described above in the RCP8.5 Projections section. Along with ocean warming and disease, we considered ocean acidification to be one of the most important threats posing extinction risks to coral species between now and the year 2100; however, individual susceptibility varies among the proposed species.

Numerous laboratory and field experiments have shown a relationship between elevated CO_2 and decreased calcification rates in some corals and other calcium carbonate secreting organisms. However, because only a few species have been tested for such effects, it is uncertain how most will fare in increasingly acidified oceans. In addition to laboratory studies, recent field studies have demonstrated a decline in linear growth rates of some coral species, suggesting that ocean acidification is already significantly reducing growth of corals on reefs. However, this has not been widely demonstrated across coral species and reef locations, suggesting species-specific effects and localized variability in aragonite saturation state. A potential secondary effect is that ocean acidification may reduce the threshold at which bleaching occurs. Overall, the best available information demonstrates that most corals exhibit declining calcification rates with rising CO_2 concentrations, declining pH, and declining aragonite saturation state, although the rate and mode of decline can vary among species. Recent studies also discuss the physiological effects of ocean acidification on corals and their responses. Corals are able to regulate pH within their tissues, maintaining higher pH values in their tissues than the pH of surrounding waters. This is an important mechanism in naturally highly-fluctuating environments (*e.g.,* many backreef pools have diurnally fluctuating pH) and suggests that corals have some adaptive capacity to acidification. However, as with ocean warming, there is high uncertainty as to whether corals will be able to adapt quickly enough to the projected changes in aragonite saturation state.

In addition to the direct effects on coral calcification and growth, ocean acidification may also affect coral recruitment, reef cementation, and other important reef-building species like crustose coralline algae. Studies suggest that the low pH associated with ocean acidification may impact coral larvae in several ways, including reduced survival and recruitment. Ocean acidification may influence settlement of coral larvae on coral reefs more by indirect alterations of the benthic community, which provides settlement cues, than by direct physiological disruption. A major potential impact from ocean acidification is a reduction in the structural stability of corals and reefs, which results both from increases in bioerosion and decreases in reef cementation. As atmospheric CO_2 rises globally, reef-building corals are expected to calcify more slowly and become more fragile. Declining growth rates of crustose coralline algae may facilitate increased bioerosion of coral reefs from ocean acidification. Studies demonstrate that ocean acidification will likely have a great impact on corals and reef communities by affecting community composition and dynamics, exacerbating the effects of disease and other stressors (*e.g.,* temperature), contributing to habitat loss, and affecting symbiont function. Some studies have found that an atmospheric CO_2-level twice as high as pre-industrial levels will start to dissolve coral reefs; this level could be reached as early as the middle of this century. Further, the rate of acidification may be an order of magnitude faster than what occurred 55 million years ago during the Paleocene-Eocene Thermal Maximum (*i.e.,* the period in which global temperatures rose 5 to 9 °C, providing a context in which to understand climate change).

While CO_2 levels in the surface waters of the ocean are generally in equilibrium with the lower atmosphere, there can be considerable variability in seawater pH across reef-building coral habitats, resulting in colonies of a species experiencing high spatial variability in exposure to ocean acidification. The spatial variability in seawater pH occurs from reef to global scales, driven by numerous physical and biological characteristics and processes, including: Seawater temperature; proximity to land-based runoff and seeps; proximity to sources of oceanic CO_2; salinity; nutrients; photosynthesis; and respiration. In cooler waters, CO_2 absorption is higher, driving pH and aragonite saturation state lower, thus relatively cool coral habitats are more susceptible to acidification, such as those at higher latitudes, in upwelling areas, and in deeper environments. On coral reefs, wave and wind-induced mixing typically maintain roughly similar temperatures in the shallow photic zone preferred by most reef-building corals, thus the deeper environments that are more susceptible to acidification are generally below this photic zone.

Land-based runoff decreases salinity and increases nutrients, both of which can raise pH. Local sources of oceanic CO_2 like upwelling and volcanic seeps lower pH. Photosynthesis in algae and seagrass beds draws down CO_2, raising pH. High variability over various time-scales is produced by numerous processes, including diurnal cycles of photosynthesis and respiration, seasonal variability in seawater temperatures, and decadal cycles in upwelling. Temporal variability in pH can be very high diurnally in highly-fluctuating or semi-enclosed habitats such as reef flats and back-reef pools, due to high photosynthesis during the day (pH goes up) and high respiration during the night (pH goes down). In fact, pH fluctuations during one 24-hr period in such reef-building coral habitats can exceed the magnitude of change expected by 2100 in open ocean subtropical and tropical waters. As with spatial variability in exposure to ocean warming, temporal variability in exposure to ocean acidification is a combination of high variability over short time-scales together with long-term increases. While exposure of the proposed coral species to ocean acidification varies greatly both spatially and temporally, it is expected to increase for all species across their ranges between now and 2100.

Ocean acidification likely interacts with other threats, especially considering that ocean acidification is expected to continue to increase over the foreseeable future. For example, ocean acidification may reduce the threshold at which bleaching occurs, increasing the threat posed by ocean warming. One of the key impacts of ocean acidification is reduced

calcification, resulting in reduced skeletal growth and skeletal density, which may lead to numerous interactive effects with other threats. Reduced skeletal growth compromises the ability of coral colonies to compete for space against algae, which grows more quickly as nutrient over-enrichment increases, especially if not held in check by herbivores. Reduced skeletal density weakens coral skeletons, resulting in greater colony breakage from natural and human-induced physical damage.

As discussed in Comments 18–21, we received numerous comments related to the threat to corals from ocean acidification including: (1) The overview and future projections of ocean acidification; (2) variability in ocean acidification; and (3) specific effects of ocean acidification on reef-building corals.

Comment 17 stated that we oversimplified the complexity and variability in the future projections of ocean acidification, and criticized our reliance on AR4 as the basis for our threat evaluation. In the proposed rule, we acknowledged the uncertainty associated with projections of ocean acidification from global climate change. However, while there are many sources of uncertainty in climate change projections, and likewise for ocean acidification, the ocean acidification projections in AR4 and AR5's WGI represent the best available information. The proposed rule and supporting documents assumed that AR4's highest-emission scenario A1F1 was the most likely to occur. Now that AR5's WGI is available, we consider the most impactful pathway to coral is WGI's RCP8.5, which includes ocean acidification projections. These projections are described above in the RCP8.5 Projections section, along with two independent analyses of the effects of ocean acidification projections in RCP8.5 on coral reefs in the 21st century. As noted in the RCP8.5 Projections section, there is uncertainty in these ocean acidification projections for coral reefs.

Comment 18 specifically cites Manzello *et al.* (2012) and Palacios and Zimmerman (2012; 2007) to illustrate that variability in ocean acidification on coral reefs can be buffered by local and regional biogeochemical processes within seagrass beds. Additionally, biogeochemical processes within coral reef communities (Andersson *et al.,* 2013) may buffer the effects of decreasing pH. Other scientific studies identify mechanisms that can exacerbate changes in seawater pH around coral reefs from ocean acidification, such as diurnal variability that can amplify CO_2 in seawater around coral reefs (Shaw *et al.,* 2013). On larger scales, a recent study demonstrated that some coastal areas of the Gulf of Mexico and South Atlantic were buffered against ocean acidification because of the input of fresh, alkaline surface waters carrying dissolved inorganic carbon (Wang *et al.,* 2013). Variability in ocean acidification at basin and global scales is influenced largely by upwelling and latitude, with more acidification in areas of high upwelling and lower temperatures. The interaction of ocean acidification with ocean warming produces basin-level patterns of higher and lower habitat suitability for reef-building corals (Couce *et al.,* 2013b; van Hooidonk *et al.,* 2013a; Yara *et al.,* 2012).

Comments 19 and 20 underscore specific effects to corals from ocean acidification identified in the proposed rule, including: (1) Effects on reef accretion; (2) effects on larvae and juvenile corals; (3) interactive effects with other environmental variables; and (4) miscellaneous effects. Recent research identifies impacts of ocean acidification on reef accretion due to reduced coral calcification (Chan and Connolly, 2013) and impacts on crustose coralline algae (Doropoulos and Diaz-Pulido, 2013). Recent research has also found that impacts of ocean acidification on brooded larvae of *Pocillopora damicornis* were higher when the larvae were released earlier (Cumbo *et al.,* 2013) and that nutritionally replete juvenile corals were less susceptible to ocean acidification than nutritionally deprived juveniles (Drenkard *et al.,* 2013).

Many recent studies have investigated the interactive effects of ocean acidification with other environmental variables. The opposing effects of ocean warming and ocean acidification were discussed in a study that demonstrated low light conditions can exacerbate ocean acidification effects. Low-light conditions can provide a refuge for reef-building corals from thermal and light stress, but this study suggests that lower light availability will potentially increase the susceptibility of key coral species to ocean acidification (Suggett *et al.,* 2013). Another study predicts that increasing storms predicted by climate change, together with ocean acidification, are likely to increase collapse of table corals (Madin *et al.,* 2012). Salinity extremes on a nearshore coral community did not affect the sensitivity of reef-building corals to ocean acidification (Okazaki *et al.,* 2013). Finally, several studies have investigated the simultaneous effects of ocean warming and ocean acidification, most of which have found harmful synergistic effects (Ateweberhan *et al.,* 2013; Dove *et al.,* 2013; Kroeker *et al.,* 2013), but not all (Wall *et al.,* 2013). However, impacts of ocean acidification are more rapid in cool water, such as in mesophotic habitat (Cerrano *et al.,* 2013) and temperate areas (Yara *et al.,* 2012).

Several other recent papers also provide information on the impacts of ocean acidification on reef-building corals. A study of the effects of ocean acidification on primary polyps with and without zooxanthellae found that polyps with zooxanthellae had higher tolerance to ocean acidification, suggesting that coral species that acquire symbionts from the environment will be more vulnerable to ocean acidification than corals that maternally acquire symbionts (*i.e.,* brooding species; Ohki *et al.,* 2013). A study of *Porites* corals at a field site with naturally low pH found that the corals were not able to acclimatize enough to prevent the impacts of local ocean acidification on their skeletal growth and development, despite spending their entire lifespan in low pH seawater (Crook *et al.,* 2013). A study of the effects of ocean acidification on different coral species in different environments found that effects were highly species-dependent, and furthermore, that effects within a species depended on the environment (Kroeker *et al.,* 2013).

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding ocean acidification remains unchanged from the proposed rule, in that we consider ocean acidification to be of medium-high importance in contributing to extinction risk for the 65 corals in this final rule. However, we acknowledge that the interpretation of future ocean acidification and acidification-induced impacts to corals and coral reefs is associated with complexity and uncertainty and that the effects on individual species of reef-building corals are especially difficult to determine. The impact of ocean acidification may be mediated by several factors and the extent to which the extinction risk of a coral species is impacted by ocean acidification depends on its particular level of susceptibility, combined with its spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is discussed in detail for each species in the Species-specific Information and Determinations section.

Trophic Effects of Fishing (Medium Importance Threat, ESA Factor A)

Trophic effects of fishing are considered under ESA Factor A—the present or threatened destruction, modification, or curtailment of its habitat or range—because the main effect of concern is to limit availability of habitat for corals. In the proposed rule we described the threat of the trophic effects of reef fishing as follows. Fishing, particularly overfishing, can have large scale, long-term ecosystem-level effects that can change ecosystem structure from coral-dominated reefs to algal-dominated reefs (''phase shifts''). Even fishing pressure that doesn't rise to the level of overfishing potentially can alter trophic interactions that are important in structuring coral reef ecosystems. These trophic interactions include reducing population abundance of herbivorous fish species that control algal growth, limiting the size structure of fish populations, reducing species richness of herbivorous fish, and releasing corallivores from predator control. Thus, an important aspect of maintaining resilience in coral reef ecosystems is to sustain populations of herbivores, especially the larger scarine herbivorous wrasses such as parrotfish.

On topographically complex reefs, population densities can average well over a million herbivorous fishes per km^2, and standing stocks can reach 45 metric tons per km^2. In the Caribbean, parrotfishes can graze at rates of more than 150,000 bites per square meter per day, and thereby remove up to 90–100 percent of the daily primary production (*e.g.,* algae). Under these conditions of topographic complexity with substantial populations of herbivorous fishes, as long as the cover of living coral is high and resistant to mortality from environmental changes, it is very unlikely that the algae will take over and dominate the substrate. However, if herbivorous fish populations, particularly large-bodied parrotfish, are heavily fished and a major mortality of coral colonies occurs, then algae can grow rapidly and prevent the recovery of the coral population. The ecosystem can then collapse into an alternative stable state, a persistent phase shift in which algae replace corals as the dominant reef species. Although algae can have negative effects on adult coral colonies (*e.g.,* overgrowth, bleaching from toxic compounds), the ecosystem-level effects of algae are primarily from inhibited coral recruitment. Filamentous algae can prevent the colonization of the substrate by planula larvae by creating sediment traps that obstruct access to a hard substrate for attachment. Additionally, macroalgae can suppress the successful colonization of the substrate by corals through occupation of the available space, shading, abrasion, chemical poisoning, and infection with bacterial disease.

Overfishing can have further impacts on coral mortality via trophic cascades. In general larger fish are targeted, resulting in fish populations of small individuals. For parrotfishes, the effect of grazing by individuals greater than 20 cm in length is substantially greater than that by smaller fish. Up to 75 individual parrotfishes with lengths of about 15 cm are necessary to have the same reduction in algae and promotion of coral recruitment as a single individual 35 cm in length. Species richness of the herbivorous fish population is also very beneficial to maintaining available substrate potentially leading to enhanced coral populations. Because of differences in their feeding behaviors, several species of herbivorous fishes with complementary feeding behaviors can have a substantially greater positive effect than a similar biomass of a single species on reducing the standing stock of macroalgae, of increasing the cover of crustose coralline algae, and increasing live coral cover.

Exposure to the trophic effects of fishing in the Caribbean may be moderated by distance of some coral habitats from fishing effort. Exposure to the trophic effects of fishing in the Indo-Pacific is likely more moderated by distance than in the Caribbean, due to a greater proportion of reef-building coral habitats located in remote areas away from fishing effort. Exposure to the trophic effects of reef fishing may also moderated by depth of many habitats in both regions, but again more so in the Indo-Pacific than in the Caribbean. Deep habitats are generally less affected by the trophic effects of fishing, especially in the Indo-Pacific. Exposure to the trophic effects of fishing will increase as the human population increases over time.

The trophic effects of fishing are likely to interact with many other threats, especially considering that fishing impacts are likely to increase within the ranges of many of the proposed corals over the foreseeable future. For example, when carnivorous fishes are overfished, corallivore populations may increase, resulting in greater predation on corals. Further, overfishing appears to increase the frequency of coral disease. Fishing activity usually targets the larger apex predators. When predators are removed, corallivorous butterfly fishes become more abundant and can transmit disease from one coral colony to another as they transit and consume from each coral colony. With increasing abundance, they transmit disease to higher proportions of the corals within the population.

Comments 21–23 focused on the following aspects of the trophic effects of reef fishing: (1) The importance of the threat to coral reefs; (2) higher importance localized threats; and (3) consideration of human demography.

Comment 21 highlighted Keller *et al.* (2009), which provides additional support for the importance herbivores play in the maintenance of recruitment habitat. Further, recent information shows that one of the most detrimental effects of unsustainable fishing pressure is the alteration of trophic interactions that are particularly important in structuring coral reef ecosystems (Jackson *et al.,* 2012; Jackson *et al.,* 2014; Ruppert *et al.,* 2013). These trophic interactions include reducing population abundance of herbivorous fish species that control algal growth, limiting the size structure of fish populations, reducing species richness of herbivorous fish, and releasing corallivores from predator control. Thus, an important aspect of maintaining resilience in coral reef ecosystems is to sustain functional populations of herbivores, especially the larger parrotfish and other key functional herbivorous fish (Hughes *et al.,* 2010; Jackson *et al.,* 2012; Jackson *et al.,* 2014; Kennedy *et al.,* 2013). Further, Jackson *et al.* (2014) considers overfishing (associated with high human densities) to be one of the major causes of the region-wide decline in Caribbean corals while acknowledging that climate threats are likely to be major sources of mortality in the future. In addition to direct overfishing of primary consumers such as parrotfish, recent studies found that overfishing of top reef predators such as sharks and other predatory fish, such as large groupers in the Caribbean, can have an impact that cascades down the food chain, potentially contributing to mesopredator release, and ultimately altering the numbers of primary consumers available to control algal growth (Jackson *et al.,* 2012; Jackson *et al.,* 2014; Ruppert *et al.,* 2013).

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding the trophic effects of fishing remains unchanged from the proposed rule. Trophic effects of fishing are a medium importance threat in assessing global extinction risk for the 65 corals in this final rule. Because the main effect of trophic effects of reef

fishing is habitat alteration, there are no species-specific levels of exposure and susceptibility. However, the extent to which an individual species' recruitment is affected is discussed in more detail in the Species-specific Information and Determinations section, when species-specific information is available.

Sedimentation (Low-Medium Importance Threat, ESA Factors A and E)

Sedimentation is considered under ESA Factor A—the present or threatened destruction, modification, or curtailment of its habitat or range—and ESA Factor E—other natural or manmade factors affecting the continued existence of the species—because the effect of the threat, resulting from human activity, is both to limit the availability of habitat for corals and to directly impact individuals of coral species. In the proposed rule we described the threat of sedimentation as follows. Human activities in coastal and inland watersheds introduce sediment into the ocean by a variety of mechanisms, including river discharge, surface runoff, groundwater seeps, and atmospheric deposition. Humans also introduce sewage into coastal waters through direct discharge, treatment plants, and septic leakage. Elevated sediment levels are generated by poor land use practices and coastal and nearshore construction.

The most common direct effect of sedimentation is deposition of sediment on coral surfaces as sediment settles out from the water column. Corals with certain morphologies (*e.g.,* mounding) can passively reject settling sediments. In addition, corals can actively displace sediment by ciliary action or mucous production, both of which require energetic expenditures. Corals with large calices (skeletal component that holds the polyp) tend to be better at actively rejecting sediment. Some coral species can tolerate complete burial for several days. Corals that are unsuccessful in removing sediment will be smothered and die. Sediment can also induce sublethal effects, such as reductions in tissue thickness, polyp swelling, zooxanthellae loss, and excess mucus production. In addition, suspended sediment can reduce the amount of light in the water column, making less energy available for coral photosynthesis and growth. Sedimentation also impedes fertilization of spawned gametes and reduces larval settlement and survival of recruits and juveniles.

Although it is difficult to quantitatively predict the extinction risk that sedimentation poses to the corals under consideration, human activity has resulted in quantifiable increases in sediment inputs in some reef areas. Continued increases in coastal human populations combined with poor land use and nearshore development practices will likely increase sediment delivery to reef systems. Nearshore sediment levels will also likely increase with sea-level rise. Greater inundation of reef flats can erode soil at the shoreline and resuspend lagoon deposits, producing greater sediment transport and potentially leading to leeward reefs being flooded with turbid lagoon waters or buried by off-bank sediment transport. Sediment stress and turbidity also can induce bleaching, although some corals may be more tolerant of elevated short-term levels of sedimentation.

Exposure to sedimentation can be moderated by distance of some coral habitats from areas where sedimentation is chronically or sporadically heavy, resulting in some habitats being unaffected or very lightly affected by sedimentation. Exposure to sedimentation for particular species may also be moderated by depth of habitats. Exposure to sedimentation is expected to increase as human activities that produce sedimentation expand over time.

Sedimentation is also likely to interact with many other threats, such as other land-based sources of pollution and warming-induced bleaching, especially considering that sedimentation is likely to increase across the ranges of many of the 65 species over the foreseeable future. For example, when coral communities that are chronically affected by sedimentation experience a warming-induced bleaching event, a disease outbreak, or a toxic spill, the consequences for those corals can be much more severe than in communities not affected by sedimentation.

Comment 25 underscored the importance of sedimentation as a considerable local threat to corals, and highlighted the potential of sedimentation to interact and potentially exacerbate other threats. A few commenters provided references (Bonkosky *et al.,* 2009; Hernández-Delgado *et al.,* 2012; Hernandez-Delgado *et al.,* 2011) that discussed sedimentation as a threat to corals.

We also gathered supplemental studies on the threat of sedimentation since the proposed rule was published. Three points in particular from the proposed rule were affirmed by the supplemental studies. Sedimentation can have interactive effects with other stressors including disease and climate factors such as bleaching susceptibility and reduced calcification (Ateweberhan *et al.,* 2013; Suggett *et al.,* 2013). MPAs provide little protection against indirect stressors like sedimentation from upland activities (Halpern *et al.,* 2013). The effects of sedimentation can be variable for different coral species and may depend on other environmental conditions (Blakeway *et al.,* 2013; Suggett *et al.,* 2013).

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding sedimentation remains unchanged from the proposed rule. Sedimentation is a low to medium importance threat in assessing global extinction risk for the 65 corals in this final rule. The impact of sedimentation may be mediated by several factors and the extent to which the extinction risk of a coral species is impacted by sedimentation depends on its particular level of susceptibility combined with it spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is considered for each species in the Species-specific Information and Determinations section.

Nutrients (Low-Medium Importance Threat, ESA Factors A and E)

Nutrient enrichment is considered under ESA Factor A—the present or threatened destruction, modification, or curtailment of its habitat or range—and ESA Factor E—other natural or manmade factors affecting the continued existence of the species—because the effect of the threat, resulting from human activity, is both to limit the availability of habitat for corals and directly impact individuals of coral species. In the proposed rule we described the threat of nutrient over-enrichment as follows. Elevated nutrients affect corals through two main mechanisms: Direct impacts on coral physiology and indirect effects through nutrient-stimulation of other community components (*e.g.,* macroalgal turfs and seaweeds, and filter feeders) that compete with corals for space on the reef. Increased nutrients can decrease calcification; however, nutrients may also enhance linear extension, while reducing skeletal density. Either condition results in corals that are more prone to breakage or erosion, but individual species do have varying tolerances to increased nutrients. The main vectors of anthropogenic nutrients are point-source discharges (such as rivers or sewage outfalls) and surface runoff from modified watersheds. Natural processes,

such as *in situ* nitrogen fixation and delivery of nutrient-rich deep water by internal waves and upwelling also bring nutrients to coral reefs.

Exposure to nutrients can be moderated by distance of some coral habitats from areas where nutrients are chronically or sporadically heavy (*e.g.,* heavily populated areas). However, nutrient over-enrichment can still result from sparsely populated areas; and these nutrients can be quickly transported large distances. Therefore, distance is less of a moderating factor for nutrients than for sedimentation. Similarly, although nutrient exposure may also be moderated by the depth of some habitats, nutrient impacts extend deeper than sedimentation impacts. Exposure to nutrients is expected to increase as human activities that produce nutrients expand over time.

Nutrients are likely to interact with many other threats, especially considering that nutrient over-enrichment is likely to increase across the ranges of many of the 65 corals over the foreseeable future. For example, when coral communities that are chronically affected by nutrients experience a warming-induced bleaching event, a disease outbreak, or a toxic spill, the consequences for corals can be much more severe than in communities not affected by nutrients.

Comment 26 supported and reiterated the effects nutrients can have on corals. Some of the individual commenters provided studies (Bonkosky *et al.,* 2009; Connolly *et al.,* 2012; Cunning and Baker, 2013; Fabricius *et al.,* 2013; Hernandez-Delgado *et al.,* 2011; Hernández-Delgado *et al.,* 2008; Méndez-Lázaro *et al.,* 2012; Wiedenmann *et al.,* 2013) to reinforce their support. Bonkosky *et al.* (2009) provided further evidence that elevated turbidity and nutrient enrichment from human waste discharge has an extensive impact on coral reef ecosystems. In response to contradictory results from other studies as to whether nutrients increase thermal stress or increase resistance to higher temperature for corals, Fabricius *et al.* (2013) exposed corals to both elevated nutrients and heat stress. They found higher mortality occurred in the elevated nutrient-heat stress treatments versus heat-stressed alone and controls. Wiedenmann *et al.* (2013) found that unfavorable ratios of dissolved inorganic nutrients in the water column led to phosphate starvation of symbiotic algae, reducing thermal tolerance. Cunning and Baker (2013) found higher nutrient loads can lead to higher densities of symbionts, and corals with higher densities of symbionts were more susceptible to bleaching.

We also gathered supplemental information on how elevated nutrients interact with other threats, including coral bleaching and disease. One study tested the interactive effects of nutrient loading with both bleaching and disease and found that coral disease prevalence and severity as well as coral bleaching were increased in nutrient enriched plots (Vega Thurber *et al.,* 2013). Ateweberhan *et al.* (2013) note that most studies on the subject of nutrient enrichment and high temperatures also present evidence of negative effects on calcification due to higher nutrient levels, although both positive and negative effects have been reported. Nutrient enrichment can also interact with the threat of coral disease by encouraging the proliferation of disease-causing microorganisms and bioeroders, such as boring sponges, and intensifying the growth of fleshy macroalgae that harbor and spread coral diseases (Ateweberhan *et al.,* 2013; Vega Thurber *et al.,* 2013).

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding nutrient over-enrichment remains unchanged from the proposed rule. Nutrients are a low to medium importance threat in assessing global extinction risk for the 65 corals in this final rule. The impact of elevated nutrients may be mediated by several factors and the extent to which the extinction risk of a coral species is impacted by nutrient enrichment depends on its particular level of susceptibility, combined with its spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is considered for each species in the Species-specific Information and Determinations section.

Sea-Level Rise (Low-Medium Threat, ESA Factor A)

Sea-level rise is considered under ESA Factor A—the present or threatened destruction, modification, or curtailment of its habitat or range—because the effect of the threat is to the availability of corals' habitat and not directly to the species themselves. In the proposed rule we described the threat of sea-level rise as follows. The effects of sea-level rise may act on various coral life history events, including larval settlement, polyp development, and juvenile growth, and can contribute to adult mortality and colony fragmentation, mostly due to increased sedimentation and decreased water quality (reduced light availability) caused by coastal inundation. The best available information suggests that sea level will continue to rise due to thermal expansion and the melting of land and sea ice. Theoretically, any rise in sea-level could potentially provide additional habitat for corals living near the sea surface. Many corals that inhabit the relatively narrow zone near the ocean surface have rapid growth rates when healthy, which allowed them to keep up with sea-level rise during the past periods of rapid climate change associated with deglaciation and warming. However, depending on the rate and amount of sea-level rise, rapid rises can lead to reef drowning. Rapid rises in sea level could affect many of the proposed coral species by both submerging them below their common depth range and, more likely, by degrading water quality through coastal erosion and potentially severe sedimentation or enlargement of lagoons and shelf areas. Rising sea level is likely to cause mixed responses in the 65 corals depending on their depth preferences, sedimentation tolerances, growth rates, and the nearshore topography. Reductions in growth rate due to local stressors, bleaching, infectious disease, and ocean acidification may prevent the species from keeping up with sea-level rise (*i.e.,* from growing at a rate that will allow them to continue to occupy their preferred depth range despite sea-level rise).

The rate and amount of future sea-level rise remains uncertain. Until the past few years, sea-level rise was predicted to be in the range of only about one half meter by 2100. However, more recent estimated rates are higher, based upon evidence that the Greenland and Antarctic ice sheets are much more vulnerable than previously thought. While there is large variability in predictions of sea-level rise, AR4 likely underestimated the rates under all scenarios.

Fast-growing branching corals were able to keep up with the first 3 m of sea-level rise during the warming that led to the last interglacial period. However, whether the 65 corals in this final rule will be able to survive 3 m or more of future sea-level rise will depend on whether growth rates are reduced as a result of other risk factors, such as local environmental stressors, bleaching, infectious disease, and ocean acidification. Additionally, lack of suitable new habitat, limited success in sexual recruitment, coastal runoff, and coastal hardening will compound some corals' ability to survive rapid sea-level rise.

This threat is expected to disproportionately affect shallow areas adjacent to degraded coastlines, as ocean inundation results in higher levels of sedimentation from the newly-inundated coastlines to the shallow areas. Exposure to sea-level rise will be moderated by horizontal and vertical distances of reef-building coral habitats from inundated, degraded coastlines. Exposure to sea-level rise will increase over time as the rate of rise increases.

Sea-level rise is likely to interact with other threats, especially considering that sea-level rise is likely to increase across the ranges of the 65 corals over the foreseeable future. In particular, the inundation of developed areas (*e.g.,* urban and agricultural areas) and other areas where shoreline sediments are easily eroded by sea-level rise is likely to degrade water quality of adjacent coral habitat through increased sediment and nutrient runoff and the potential release of toxic contamination.

Comment 27 supported the Consensus Statement on Climate Change and Coral Reefs, which specifies that sea-levels have already risen and that future rising sea-levels will be accompanied by increased sedimentation levels. We received no additional supplemental information on this threat.

We also gathered supplemental information to update the analysis presented in the proposed rule. In the proposed rule, we noted that AR4 likely underestimated rates of projected sea-level rise. AR5's WGI represents a substantial advance from AR4. The first section of WGI considers observations of climate system change, which refers to descriptions of past climate patterns. WGI concludes it is virtually certain that the global mean sea level rose by 19 cm from 1901 to 2010. The anthropogenic ocean warming observed since the 1970s has contributed to global sea-level rise over this period through ice melting and thermal expansion. Projections for future sea-level-rise in RCP8.5 for the period 2081 to 2100 are 0.53 to 0.97 meter higher than the period 1986 to 2005. In addition, WGI concluded that it is virtually certain that global mean sea-level rise will continue beyond 2100. WGI also reported that it is very likely that in the twenty-first century and beyond, sea-level change will have a strong regional pattern (IPCC, 2013).

After considering this supplemental information in addition to that which was previously available, our conclusion regarding sea-level rise remains unchanged from the proposed rule. Sea-level rise is a low to medium importance threat in assessing global extinction risk for the 65 corals in this final rule. The impact of sea-level-rise may be mediated by some factors and the extent to which the extinction risk of a coral species is impacted by sea-level-rise depends on its particular level of susceptibility, combined with its spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is considered for each species in the Species-specific Information and Determinations section.

Predation (Low Threat, ESA Factor C)

Predation is considered under ESA Factor C—disease or predation. In the proposed rule we described the threat of predation as follows. Predation on some coral genera by many corallivorous species of fish and invertebrates (*e.g.,* snails and seastars) is a chronic, though occasionally acute, energy drain. It is a threat that has been identified for most coral life stages. Thus, predation factored into the extinction risk analysis for each of the 65 corals. Numerous studies have documented the quantitative impact of predation by various taxa on coral tissue and skeleton. Predators can indirectly affect the distribution of corals by preferentially consuming faster-growing coral species, thus allowing slower-growing corals to compete for space on the reef. The most notable example of predation impacts in the Indo-Pacific are from large aggregations or outbreaks of crown-of-thorns seastar. The specific cause of crown-of-thorns seastar outbreaks is unknown. Crown-of-thorns seastar can reduce living coral cover to less than one percent during outbreaks, changing coral community structure, promoting algal colonization, and affecting fish population dynamics.

Exposure to predation by corallivores is moderated by presence of predators of the corallivores. For example, corallivorous reef fish prey on corals, and piscivorous reef fish and sharks prey on the corallivores; thus, high abundances of piscivorous reef fish and sharks moderate coral predation. Abundances of piscivorous reef fish and sharks vary spatially because of different ecological conditions and human exploitation levels. Exposure to predation is also moderated by distance from physical conditions that allow corallivore populations to grow. For example, in the Indo-Pacific, high nutrient runoff from continents and high islands improves reproductive conditions for crown-of-thorns seastar, thus coral predation by crown-of-thorns seastar is moderated by distance from such conditions. Predation can also be moderated by depth of many habitats because abundances of many corallivorous species decline with depth. Exposure to predation can increase over time as conditions change, but may be moderated by distance and depth for certain species, which depends upon the distribution and abundances of the species.

Predation of coral colonies can increase the likelihood of the colonies being infected by disease, and likewise diseased colonies may be more likely to be preyed upon. There are likely other examples of cumulative and interactive effects of predation with other threats to corals.

Comment 28 suggested predation and exposure values for some individual species, but did not provide supplemental information on the threat. We also gathered supplemental information that supports and reiterates the analysis presented in the proposed rule. Bonaldo *et al.* (2011) documented spatial and temporal variation in coral predation by parrotfishes on the Great Barrier Reef. Lenihan *et al.* (2011) assessed the degree to which the performance of recently recruited branching corals was influenced by several factors, including corallivory. They found that partial predation by corallivorous fishes is an important but habitat-modulated constraint for branching corals and, overall, corallivory had variable effects on corals of different genera. Last, De'ath *et al.* (2012) documented that 42 percent of the decline in coral cover on the GBR is attributable to crown-of-thorns seastar predation.

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding predation remains unchanged from the proposed rule. Predation is a low importance threat in assessing global extinction risk for the 65 corals in this final rule. The impact of predation may be mediated by several factors and the extent to which the extinction risk of a coral species is impacted by predation depends on its particular level of susceptibility combined with its spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is considered for each species in the Species-specific Information and Determinations section.

Collection and Trade (Low Threat, ESA Factor B)

Collection and trade is considered under ESA Factor B—overutilization for commercial, recreational, scientific, or educational purposes. In the proposed rule, we described the threat of collection and trade as follows.

Globally, 1.5 million live stony coral colonies are reported to be collected from at least 45 countries each year, with the United States consuming the largest portion of live corals (64 percent) and live rock (95 percent) for the aquarium trade. The imports of live corals taken directly from coral reefs (not from aquaculture) increased by 600 percent between 1988 and 2007, while the global trade in live coral increased by nearly 1,500 percent. Harvest of stony corals is usually highly destructive, and results in removing and discarding large amounts of live coral that go unsold and damaging reef habitats around live corals. While collection is a highly spatially-focused impact, it can result in significant impacts and was considered to contribute to individual species' extinction risk. However, we ultimately ranked this threat as low overall because of species-specific factors (*i.e.,* some species are preferentially affected) as well as distance and depth factors that create barriers to human access.

As described in Comments 29 and 30, we received a significant amount of supplemental information via public comments and gathered supplemental information on three aspects of the threat of collection and trade on reef-building corals and coral reef ecosystems: (1) Wild collection of corals, including information about the physical and ecological impacts of wild collection of coral colonies and/or fragments from their natural habitats; (2) captive culture including information regarding the development of mariculture and aquaculture operations, as well as the role of home aquaria as they relate to trade, including all commercial, recreational, and educational coral-raising operations in marine environments as well as in captivity; and (3) the global marine ornamental trade industry, including detailed information regarding trade of both live and dead corals and other coral reef wildlife.

For the purposes of this final rule, collection and trade refers to the physical process of taking corals from their natural habitat on coral reefs for the purpose of sale in the ornamental trade industry. We define wild collection as the physical removal or capture of coral colonies, fragments, and polyps from their natural habitat. This section also discusses the use of captive breeding techniques via aquaculture and mariculture for the purposes of trade. Captive culture techniques are increasingly used to supply the aquarium trade industry and potentially reduce the amount of corals collected from the wild to meet demand (Thornhill, 2012; Wood *et al.,* 2012). We define aquaculture as the land-based ('ex situ') propagation or grow out of corals. Examples of this include corals grown in home aquaria or terrestrial coral farms. We define mariculture as the ocean-based ('in situ') propagation or grow out of corals. Examples of this include corals grown in coral farms and nursery areas in marine environments. The phrase ''captive culture'' is used interchangeably to refer to captive breeding of corals, both via aquaculture or mariculture techniques.

The ecological and socio-economic impacts of the ornamental trade industry for corals are numerous, and can include overharvesting, collateral damage to coral reef habitat, and potential introduction of exotic species (Rhyne *et al.,* 2012). Wild collection of stony corals is usually highly destructive, resulting in removing and discarding large amounts of live coral that often go unsold for various reasons. Additionally, collection techniques can be physically damaging to reef habitat around live corals. In a recent, thorough review of ecological impacts and practices of the coral reef wildlife trade, Thornhill (2012) identifies and describes five overarching potential impacts: (1) Effects on target population such as over-exploitation and local population extirpations; (2) habitat impacts such as reduced coral cover, diversity, and rugosity; (3) effects on associated species such as decreased abundance, biomass, and diversity of reef fish, invertebrates, and other species due to loss or destruction of habitat; (4) ecosystem impacts such as increased degradation and erosion leading to reduced resilience; and (5) socio-economic impacts such as user group conflict between tourists, fishers, *etc.*

Collection and trade of coral colonies can also increase the likelihood of the colonies being infected by disease, as a result of both the directed and incidental breakage of colonies, which are then more easily infected (Brainard *et al.,* 2011). Further, destructive practices for collection of other coral reef wildlife, such as the use of cyanide for capturing reef fish, can also have deleterious effects on coral reef habitat in general. Currently, cyanide fishing is practiced in 15 countries, many of which are major marine wildlife trade exporters (Thornhill, 2012). There are likely many other examples of cumulative and interactive effects of collection and trade that pose a threat to corals. Given the paucity of data for the coral reef wildlife trade, it is difficult to accurately estimate mortality rates directly resulting from collection practices (Thornhill, 2012).

The rapid increase of coral reef species entering markets in the United States and Europe and the sustainability of the aquarium trade in terms of driving collection of wild specimens have been of great concern to governments, scientists, conservationists, and conscientious aquarium hobbyists alike (Olivotto *et al.,* 2011; Rhyne and Tlusty, 2012). However, production of marine wildlife for home aquaria (*i.e.,* the aquarium hobbyist trade) through captive culture is an increasingly growing sector of the ornamental trade industry. Recently, advances in both aquaculture and mariculture propagation techniques show promise in shifting the demand of the ornamental trade industry away from wild-collected corals to corals reared via captive-culture techniques. Such techniques are possible since many corals, especially fast-growing branching corals, are capable of asexual reproduction via a process known as fragmentation or ''fragging'' (Brainard *et al.,* 2011; Rhyne *et al.,* 2012). According to CITES import and export reports, maricultured corals accounted for approximately 20 percent of total live trade in 2010 (Wood *et al.* 2012), but other studies suggest that captive-cultured corals account for only 2 percent of the live coral trade (Thornhill, 2012).

Globally, there are approximately two million aquarium hobbyists involved in a complex trade network that sells an estimated 50 million corals every year to use (Rhyne *et al.,* 2012). According to the Florida Department of Agriculture and Consumer Services, there are 87 certified aquaculture facilities listing corals as a product in Florida alone. The study hypothesized that a notable decline in U.S. imports of corals occurred after 2006 as a result of increased domestic coral production as well as the global economic downturn. Import reports do not account for this ''hidden'' domestic production, and statistical tracking of this type of coral production is lacking (Rhyne *et al.,* 2012). In addition to increasing domestic production of corals, some major source countries such as Indonesia are increasing production via mariculture activities to reduce wild collection pressure on coral reefs, and supporting coral farming as a potential alternative to fishing for reef fish and collection of wild corals (Pomeroy *et al.,* 2006). For example, according to 2009 U.S. import reports, 26 percent of *Acropora* species were identified under CITES codes which indicated that these colonies were produced via captive-

culture techniques (Rhyne *et al.,* 2012). However, since CITES codes are self-determined by exporter countries, there may be some inconsistencies in how those codes are applied (Wood *et al.,* 2012). As of 2008, there were 55 coral farms scattered throughout the different provinces of Indonesia (Timotius *et al.,* 2009); however, this number may be increasing since Indonesia's government has mandated companies and traders involved in the coral trade to utilize captive culture techniques in hopes of eventually phasing out wild collection of corals.

There are a number of challenges associated with developing aquaculture or mariculture operations for coral species, including technical capacity and know-how, high capital investments and operating costs, and high levels of production risk (Ferse *et al.,* 2012; Pomeroy *et al.,* 2006). Culturing corals has not been an easy task, predominantly due to the lack of knowledge regarding reproductive and larval biology for most traded species (Olivotto *et al.,* 2011). Further, most mariculture operations tend to focus predominantly on fast-growing corals, while successful propagation techniques for the popular slow-growing, large-polyp species have not yet been developed (Wood *et al.,* 2012). There is also the increasingly popular trend of using ocean-based coral nurseries for the purposes of propagating coral fragments to a suitable size and subsequently out-planting those coral fragments on degraded reefs to aid in reef restoration efforts. These types of activities are also considered in the Conservation Efforts section of the rule.

The export of marine organisms for the ornamental trade industry is a global industry. As described in the proposed rule, it is estimated that 1.5 million live stony coral colonies are collected from at least 45 countries each year, with an estimated 11 to 12 million coral pieces (*i.e.,* fragments from larger colonies) traded every year (Brainard *et al.,* 2011; Wabnitz, 2003). In addition to live stony corals, approximately 13 to 40 million reef fish, four million pounds of dead coral skeleton, and nine to 10 million other invertebrates are extracted from coral reef ecosystems across the world (Thornhill, 2012). For corals, trade can be broken down into several categories, including: Coral rock (*i.e.,* rock and substrate that may have live settled coral polyps among other marine organisms), live wild coral, live maricultured coral, and dead coral skeleton. Yet, numbers of corals traded in these categories are very difficult to accurately estimate for a variety of reasons. First, corals are colonial, vary in size, and can be fragmented into many smaller pieces. Additionally, reporting of trade volume is inconsistent and varies between reporting pieces and weight, and live rock and corals are often confused with each other and misreported (Thornhill, 2012). Currently, Indonesia is the primary source country of live corals; it exports approximately one million corals annually and represents an estimated 91 percent of the global supply market as of 2005 (Bruckner and Borneman, 2006; Thornhill, 2012; Timotius *et al.,* 2009). Other major exporters of scleractinian corals include Fiji, Solomon Islands, Tonga, and Australia. The largest importers of coral reef wildlife include the United States, European Union, and Japan. The United States accounted for an average of 61 percent of global imports from 2000–2010 (Wood *et al.,* 2012). Imports of live corals into the United States taken directly from coral reefs (not from aquacultured or maricultured sources) increased by 600 percent between 1988 and 2007, while the global imports of live coral increased by nearly 1,500 percent (Brainard *et al.,* 2011; Thornhill, 2012; Tissot *et al.,* 2010). Import and export data shows overall increasing trends for trade of live coral pieces between 2000–2009, with a slight dip in 2010 (Wood *et al.,* 2012). In addition, undocumented, illegal live coral trade is estimated to represent approximately 25 percent of the legal trade level, although these numbers are difficult to estimate considering the secretive nature of the illegal trade (Jones, 2008; Thornhill, 2012).

The international coral trade was established by 1950 and was dominated by the Philippines until 1977 when a national ban on wild collection and export was introduced (Wood *et al.,* 2012). It was then that Indonesia surpassed the Philippines to provide the majority of corals to the market. In the 1980s and 1990s, the international coral trade still focused on the trade of dead coral skeletons for home décor and curios. In recent years, the focus has shifted to live corals for the marine reef aquarium trade due to increased interest in home aquaria and advances in coral husbandry in North America and Europe, as well as the advent of modern air cargo methods (Rhyne *et al.,* 2012; Thornhill, 2012; Wood *et al.,* 2012). As stated previously, there is a complex global trade network of approximately two million aquarium hobbyists that sells upwards of 50 million coral reef animals every year (Rhyne *et al.,* 2012). Collection of corals for display in public aquaria for educational purposes represents a small portion of the coral reef wildlife trade, and public aquaria likely produce as many corals as they consume by using captive-culture techniques (Thornhill, 2012).

There has been some significant progress in captive culture of coral species using aquaculture and/or mariculture for the purposes of trade. Still, commercial-scale production of most species currently suffers several technical bottlenecks, including the long and often arduous supply chain from ocean to aquarium (*e.g.,* capture, collection, handling, and transport), which often results in mortality ranging from a few percent up to 80 percent. For example, in an analysis of confiscated coral shipments, a majority of the corals were found in poor condition. On the way to their final destination, coral colonies may experience significant temperature drops in the shipping water, poor water quality, and physical damage from repeated handling of the shipping boxes and bags resulting in mortality of a large proportion of colonies through subsequent bacterial infections (Jones, 2008). These non-reported rates of biomass loss may significantly underestimate the ecological impacts of the trade as more corals are collected to make up the losses (Cohen *et al.,* 2013; Thornhill, 2012). Distinguishing between specimens collected under regulated conditions from those collected using illegal or destructive fishing practices is very difficult (Cohen *et al.,* 2013; Wabnitz, 2003).

Traceability and tracking of cultured corals versus wild-collected corals is extremely difficult as there is no morphological or biological difference between them, making distinction almost impossible (Olivotto *et al.,* 2011). For example, a coral can be broken into fragments and labeled as cultured, when in fact it was collected from the wild. There is some evidence to suggest that culture of live corals has the potential to affect trends in the trade industry by reducing wild collection and provide an economically and financially feasible alternative livelihood for local communities in the Indo-Pacific. Even so, coral mariculture development in the Indo-Pacific is still in its infancy and requires a number of conditions to be met in order for these operations to be commercially profitable, sustainable, and traceable (Cohen *et al.,* 2013; Pomeroy *et al.,* 2006). It is also important to note that not all species lend themselves to culture. In fact, only a small number of coral genera have the ability to be commercially cultured (Rhyne *et al.,* 2012). According to some sources, approximately 98 percent of

live corals in the ornamental trade are still collected from the wild, with only 2 percent originating from captive bred sources such as coral farms and nurseries (Ferse *et al.,* 2012; Thornhill, 2012), but, according to a different analysis of import reports between 2000 and 2010, captive cultured corals made up approximately 20 percent of total imports, and these originated almost entirely from Indonesia (Wood *et al.,* 2012). Therefore, there are still significant data deficiencies and a large amount of uncertainty as to how much of an impact captive cultured corals are having on the ornamental trade.

Significant supplemental information was received in public comments on the proposed rule or otherwise gathered on collection and trade of coral species. As previously described in the SRR and proposed rule, there are numerous ecological impacts from the physical process of removing corals and other wildlife from the reef. Trade practices that rely on the collection of wild individuals may damage or destroy adult and juvenile reef corals. Additionally, removal of reef fish and other organisms for trade purposes may also result in ecological impacts to reef ecosystems (Brainard *et al.,* 2011). The ten most popular coral genera involved in the ornamental trade by volume are: *Acropora* (Indo-Pacific only), *Euphyllia, Goniopora, Trachyphyllia, Plerogyra, Montipora, Heliofungia, Lobophyllia, Porites,* and *Turbinaria* (Jones, 2008; Thornhill, 2012), all of which represent 31 of the coral species considered in this final rule. *Acropora* species are in the highest demand followed by the large polyp species such as *Euphyllia* (Jones, 2008). Culturing corals through aquaculture and/or mariculture techniques is becoming an increasingly popular tool to help move the aquarium trade away from collection of wild corals. Still, these techniques are fairly new and in need of many improvements before being considered a viable solution in shifting market demand from wild-collected to captive cultured corals. As it currently stands, the amount of unreported, illegal, and unregulated collection, combined with the large amount of biomass loss along the supply chain raises serious questions as to the sustainability of the ornamental trade (Cohen *et al.,* 2013). Overall, collection and trade of coral reef wildlife is considered to contribute to some individual species' extinction risk.

In our previous analysis, collection and trade were generally considered to be a threat to coral reefs, as well as particular individual coral species, but extinction risk as a result of collection and trade activities for the 65 corals proposed for ESA listing was considered to be ''low'' (Brainard *et al.,* 2011). After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding the threat of collection and trade remains unchanged from the proposed rule. Collection and trade is a low importance threat in assessing global extinction risk for the 65 corals in this final rule, and even less so for the seven Caribbean species due to undesirable appearance and growth characteristics for trade. The impact of collection and trade may be mediated by several factors and the extent to which the extinction risk of a coral species is impacted by collection and trade depends on its particular level of susceptibility, combined with its spatial and demographic characteristics in the context of worsening environmental conditions out to 2100, which is considered for each species in the Species Information and Determinations section. Information regarding the adequacy of regulations related to the marine ornamental trade such as CITES and other laws can be found in the Local Regulatory Mechanisms section of the Final Management Report (NMFS, 2012b). Additionally, coral restoration projects using ocean-based, nursery-reared corals are also becoming increasingly popular as a complement to existing management tools. Information related to the roles that coral farms, coral nurseries, and aquaria (both public and private) play in coral reef conservation is discussed in the Conservation Efforts sub-section of the rule.

Inadequacy of Existing Regulatory Mechanisms (ESA Factor D)

Regulatory mechanisms are considered under Factor D—Inadequacy of Existing Regulatory Mechanisms. As previously described in the proposed rule, we developed a Draft Management Report to assess the contribution of ''inadequacy of regulatory mechanisms'' to the extinction risk of corals. The Draft Management Report identified: (1) Existing regulatory mechanisms relevant to threats to the 82 candidate coral species; and (2) conservation efforts with regard to the status of the 82 candidate coral species. This Draft was peer reviewed and released with the SRR in April 2012, with a request for any information that we may have omitted. We incorporated all of the information we received into the Final Management Report, which formed the basis of our evaluation of this factor's effect on the extinction risk of the 82 candidate coral species in the proposed rule.

The Final Management Report identified existing regulatory mechanisms that were relevant to the threats to coral species. It was organized in two sections: (1) Existing regulatory mechanisms that are relevant to addressing global-scale threats to addressing other threats to corals. The proposed rule summarized the information from that report as follows.

Greenhouse gas emissions are regulated through multi-state agreements, at the international level, and through statutes and regulations, at the national, state, or provincial level. One of the key international agreements relevant to attempts to control GHG emissions, the Copenhagen Accord, was developed in 2009 by the Conference of Parties to the United Nations Framework Convention on Climate Change. The Copenhagen Accord identifies specific information provided by Parties on quantified economy-wide emissions targets for 2020 and on nationally appropriate mitigation actions to the goal of capping increasing average global temperature at 2 °C above pre-industrial levels. Overall, the proposed rule concluded that existing regulatory mechanisms with the objective of reducing GHG emissions were inadequate to prevent the impacts to corals and coral reefs from ocean warming, ocean acidification, and other climate change-related threats. After an in-depth analysis of international agreements to curb GHG emissions and their respective progress, it appeared unlikely that Parties would be able to collectively achieve, in the near term, climate change avoidance goals outlined via international agreements. Additionally, none of the major global initiatives appeared to be ambitious enough, even if all terms were met, to reduce GHG emissions to the level necessary to minimize impacts to coral reefs and prevent what are predicted to be severe consequences for corals worldwide. The evidence suggested that existing regulatory mechanisms at the global scale in the form of international agreements to reduce GHG emissions were insufficient to prevent widespread impacts to corals.

Existing regulatory mechanisms directly or indirectly addressing the localized threats identified in the proposed rule (*i.e.,* those threats not related to GHGs and global climate change) are primarily national and local fisheries, coastal, and watershed management laws and regulations in the 84 countries within the collective ranges of the 82 coral species. Because of the large number of threats, and the

immense number of regulatory mechanisms in the 84 countries, we concluded in the proposed rule that a regulation-by-regulation assessment of adequacy was not possible. Furthermore, with the exception of *Acropora palmata* and *A. cervicornis* in the Caribbean, there was not enough information available to determine the effects of specific regulatory mechanisms on individual coral species, given the lack of information on specific locations of individual species (the adequacy of existing local regulatory mechanisms relevant to threats impacting the Caribbean acroporids was evaluated in detail in those species' 2005 status review, and that information is incorporated into this rule's final findings for those species). However, general patterns included: (1) Fisheries management regimes regulate reef fishing in many parts of the collective ranges of the proposed coral species, albeit at varying levels of success; (2) laws addressing land-based sources of pollution are less effective than those regulating fisheries; (3) coral reef and coastal marine protected areas have increased several-fold in the last decade, reducing some threats through regulation or banning of fishing, coastal development, and other activities contributing to localized threats; and (4) the most effective regulatory mechanisms address the threats other than climate change. We generally concluded that because the local threats have impacted and continue to impact corals across their ranges, collectively, the existing regulations were not preventing or controlling local threats. Further, there was insufficient information to determine if an individual species was impacted by inadequacy of individual existing regulations.

We received public comments and supplemental information on the inadequacy of existing regulatory mechanisms. As a result, we incorporated any information we received into this final rule, which supplemented the basis for our final analysis and determination of the inadequacy of existing regulatory mechanisms in each species determination.

Comments 31–33 provided supplemental information, which we incorporated into this final rule. Specifically, we received information on how local management actions potentially confer resilience benefits to coral reef ecosystems. The public comments and supplemental information on the inadequacy of existing regulatory mechanisms are discussed below in three sections: (1) Updates to adequacy of global regulatory mechanisms; (2) updates to adequacy of local regulatory mechanisms; and (3) local management as it applies to reef resilience.

Since the release of the Final Management Report, there have been two additional conferences of the Parties to the United National Framework Convention on Climate Change. In 2012, the Parties met in Doha, Qatar, and they met again in Warsaw, Poland in 2013. The resulting decisions from both meetings were primarily to continue ongoing efforts to reach a new agreement for emissions reductions to be adopted at the 2015 meeting in Paris, and to have those implemented by 2020. The new agreement would maintain the same overall goal as the Copenhagen Accord, to cap additional warming at 2 °C. Within the United States, President Barack Obama released the President's Climate Action Plan in June 2013. The plan is three-pronged, including proposed actions for mitigation, adaptation, and international leadership. The actions listed for mitigation include completing carbon pollution standards for new and existing power plants, accelerating clean energy permitting, increasing funding for clean energy innovation and technology, increasing fuel economy standards, increasing energy efficiency in homes businesses and factories, and reducing other GHG emissions including hydrofluorocarbons and methane. The plan states that the United States is still committed to reducing GHG emissions 17 percent below 2005 levels by 2020 if all other major economies agree to similar reductions. Additional efforts made domestically related to climate change are more focused on facilitating adaptation to the impending changes to the environment due to climate change in order to maintain the country's natural and economic resources, but do not directly address the emission of GHGs.

As described in the proposed rule, existing regulatory mechanisms directly or indirectly addressing all of the localized threats identified in the SRR (*i.e.,* those threats not related to GHGs and global climate change) are primarily national and local fisheries, coastal, and watershed management laws and regulations in the 84 countries within the collective ranges of the 65 coral species. This final rule incorporates any information we received via public comment regarding recent local regulatory mechanisms or local regulatory mechanisms that were either previously mischaracterized or inadvertently omitted. This includes some additions of various local laws as well as supplemental information regarding regulations pertaining to collection and trade of coral species. In addition, to better capture the breadth and scope of existing regulatory mechanisms on a species-by-species basis, we evaluated the presence and scope of five different categories of regulatory mechanisms in each of the 84 countries throughout the ranges of the 65 corals in this final rule. These categories of laws include: General protection of corals, reef fishing, marine protected areas, wild collection, and pollution.

For each coral species, we considered the relevant national laws, regulations, and other similar mechanisms that may reduce any of the threats described in our threat analyses for all countries in which the coral species has confirmed records of occurrence. To find each country where our 65 coral species have confirmed occurrence we used Veron's updated report on the listed coral species and their occurrence in various ecoregions (Veron, 2014). In considering countries' regulatory mechanisms, we give strongest weight to statutes and their implementing regulations and to management direction that stems from those laws and regulations.

In analyzing local regulatory mechanisms available for each coral species, five general categories emerged: General coral protection, coral collection control, fishing controls, pollution controls, and managed areas. General coral protection regulatory mechanisms include overarching environmental laws that may protect corals from damage, harm, and destruction, and specific coral reef management laws. In some instances, these general coral protection regulatory mechanisms are limited in scope because they apply only to certain areas or only regulate coral reef damage and do not prohibit it completely.

Coral collection regulatory mechanisms include specific laws that prohibit the collection, harvest, and mining of corals. In some instances, these coral collection regulatory mechanisms are limited in scope because they apply only to certain areas or are regulated but not prohibited.

Pollution control regulatory mechanisms include oil pollution laws, marine pollution laws, ship-based pollution laws, and coastal land use and development laws. In some instances, pollution regulatory mechanisms are limited in scope because they apply only to certain areas or to specific sources of pollution.

Fishing regulatory mechanisms include fisheries regulations that pertain

to reefs or regulations that prohibit explosives, poisons and chemicals, electrocution, spearfishing, specific mesh sizes of nets, or other fishing gear. In some instances, fishing regulatory mechanisms are limited in scope because they apply only to certain areas, or not all reef-damaging fishing methods are prohibited, or reef-damaging fishing methods are regulated but not prohibited.

Managed area regulatory mechanisms include the capacity to create national parks and reserves, sanctuaries, and marine protected areas. In some instances, managed area regulatory mechanisms are limited in scope, primarily because the managed area provides limited protection for coral reefs, only small percentages of the countries' coral reefs are protected within the managed areas, or the managed areas are not well administered.

The management results for each species can be found in the Species-Specific Information and Determination section of this rule. It should be noted that while some of these regulatory mechanisms were categorized as ''limited in scope,'' it does not necessarily mean they are inadequate under ESA section 4(a)(1) Factor D.

We received a significant amount of information regarding the role of local management actions in building resilience into reef ecosystems. This section describes the emerging body of literature regarding the concept of reef resilience, defined as an ecosystem's capacity to absorb recurrent shocks or disturbances and adapt to change without compromising its ecological function or structural integrity. Until recently, the main drivers of coral reef decline included overfishing of herbivorous fish and nutrient loading from agriculture and other land-based sources of pollution. These stressors caused widespread changes in reef ecosystems over the past couple of centuries, and ultimately led to ecological shifts from coral-dominated systems to systems overrun by fleshy algae. These localized disturbances are now being compounded by climate change related threats, including increasingly frequent coral bleaching events as a result of ocean warming.

Many factors contribute to coral reef ecosystem resilience, including ecosystem condition, biological diversity, connectivity between areas, and local environmental conditions (Marshall and Schuttenberg, 2006; Obura, 2005). Implementing local actions that either protect or strengthen these resilience-conferring factors has the potential to help coral reef ecosystems survive predicted increases in the frequency, duration, and severity of mass coral bleaching events (Obura, 2005) and may help reduce the extinction risk of some individual coral species.

In terms of local management actions, many acute disturbances such as coral bleaching are out of the direct control of reef managers and cannot be mitigated directly. Actions that can be taken to build reef resilience and enhance reef recovery include reducing physical disturbance and injury as a result of recreational activities, managing local watersheds and coastal areas to prevent sedimentation and nutrient run-off, and reducing fishing pressures on important herbivorous fish (Jackson *et al.,* 2014; Kennedy *et al.,* 2013; Marshall and Schuttenberg, 2006; Mumby and Steneck, 2011). For example, a recent study shows that eutrophication can increase thermal stress on inshore reef communities and management actions to reduce coastal eutrophication can improve the resistance and resilience of vulnerable coastal coral reefs to ocean warming (Fabricius *et al.,* 2013). Additionally, herbivorous fish play a crucial role in the recovery of coral reefs after major disturbance events. Severe warming and increases in ocean acidification alone can reduce resilience of coral reef ecosystems, particularly if those systems are already subject to overfishing of the key functional groups of herbivorous reef fishes and nutrient loading (Anthony *et al.,* 2011; Bellwood *et al.,* 2004). Elevated populations of herbivores have the potential to confer resilience benefits by encouraging greater niche diversification and creating functional redundancy. For example, it has been demonstrated that two complementary herbivore species were more successful at controlling algal blooms than a single species on its own, and management of herbivorous fish can help in reef regeneration after episodes of bleaching or disease that are impossible to locally regulate (Bellwood *et al.,* 2004; Burkepile and Hay, 2008; Roff and Mumby, 2012). Conversely, even unexploited populations of herbivorous fishes do not guarantee reef resilience; therefore, some reefs could lose resilience even under relatively low fishing pressure (Cheal *et al.,* 2010). Therefore, the entire suite of local threats and disturbances should be minimized through local management actions to ensure that reef resilience and recovery are also maximized. Establishing MPA networks is generally accepted as one of the more common management tools to help reduce impacts to coral reefs and build resilience (Burke *et al.,* 2011; Keller *et al.,* 2009).

In a 2013 global review of 10,280 MPAs, it was found that approximately 2.93 percent of the world's oceans have MPA coverage; however, coverage does not necessarily equate to protection. Marine protected areas have often failed to prevent ongoing local threats such as overfishing due to management and/or design failure, as well as lack of local support, poor compliance, and inadequate resources to promote educational awareness and enforcement (Hughes *et al.,* 2007; Hughes *et al.,* 2010; Spalding *et al.,* 2013). A study by the World Resources Institute found that only 6 percent of the world's reefs occur in effectively managed MPAs (Burke *et al.,* 2011). Further, scientists are just beginning to understand spatial patterns of coral responses to disturbance. Efforts to identify coral reef areas with the greatest resilience are crucial for siting MPAs. This information has the potential to assist in future MPA design and management so that resistant patches of coral reef can be protected to ensure continued connectivity and subsequent recovery of nearby reefs that are less resistant. These strategies of tailoring management efforts across the marine environment depending on various responses to disturbance are still in their infancy, but it may eventually prove essential in adaptive management of reef resources in the face of future climate change-related disturbances (Mumby and Steneck, 2011). For these reasons, while MPAs are an important tool in response to the global degradation of coral reefs, they should not be considered a panacea (Hughes *et al.,* 2007).

In general, recent evidence suggests that management of local scale disturbances is essential to maintaining an adequate coral population density for successful reproduction and maintenance of genetic diversity and is therefore crucial to maintaining complex, bio-diverse coral reef ecosystems, given the predicted widespread impacts of climate change related threats (*e.g.,* Anthony *et al.,* 2011). The presence of effective local laws and regulations has the potential to help reduce impacts to coral reefs from threats on an ecosystem level, potentially extending the timeframe at which individual coral species may be in danger of extinction by providing a protective temporal buffer (*i.e.,* resiliency). Some evidence suggests that local management actions, particularly of fisheries (specifically, no-take marine reserves) and watersheds, can enhance the ability of species, communities, and ecosystems to tolerate climate change-

related stressors, and potentially delay reef loss by at least a decade under ''business-as-usual'' rises in GHG emissions (Keller *et al.,* 2008; Kennedy *et al.,* 2013). In the Caribbean especially, local regulation of fisheries for herbivorous fish species (specifically parrotfish) is deemed one of the most important local actions to safeguard coral reefs in the face of looming climate change threats (Jackson *et al.,* 2014). It also has been strongly suggested that local management be combined with a low-carbon economy to prevent further degradation of reef structures and associated ecosystems (Birkeland *et al.,* 2013; Kennedy *et al.,* 2013).

After considering this supplemental information in addition to that which was available for the proposed rule, our conclusion regarding the inadequacy of regulatory mechanisms addressing global threats to corals from GHG emissions remains unchanged from the proposed rule. That is, without any substantive changes in emissions reduction pledges from any major economies and without any noteworthy additional efforts to actually reduce GHG emissions, the supplemental information considered in this final rule regarding regulatory mechanisms does not change the previous analysis. We reach the same conclusions regarding local regulatory mechanisms as described in the proposed rule, with the exceptions of *Acropora palmata* and *A. cervicornis.* For these species, we have incorporated into this final rule, the analysis of adequacy of regulatory mechanisms included in the 2005 status review and 2006 listing of these species as threatened. Those documents concluded that existing regulatory mechanisms are inadequate to address local and global threats affecting these species, and as such are contributing to the threatened status of these species.

Because the local threats have impacted and continue to impact corals across their ranges, we still generally conclude that, collectively, the existing regulations are not currently preventing or controlling local threats across the entire range of any of the 65 species. We still do not have sufficient information to determine if an individual species' extinction risk is exacerbated by inadequacy of individual existing regulations. On the other hand, the best available information suggests that local management may confer resilience benefits for coral reefs on an ecosystem level, which could extend the timeframe at which individual coral species may be at risk of extinction by providing a protective temporal buffer in the face of climate change-related threats. That is, implementing effective local management actions may allow for coral to persist while awaiting significant global progress to curb GHGs. Overall, we maintain that in the absence of effective global regulatory mechanisms to reduce impacts from climate change to corals, the inadequacy of existing regulatory mechanisms at global and local scales poses an extinction risk threat to all of the corals that are vulnerable to climate-related threats.

Threats Evaluation Conclusion

The above information on threats to reef-building corals leads to several important overall points that apply both currently and over the foreseeable future. First, the period of time over which individual threats and responses may be projected varies according to the nature of the threat and the type of information available about that threat and the species' likely response. The threats related to global climate change pose the greatest potential extinction risk to corals and have been evaluated with sufficient certainty out to the year 2100. Second, we expect an overall increase in threats, especially those related to global climate change as projected by RCP8.5 to 2100. Third, RCP8.5's projections of conditions on coral reefs within the ranges of the species covered by this rule over the foreseeable future are based on spatially-coarse analyses associated with high uncertainty, in particular at local spatial scales. Finally and most importantly, determining the effects of global threats on an individual coral species over the foreseeable future is complicated by the combination of: (1) Uncertainty associated with projected ocean warming and acidification threats; (2) regional and local variability in global threats; (3) large distributions and high habitat heterogeneity of the species in this final rule; and (4) limited species-specific information on responses to global threats.

Thus, in our species determinations, we recognize that the best available information indicates the impacts of climate change will likely increase in the foreseeable future. However, there are limitations to using this global, coarse-scale information for determining vulnerability to extinction for individual coral species. Climate change projections over the foreseeable future are associated with three major sources of uncertainty; (1) The projected rate of increase for GHG concentrations; (2) strength of the climate's response to GHG concentrations; and (3) large natural variations. The recent warming slow-down is an example of a large natural variation that was not anticipated by previous models. Reports that discuss the future impacts of climate change on coral reefs indicate variability in both the models underlying these changes and the extent of potential impacts to the coral ecosystem. Recognizing uncertainty and spatial variability in climate change projections, and the spatial variability in environmental conditions on coral habitat, in our species determinations we emphasize the role that heterogeneous habitat and spatial and demographic traits play in evaluating extinction risk. We also consider in our determinations that each species in this final rule experiences a wide variety of conditions throughout its range that helps mitigate the impacts of global and local threats to some degree. Finally, we don't consider projections of impacts to coral reef ecosystems to definitively represent impacts to individual coral species, because coral reef communities typically consist of dozens to hundreds of reef-building coral species, each of which may respond differently to environmental and ecological changes. In addition, reef-building corals are not limited to occupying only coral reefs.

Risk Analyses

Many factors can contribute to an individual species' extinction risk. The process of extinction usually occurs in phases, first affecting individual populations or sub-populations, and then progressing to the species level. Extinction can occur as a result of stochastic processes that affect birth and death and mortality from catastrophic events. A species' biological traits can influence extinction risk both in terms of vulnerability to environmental perturbations and effects on population dynamics. Extinction risk is also influenced by depensatory effects, which are self-reinforcing processes (*i.e.,* positive feedbacks) that accelerate species loss as its population density declines.

The proposed rule described our framework for evaluating extinction risk and making listing determinations in the Risk Analyses section. There were multiple steps in our process of evaluating the listing status of each species. The initial step in developing the framework consisted of evaluating the ESA definitions of ''endangered'' and ''threatened'' and how those definitions apply to corals. The application of those definitions was based on the background of the Context for Extinction Risk and General Threats sections of the proposed rule.

We then considered the elements that contribute to the extinction risk of corals in the Risk Analyses section of the proposed rule. The following is a list

of the specific elements within their respective categories: (1) Vulnerability to threats, including each of the nine most important threats, based on a species' susceptibility and exposure to each of the threats; (2) demography, including abundance, trends in abundance, and relative recruitment rate; and (3) spatial structure, including overall distribution, which is a combination of geographic and depth distributions, and ocean basin. In order to evaluate the best available information for each of the 82 candidate corals and consider all elements in each of these categories, we developed a Determination Tool to organize and consistently interpret the information in the SRR, FMR, and SIR and apply it to the definitions of threatened, endangered, and not warranted species developed for corals, in a decision framework that we developed to specifically apply to corals.

In the proposed rule, we linked the major elements of our Risk Analyses, vulnerability to threats, demography, and spatial structure, to the ESA listing categories. We described endangered species as having a current extinction risk; they are highly vulnerable to one or more of the high importance threats and have either already been seriously adversely affected by one of these threats, as evidenced by a declining trend and high susceptibility to that threat, or they lack a buffer to protect them from serious adverse effects from these threats in the future. We described threatened species as not currently being in danger of extinction, but are likely to become so within the foreseeable future. They are highly or moderately vulnerable to one or more of the high importance threats or highly vulnerable to one or more of the lower importance threats, but have either not yet exhibited effects in their populations or they have the buffering protection of more common abundance or wider overall distribution. We described not warranted species as not being in danger of extinction currently and not likely to become so within the foreseeable future because they have: Low vulnerability to the high importance threats, or low or moderate vulnerability to all the lower importance threats, and common abundance or wide overall distribution.

The proposed rule described the basis for our determination of the foreseeable future for the purposes of projecting climate-related threats in the Threats Evaluation and Risk Analyses sections, and was supported by several other sections (*e.g.,* Global Climate Change—Overview). Consistent with our practice for all species listing determinations, we established that the appropriate period of time corresponding to the foreseeable future is a function of the particular type of threats, the life-history characteristics, and the specific habitat requirements for the coral species under consideration. The timeframe established for the foreseeable future considered the time necessary to provide for the conservation and recovery of each threatened species and the ecosystems upon which they depend. It was also a function of the reliability of available data regarding the identified threats and extends only as far as the data allow for making reasonable predictions about the species' response to those threats. We agreed with the BRT's assessment that the threats related to climate change had been sufficiently characterized and predicted through the end of this century. Therefore, in the proposed rule, we determined the year 2100 to be the appropriate outer limit of foreseeability as to climate change-related threats.

In the proposed rule, we evaluated each species throughout its entire range, because no SPOIRs were identified, and that assessment has not changed in the final rule as described further below in the Statutory Standards sub-section. While we did receive additional qualitative information on the abundances and distributions of the 65 proposed species, nothing in that data indicated that any portions of the range of any of the species warranted further evaluation under the applicable standards of the final SPOIR Policy, as discussed in the Statutory Standards sub-section below. The last step in developing the proposed listing determinations was to evaluate ''Conservation Efforts'' to determine if they would change the basis for listing a species by alleviating threats or recovering populations. We concluded that conservation efforts on global and local scales did not change the status determined using our decision framework for any of the 82 candidate species.

Comments 32–34 and 37–42 focused on four aspects of the listing determination process in the proposed rule: (1) The Determination Tool, (2) the foreseeable future, (3) the SPOIR analysis, and (4) conservation efforts. The comments we received identified deficiencies in the proposed rule's Determination Tool, leading to a change in our approach from a formulaic framework to describe extinction risk, to a non-formulaic framework to describe vulnerability to extinction. That is, the final determination framework integrates different types of information in a holistic manner that better represents all the available information, including complexity and uncertainty, than was possible using the linear Determination Tool in the proposed rule. In this section, we explain the final determination framework process that we used to determine each of the species' statuses, how it is different from the proposed rule, and how new and supplemental information was incorporated.

In the proposed rule we described our determination approach in the Risk Analyses and Detailed Description of Determination Tool Elements sections, in which we discussed the elements that affect a coral's extinction risk. Below we describe how that determination approach has been adapted for this final rule and applied to the Statutory Standards, in light of and in response to public comments.

Final Determination Framework

Overview of Key Changes Applied in Final Determinations. We received many comments questioning the accuracy of the methods used to analyze the available information to assess extinction risk and derive listing statuses for each of the proposed species, including how the Determination Tool was used. After considering these comments, and as discussed above, our findings in the proposed rule were influenced by how we believed coral species would react to environmental changes now and over the foreseeable future. Given the current effects and projections of climate change impacts to the marine environment into the foreseeable future and the information we had at the time of the proposed rule on coral response to existing and predicted environmental stressors, we determined that many of the coral species met the definition of ''endangered species'' or ''threatened species.'' In explaining how the Determination Tool assessed risk and derived listing statuses we concluded that, as some public comments suggested, the Determination Tool was too linear and deterministic. This led to listing determinations in the proposed rule that were based, in large part, on applying the endangered and threatened standard to relative characteristics instead of applying the endangered and threatened standard to each individual species independently to determine their listing status.

In this rule, we have changed our determinations for many of the species for two general reasons: (1) Informed by public comments, we refined the way we apply the available information to determine vulnerability to extinction; and (2) we received via public comments, or gathered ourselves,

information that expanded our existing knowledge.

We received and gathered specific information about spatial, demographic, and other characteristics of individual coral species, and the public comments provided general scientific criticism about how we weighed these factors. In the proposed rule, we gave greater consideration to susceptibility to threats but did not fully recognize the extent to which spatial, demographic, and other characteristics of corals can moderate vulnerability to extinction. After considering all of the available information and public comments, in this final rule we continue to recognize the threats that the species face, but we also place more emphasis on buffers against those threats and revisit the predicted population responses of individual species to the threats, giving full consideration to their current spatial, demographic, and other characteristics. For example, we took into account that many of the species, when viewed on their own rather than in relation to other coral species or vertebrate species, have more substantial absolute abundances than the prior methodology accounted for.

We also took into account that in many instances coral species occupy a wide range of habitats, including areas that can act as refugia from warming, which moderate the predicted impacts across coarse-scale areas. As explained generally above, and in regard to individual species below, the species in this final rule will be negatively impacted by future conditions, but in light of our consideration of factors and characteristics discussed above, we find they are not currently in danger of extinction and do not meet the definition of endangered. We do, however, conclude that some species are likely to become in danger of extinction within the foreseeable future and thus meet the definition of threatened. We also find that listing is not warranted for some species that were previously proposed for listing.

In this final rule, we acknowledge that there are no recipes or formulas for endangered, threatened, or not warranted coral species, especially given the variability in coral species' biology and ecology, and the variability in available information from species to species. Accordingly, the final framework allows for consideration of each coral's circumstances as a whole (simultaneously evaluating each species' demography, spatial characteristics, threat susceptibilities, and current and future environmental conditions independently of the other species), leading us to species-specific conclusions about vulnerability to extinction.

The final determination framework used in this final rule is composed of seven elements. The first element is describing the statutory standards. The second, third, fourth, and fifth elements are identifying and analyzing all the appropriate species-specific and general characteristics that influence extinction risk for a coral species. The sixth element is relating a species' characteristics to a particular extinction risk at appropriate spatial and temporal scales. The seventh element is explicitly stating how each species' extinction risk meets the statutory listing definitions as applied to corals, resulting in an ultimate listing status. A final consideration in evaluating listing status is whether current or planned conservation efforts improve the overall status of any of the 65 species such that the additional protections of the ESA are not warranted.

In moving to an integrated, non-formulaic framework, some of our key assumptions about vulnerability to extinction changed due to analyzing the different aspects of each species' characteristics independently (on an absolute scale), instead of being rated with the other proposed corals species (on a relative scale). We rely on the following guiding principles extracted from each of the sections in the first part of this rule, providing the context and background information for the species determinations, in order to determine each species' listing status:

- Clonal, colonial organisms, such as corals, are vastly different in their biology and ecology than many other species listed by NMFS under the Endangered Species Act.
- In our species determinations, we give appropriate consideration to the complex nature of coral biology and variability in responses to threats between individual coral colonies and even between different portions of the same colony.
- In our species determinations, absolute abundance and absolute distribution inform our evaluation of a species' current status and its capacity to respond to changing conditions over the foreseeable future.
- The concept of heterogeneous habitat influences extinction risk for all species in this final rule because each species experiences a wide variety of conditions throughout its range, which allows for variable responses to global and local threats.
- We recognize that the best available information indicates the impacts of climate change will likely increase in the foreseeable future. However, there are limitations to using this global, coarse-scale information for determining vulnerability to extinction for individual coral species.
- In our species determinations, we don't consider projections of impacts to coral reef ecosystems to definitively represent impacts to individual coral species, because coral communities typically consist of dozens to hundreds of coral species, each of which may respond differently to environmental and ecological changes.
- Recognizing the uncertainty and spatial variability in climate change projections, and the spatial variability in environmental conditions on coral habitat, in our species determinations we emphasize the role that heterogeneous habitat and absolute demographic and spatial characteristics play in evaluating extinction risk.

We have ordered the informational categories in the Species-specific Information and Determinations sections below for clarity in describing the species-specific elements and their interaction in contributing to each species' vulnerability to extinction as follows: (1) Spatial Information—overall distribution and ocean basin, habitat; (2) Demographic Information—abundance, trends in abundance, relative recruitment rate; and (3) Susceptibility to threats based on a species' susceptibility to each of the nine threats. Further, when information is available that does not fall into one of the categories or elements identified above, but is relevant to extinction risk, we provide it under the Other Biological Information category. In each species determination, we refer back to the specific guiding principles that played a role in how we consider the species-specific information and the sections in which they are described in more detail.

Statutory Standards

The definitions of endangered and threatened species under section 3 of the ESA, wherein (1) an ''endangered species'' is defined as ''any species which is in danger of extinction throughout all or a significant portion of its range'', and (2) a ''threatened species'' is defined as ''any species which is likely to become an endangered species in the foreseeable future throughout all or a significant portion of its range,'' formed the basis of our determination framework. Considered at both the spatial and temporal scales applicable to each of those listing statuses, an endangered species *currently* faces an extinction risk throughout *all or a significant portion of its range* and a threatened species is likely to become endangered throughout

all or a significant portion of its range within the foreseeable future. In other words, the primary statutory difference between a threatened and endangered species is the timing of when a species may be in danger of extinction, either presently (endangered) or in the foreseeable future (threatened). Further, as discussed below, no significant portions of their ranges could be determined for any of our proposed species; thus, the only spatial scale we consider is each species' entire range.

Court opinions produced in litigation challenging the listing of the polar bear as threatened provides a thorough discussion of the ESA's definitions and the Services' broad discretion to determine on a case-by-case basis whether a species is in danger of extinction (*see, In Re Polar Bear Endangered Species Act Listing and § 4(d) Rule Litigation,* 794 F. Supp.2d 65 (D.D.C. 2011); *aff'd,* 709 F.3d 1 (D.C. Cir. 2013); 748 F. Supp.2d 19 (D.D.C. 2010)). The Court determined that the phrase ''in danger of extinction'' is ambiguous. The Court held that there is a temporal distinction between endangered and threatened species in terms of the proximity of the ''danger'' of extinction, noting that the definition of ''endangered species'' is phrased in the present tense, whereas a threatened species is ''likely to become'' so in the future. However, the Court also ruled that neither the ESA nor its legislative history compels the interpretation of ''endangered'' as a species being in ''imminent'' risk of extinction. Thus, in the context of the ESA, a key statutory difference between a threatened and endangered species is the timing of when a species may be in danger of extinction, either now (endangered) or in the foreseeable future (threatened). The Court ruled that although imminence of harm is clearly one factor that the Services weigh in their decision-making process, it is not necessarily a limiting factor, and that Congress did not intend to make any single factor controlling when drawing the distinction between endangered and threatened species. In many cases, the Services might appropriately find that the imminence of a particular threat is the dispositive factor that warrants listing a species as 'threatened' rather than 'endangered,' or vice versa. To be listed as endangered does not require that extinction be certain or probable, and that it is possible for a species validly listed as ''endangered'' to actually persist indefinitely. Due to the ambiguous nature of the statutory terms, we have defined ''endangered'' and ''threatened'' at the end of the Foreseeable Future sub-section below in the context of the particular species (corals) being considered for listing.

Significant Portion of its Range (SPOIR). The ESA's definitions of ''endangered species'' and ''threatened species'' refer to two spatial scales, providing that a species may be imperiled ''throughout all'' of or ''in a significant portion of'' its range. 16 U.S.C. 1532(6); (20). NMFS has interpreted the ''significant portion of its range'' language in a policy that has recently been finalized. *See* ''Final Policy on Interpretation of the Phrase 'Significant Portion of its Range' in the Endangered Species Act's Definitions of 'Endangered Species' and 'Threatened Species' '' (79 FR 37578; July 1, 2014) (''Final Policy''). In developing our proposed rule, our analysis was informed by the Draft Policy that was published in December 2011 (76 FR 76987; December 9, 2011). As we explained in the proposed rule, we were unable to identify any portions of the species' ranges that might require closer analysis as potential SPOIRs, due in large part to a lack of species-specific information regarding abundance, geographic distribution, diversity, and productivity (77 FR 73247).

The Final Policy, which we must now apply, differs in two key respects from the Draft Policy. Neither changes the ultimate result in this case, which is that no SPOIRs can be identified. First, the Final Policy specifies that no portions of a species' range can be ''significant,'' and thus no SPOIR analysis need be done, where the range-wide status analysis leads to a conclusion that listing the entire species as threatened or endangered is warranted. (Under the Draft Policy, even if a species were found to warrant listing as ''threatened,'' the agency still needed to consider whether any portions of the range may be significant). Second, the final policy defines ''significant'' to include not only those portions where the individuals are so biologically significant that without them the entire species would meet the definition of ''endangered'' (the standard in the Draft Policy), but also those portions whose loss would render the species ''threatened.''

In this case, our framework evaluates each species throughout its range to determine extinction risk. If a species is determined to be threatened or endangered based on the rangewide analysis, no further evaluation is warranted. However, if a species is found to be not warranted at the spatial scale of its entire range, we must consider if a SPOIR exists that may be both highly biologically important and at higher extinction risk, such that its loss would render the entire species endangered or threatened. An evaluation is required only where there is information to suggest that a particular portion of the range is likely to be both ''significant'' as defined in the policy and to qualify as endangered or threatened (79 FR 37586).

As described in the proposed rule, the BRT did not identify any portions of the range for any of the 82 coral species as being potentially ''significant'' or at a higher extinction risk. Because there was a general lack of species-specific data regarding quantitative abundance, distribution, diversity, and productivity of coral species, we were not able to identify any portions of any of the species' ranges that could be considered unusually biologically significant. Further, we had no information to indicate that particular local threats were more severe in a particular portion of an individual species' range.

No supplemental information was received in response to the proposed rule that provides support for identification of a SPOIR for any of the proposed species. While we did receive supplemental information on the qualitative abundances and distributions for some species, nothing in that data suggests that any particular portion of any proposed species range is unusually biologically significant. We do not have any information that would help elucidate whether any species is at higher exposure to threats in a particular area of its range (*i.e.,* where threats may be so acute or concentrated that current conditions are likely to render the species there at significantly higher risk of extinction than the overall species). Thus, we did not identify any SPOIR for any species, and so our determination as to each species is based on the best available information about the species' status throughout its range.

Foreseeable Future. The ''foreseeable future'' is integral to the definition of a threatened species. It is the timeframe over which we evaluate a species' extinction risk if it is not currently in danger of extinction. As described in the proposed rule, the identification of the foreseeable future is unique to every listing decision. It is based on the particular type of threats, the life-history characteristics, and the specific habitat requirements for the species under consideration.

For this Final Rule, we clarify that the ''foreseeable future'' is that period of time over which we are able to make reliable projections about all of the significant threats affecting the species and the species' likely response to those

threats. Projections need not be ''certain'' to be reliable, so long as we are able to make predictions with a reasonable degree of confidence based on available information. In the proposed rule, we identified the year 2100 as marking the outer limit of the foreseeable future based upon the ability to make projections about the primary threats to corals—those stemming from global climate change—over that period (77 FR 73226). However, in identifying 2100 as the limit of the foreseeable future for purpose of analyzing those threats, we did not intend to establish that year as the only relevant benchmark for analyzing all threats to the species or the species' response thereto.

Because neither the ESA nor implementing regulations define ''foreseeable future,'' the term is ambiguous, and Congress has left broad discretion to the Secretary to determine what period of time is reasonable for each species. This does not require identifying a specific year or period of time to frame our analysis, particularly where there is inadequate specific data to do so. *See* ''Memorandum Opinion: The Meaning of 'Foreseeable Future' in Section 3(20) of the Endangered Species Act'' (M–37021, Department of the Interior Office of the Solicitor, January 16, 2009). The appropriate timescales for analyzing various threats will vary with the data available about each threat. In making our final listing determinations we must synthesize all available information and forecast the species' status into the future only as far as we reliably are able based on the best available scientific and commercial information and best professional judgment.

In the case of corals, we can make reasonable assessments as to the most significant environmental factors facing the coral species between now and 2100. We have explained that this time period, which is consistently used by most current global models and the IPCC reports, allows for reliable and reasonable projections about climate change-related threats. As described in the Threats Evaluation—Foreseeable Future and Global Climate Change Overview sections above, 2100 was selected as the limit of foreseeability for climate change-related threats based on AR4's and AR5 WGI's use of 2100 as the end-point for most of its global climate change models (IPCC, 2013). Public comments asserted that the models used in climate predictions are too uncertain to reliably predict climate conditions out to 2100. However, as we have explained in our response to Comment 38 and elsewhere in this final rule, supplemental information supports, and we reaffirm our choice of, identifying 2100 as the timeframe over which we can make reliable predictions about climate change-related threats.

However, global climate change is not the only relevant threat to the species, and the range of available data differs as to these other threats (such as predation, sedimentation, *etc.*). Further, in reaching our conclusions and ultimate listing determinations, we need to assess how the species will react to the various stressors identified in this rule. For example, to the extent it was available, we considered a significant amount of information on the current spatial and demographic features of the species, based on various types of information which support varying degrees of projection into the future. Thus, while the year 2100 is a reliable end-point for projecting climate change-related threats, it is not valid across the range of threats for the species and should not be misunderstood as driving our forecasts of the species' statuses.

For all of these species, we concluded based on the best available scientific and commercial information that their spatial, demographic, or other characteristics buffer them against current endangerment of extinction. However, over the foreseeable future, the ability of spatial and demographic traits to provide a buffer against the danger of extinction is expected to diminish as colonies within particular areas are impacted due to climate change and other negative stressors. We considered, at a species level, whether these predicted conditions may cause the species to become in danger of extinction within the foreseeable future. However, there are varying degrees of certainty about the responses of corals to stressors. We can be confident that certain mitigating elements of the life history for some of these species will not change, such as their ability to reproduce asexually or the ability to persist in a range of depths. But we are less confident in other aspects, such as precisely where and when local extirpations may occur.

For this final rule, then, we make clear that our listing determinations are reached on the totality of the best available information about the threats to the species and the species' likely response to them over time. Our determinations reflect our consideration of that information, as well as application of our professional judgment regarding how far into the future we can reliably project either the underlying threats or the species' response. However, in light of the number of variables pertaining to the stressors and buffering traits among the corals species evaluated, and the limited availability and incomplete nature of quantitative data on these species, a quantitative assessment of these projections is not possible. Therefore our assessment of the foreseeable future is necessarily qualitative. Given the biological traits and life history strategies of the corals evaluated in this rule, including their relatively long life-spans, the period of time over which we are able to make reliable projections is the next several decades. This general timeframe thus frames our listing determinations. Although we recognize that climate related threats will persist beyond this horizon, we find it both infeasible on the information available and unnecessary to attempt to identify the foreseeable future across the full range of threats to the species and the species' response with more precision.

In the proposed rule, we considered how the temporal scales were appropriately factored into our evaluations of whether a species was in danger of extinction now, likely to become in danger of extinction in the foreseeable future, or not warranted for listing. For example, two major factors determining the immediacy of the danger of extinction for corals are the relatively high degree of certainty of impacts from high importance threats and a species' current or future capacity to resist adverse effects. Under the proposed rule's Determination Tool approach, endangered species were species with a current high extinction risk; they were highly vulnerable to one or more of the high importance threats and had either already been seriously adversely affected by one of these threats, as evidenced by a declining trend, and high susceptibility to that threat, or they lacked a buffer to protect them from serious adverse effects from these threats in the future. While a threatened species under the proposed rule might be impacted by the same threats as an endangered species, it was less exposed or less susceptible, providing greater buffering capacity to those same threats when compared to an endangered species.

In response to public comments critical of our equating species' listing statuses with outcomes of the determination tool, here we more fully explain the biological characteristics and distinctions between endangered and threatened corals, and corals not warranting listing under the ESA. Under the final rule's determination framework, an endangered species is at such risk of extinction, that it is currently ''in danger'' of extinction throughout its range. As such, an endangered coral species is of such low

abundance or is so spatially fragmented that the species is currently in danger of extinction. Several processes may contribute to the danger of extinction (*e.g.,* depensatory process, catastrophic events). Depensatory processes include reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding. A coral species with these characteristics would be vulnerable to background environmental variation if a large proportion of the existing population were concentrated in an area that experienced an environmental anomaly leading to high mortality. Similarly, an endangered coral species could be of such low abundance that one catastrophic event or a series of severe, sudden, and deleterious environmental events could cause mortality of a large enough proportion of the existing population that the remaining population would be unable to reproduce and/or recover. A coral species that meets the endangered standard is not necessarily characterized by a single factor (*e.g.,* abundance number, density, spatial distribution, or trend value) but could also be characterized by combinations of factors encompassing multiple life history characteristics and other important ecological features, as described above. Different combinations of such factors may result in endangered status from species to species.

Under the final rule's determination framework, a threatened coral species also is at a risk of extinction due to its spatial and demographic characteristics and threat susceptibilities; however those traits still provide sufficient buffering capacity against being in danger of extinction currently. In other words, the species has an abundance and distribution sufficient for it to be not currently of such low abundance or so spatially fragmented to be in danger of extinction, but is likely to become so within the foreseeable future throughout it range. Similar to an endangered species, a coral species that meets the threatened standard is not necessarily characterized by a single factor (*e.g.,* abundance number, density, spatial distribution, or trend value) but could also be characterized by combinations of factors encompassing multiple life history characteristics and other important ecological features, as described above. Different combinations of such factors may result in threatened status from species to species.

Thus, there is a temporal distinction between endangered and threatened species in terms of the proximity of the danger of extinction based on the sufficiency of characteristics to provide buffering capacity against threats that cause elevated extinction risk. It is worth noting that this temporal distinction is broad, and a threatened species could likely become an endangered species anytime within the foreseeable future.

Under the final rule's determination framework, a coral species that is not warranted for listing has spatial and demographic traits and threat susceptibilities that, when considered in combination, provide sufficient buffering capacity against being in danger of extinction within the foreseeable future throughout its range. In other words, it has sufficient abundance and distribution, when considering the species' threat susceptibilities and future projections of threats, it is not likely to become of such low abundance or so spatially fragmented to be in danger of extinction within the foreseeable future throughout its range. A not warranted species also may not be susceptible to the threats at a sufficient level to cause any major change in the species abundance.

In summary, the basic structure of our final determination framework is formed by the relevant spatial and temporal scales over which each coral species' extinction risk is evaluated. An endangered coral species is *currently* in danger of extinction throughout its entire range. A threatened species is *likely to become* endangered throughout its entire range within the foreseeable future.

Spatial Structure

We consider spatial elements that increase a species' risk of extinction, alone or in combination with other threats, under ESA Factor E—other natural or manmade factors affecting the continued existence of the species. Spatial structure is important at a variety of scales. At small spatial scales within a single population, issues of gamete density and other Allee effects can have significant impacts on population persistence. At large spatial scales, geographic distribution can buffer a population or a species from environmental fluctuations or catastrophic events by ''spreading the risk'' among multiple populations. We explicitly described how exposure to individual threats varies at different spatial scales in the Threats Evaluation section above. Generally, having a larger geographic or depth distribution provides more potential area to occupy. However, if populations become too isolated gene flow and larval connectivity may be reduced, making the species less likely to recover from mortality events. Thus, a robust spatial structure includes larger geographic distributions with adequate connectivity to maintain proximity of populations and individuals within the range. We consider geographic distribution and depth distribution (and connectivity, when we have that information) in describing the overall distribution for each species.

We also consider the ocean basin in which a species exists. As described in the Corals and Coral Reefs—Inter-basin Comparisons, the Indo-Pacific occupies at least 60 million square km of water (more than ten times larger than the Caribbean), and includes 50,000 islands and over 40,000 km of continental coastline, spanning approximately 180 degrees of longitude and 60 degrees of latitude. Thus, occupying only a small portion of the Indo-Pacific basin can still be a geographically large distribution for an individual coral species. In contrast, the Caribbean basin is relatively geographically small and partially enclosed, but biologically well-connected. The Caribbean also has relatively high human population densities with a long history of adversely affecting coral reef systems across the basin. In the proposed rule we determined that if a species is restricted to the Caribbean, its overall range was considered narrow and its extinction risk was significantly increased, which greatly contributed to an endangered or threatened determination. Comment 40 criticizes our characterization of the Caribbean in this manner, stating that the BRT's determination that the entire Caribbean is sufficiently limited in geographic scale to be a factor that increases the extinction risk of all corals in the Caribbean is at odds with genetic data. The commenter provided references to support the conclusion that, while it is clear that regional-scale processes such as bleaching and disease are acting on all these reefs in the Caribbean basin simultaneously, all reefs should not be presumed to respond the same to these disturbances. Upon consideration of the comment and the fact that the Determination Tool ratings regarding basin occupancy were an inadvertent function of comparing the Caribbean basin to Indo-Pacific basin (*i.e.,* the automatic increase in extinction risk for species occurring in the smaller, more disturbed Caribbean was only relative in comparison to species occurring in the larger, less disturbed Indo-Pacific) we re-evaluated our characterization of the Caribbean. We now consider the absolute (non-relative) size of the basin and the amount of heterogeneity in the system; therefore, we no longer

conclude that presence within the Caribbean basin automatically increases extinction risk (because many of the Caribbean coral species occupy a large portion of habitat compared to the total habitat available to them and the heterogeneous nature of that habitat). In general, we still consider distribution in the Caribbean to be problematic, but will now consider the influence of a Caribbean distribution on extinction risk on a species-by-species basis. For example, if a species has a Caribbean-wide geographic distribution and large depth distribution, and isn't susceptible to or exposed to threats now or through the foreseeable future, then a Caribbean basin distribution alone doesn't automatically increase the species' extinction risk. In the Species-specific Information and Determinations section of this final rule, we describe the extent to which an individual species' extinction risk is influenced by its specific geographic, depth, and habitat distributions within each basin.

Demography

Demographic elements that cause a species to be at heightened risk of extinction, alone or in combination with threats under other listing factors, are considered under ESA Factor E—other natural or manmade factors affecting the continued existence of the species. In the proposed rule, we used species-specific qualitative abundance estimates, coded as ''common,'' ''uncommon,'' or ''rare'' for the candidate species because it was the only abundance metric that was available for all of the 82 candidate species. As mentioned above in the Distribution and Abundance of Reef-building Corals sub-section, these qualitative estimates are the subjective opinion of particular authors on their particular survey data and are meant to indicate relative abundance between the categories. That is, a rare species has fewer individuals as compared to an uncommon one, and an uncommon species has fewer individuals than a common one. These estimates are also meant to describe an author's opinion of the qualitative abundance of the species throughout its range, but not an estimate of the abundance at an individual location. In general, ''rare'' or ''uncommon'' species are more vulnerable than ''common'' ones, although some species are naturally rare and have likely persisted in that rare state for tens of thousands of years or longer. However, naturally rare species can be at greater risk of extinction than naturally more common species when confronted with global threats to which they are vulnerable. In our final determination framework, rarity or uncommonness may increase extinction risk, but alone it does not automatically contribute to a finding of an endangered or threatened status.

Trends in abundance directly demonstrate how a particular species responds under current or recent-past conditions. Generally, a continuing downward trend likely increases extinction risk, while stabilization or a continuing upward trend likely decreases extinction risk. Trend data for the 65 species are scarce, but we describe the extent to which an individual species' extinction risk is influenced by its trend data when the information is available.

Productivity is another important indicator of extinction risk. Productivity is defined here as the tendency of the population to increase in abundance and is often expressed as ''recruits per spawner,'' although the term ''recruit'' can be difficult to apply in the case of corals, which reproduce both sexually and asexually (see Individual Delineation sub-section). Some of the proposed coral species are long-lived, with low or episodic productivity, making them vulnerable to trends of increased mortality or catastrophic mortality events. Overall, recruitment rate estimates for the proposed species are scarce, but in cases where estimates were available analysis of how that species' extinction risk is influenced by its relative recruitment rate is considered in the Species-specific Information and Determinations section below.

Susceptibility to Threats

Susceptibility of a coral species to a threat is primarily a function of biological processes and characteristics, and can vary greatly between and within taxa. Susceptibility of a species to a threat depends on the combination of: (1) Direct effects of the threat on the species; and (2) the cumulative and interactive (synergistic or antagonistic) effects of the threat with the effects of other threats on the species. In the proposed rule, we considered how the cumulative or interactive effects altered the rating assigned to a threat susceptibility in isolation. However, upon further consideration, we need to evaluate the extent to which one threat influences the susceptibility of an individual species to another threat with more species-specific information, in connection with all the other elements that influence a species' extinction risk. Generally, cumulative and interactive processes are complex and uncertain and existing information about threats interactions is only based on a few studies on a few species. Where possible, when we have species-specific cumulative or interactive effects information, we have applied this information to that particular species' susceptibilities in a more integrated manner. Species-specific threat susceptibilities are described in the Species-specific Information and Determinations section.

The three most important threats that contribute to the proposed coral species' extinction risk are ocean warming, disease, and ocean acidification. We considered these threats to be the most significant threats posing extinction risk to the proposed coral species currently and out to the year 2100. Threats of lower importance (trophic effects of reef fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade) also contributed to our findings on extinction risk, but to a lesser extent.

Current and Future Environmental Conditions

The general information described in the preceding sections of this final rule illustrates that the most important threats are currently increasing and likely to increase further in the foreseeable future (Threats Evaluation), but that the impacts from these threats currently and in the foreseeable future are difficult to interpret and do not necessarily correlate to an increased vulnerability to extinction due to the biological and physical complexity of corals and their habitat (Corals and Corals Reefs, Threats Evaluation).

The information on corals, coral reefs, coral habitat, and threats to reef-building corals in a changing climate leads to several important points that apply both currently and over the foreseeable future. First, the foreseeable future for purposes of our ultimate listing determinations is described qualitatively and encompasses the next several decades. For purposes of analyzing the specific threats related to climate change, we have identified the foreseeable time period over which we can make reliable projections to extend over the period from now to the year 2100. There is increased uncertainty over that time period as conditions that are analyzed closer to the year 2100 become less foreseeable. That is, the general trend in conditions during the period of time from now to 2100 is reasonably foreseeable as a whole, but conditions become more difficult to accurately predict through time. Second, there is an overall increasing trend of threat severity, especially for threats related to global climate change as projected by RCP8.5 to 2100. Third, while some models suggest disastrous

effects of RCP8.5 on coral reefs by 2100, such projections are based on spatially coarse analyses associated with high uncertainty, especially at local spatial scales. In sum, determining the effects of global threats on an individual coral species over the foreseeable future is complicated by the combination of: (1) Uncertainty associated with projected ocean warming and acidification threats; (2) regional and local variability in global threats; (3) large distributions and high habitat heterogeneity of the species in this final rule; and (4) limited species-specific information on responses to global threats.

Vulnerability to Extinction

The vulnerability of a species to extinction is a complex function of physiology, life history, morphology, spatial distribution, and interaction with threats (the biological context). The biological context for a species' vulnerability to threats dictates the ecological interactions that ultimately determine how a species responds to threats, such as competition and predation (the ecological context). For example, a species that suffers high mortality from a bleaching event also may be able to recover quickly because its high dispersal and skeletal growth enable efficient recolonization and strong competition. Thus, the initial response to threats does not necessarily mean the species is vulnerable.

Vulnerability of a coral species to extinction also depends on the proportion of colonies that are exposed to threats and their different responses to those threats. In the proposed rule there was little variation between species for exposure to a given threat in the assigned ratings (*e.g.,* exposure to ocean warming was rated the same for all 82 species, which should not automatically be the case because for species that have drastically different distributions and abundances). For this final rule, a coral species' vulnerability to extinction is now evaluated to be holistically influenced by its demographic and spatial characteristics, threat susceptibilities, and current and future environmental conditions. We believe this more complete and integrated treatment of the factors that influence a coral's vulnerability to extinction will lead to a more accurate characterization of whether or not a species currently faces an extinction risk throughout its entire range.

Species Status

After analyzing all of the relevant species-specific demographic and spatial characteristics, threat susceptibilities, and general information on current and future environmental conditions, we relate those characteristics to the particular species' status. This is the key component of the determination that explains how certain species characteristics translate to a particular extinction risk at appropriate spatial and temporal scales. These determinations are heavily influenced by the quantity and quality of species-specific information, especially the species' demographic and distribution characteristics. We received many public comments regarding the lack of quantity and quality of information available for each of the species; those commenters asserted that our species determinations were therefore unfounded. By specifically considering all the currently available species-specific information (both information that we used in the proposed rule and the considerable amount of information that has become available since the proposed rule), we are able to produce more robust evaluations of the information and species determinations. Recognizing the uncertainty and spatial variability of climate change projections and the limited species-specific information on how species in this final rule respond to climate change, we emphasize a species' demographic and spatial characteristics in how its vulnerability to extinction is affected now and through the foreseeable future.

In finalizing a species determination we translate the species' status directly into a listing category using the statutory standards. In the proposed rule, we satisfied this step by using an organizational process called the outcome key, based on ratings in the Determination Tool. The key was intended to identify the general species characteristics and combinations that equate to a particular listing status. However, the outcome key in the proposed rule was too formulaic, and did not explain our comprehensive consideration of the species characteristics that influenced their listing status, and was also based on relative ratings from the Determination Tool. Therefore, the presentation of our final determination framework is more clearly articulated in this final rule by explicitly describing the considerations for each the 65 species in narrative format and how they relate to the statutory standards

In summary, the determination framework used in this final rule is composed of seven elements. The first element is describing the statutory standards. The second, third, fourth, and fifth elements are identifying and analyzing all the appropriate species-specific and general characteristics that influence extinction risk for a coral species. The sixth element is relating a species' characteristics to a particular extinction risk at appropriate spatial and temporal scales. The seventh element is explicitly stating how each species' extinction risk meets the statutory listing definitions as applied to corals, resulting in an ultimate listing status. A final consideration in evaluating listing status is whether current or planned conservation efforts improve the overall status of any of the 65 species such that the additional protections of the ESA are not warranted. We explicitly apply the determination framework to each species in our narrative evaluations. This approach provides consistency across all of the 65 final listing determinations, but also produces individual determinations that are independent of the other 65 coral species.

Conservation Efforts

The effect conservation efforts have on an individual species' listing status is the last consideration in making a final determination. Because many conservation efforts are not species-specific, we provide our analysis of the effectiveness of conservation efforts for corals generally prior to making individual species determinations. Our conclusions regarding conservation efforts in this section apply to all of the proposed species. However, in some cases, we are able to identify species-specific conservation efforts and therefore evaluate them separately in the Species-specific Information and Determinations section.

Section 4(b)(1)(A) of the ESA requires the Secretary, when making a listing determination for a species, to take into account those efforts, if any, being made by any State or foreign nation to protect the species. In evaluating the efficacy of protective efforts, we rely on the Services' joint ''Policy for Evaluation of Conservation Efforts When Making Listing Decisions'' (''PECE;'' 68 FR 15100; March 28, 2003). The PECE requires us to consider whether any conservation efforts recently adopted or implemented, but not yet proven to be successful, will result in improving the species' status to the point at which listing is not warranted, or contribute to a threatened rather than endangered status.

For the proposed rule, we developed a Management Report that identified existing conservation efforts relevant to both global and local threats to corals. A draft of this report was peer reviewed and made available to the public with the SRR in April 2012. At that time, we

requested any new or inadvertently overlooked existing information. The information that we received was incorporated into the Final Management Report (NMFS, 2012b), which formed the basis of our initial PECE evaluation. The information, analysis, and conclusions regarding conservation efforts in the proposed rule and supporting documents apply to this final rule, unless otherwise noted below.

Comments 30–32 focus on our consideration of conservation efforts in the proposed rule. In response to public comments on the proposed rule, we incorporated into our analyses in the final rule relevant information on conservation efforts that are new or that may have been inadvertently omitted or mischaracterized. Thus, this final rule incorporates information we received as a result of the public comment period, identifies existing conservation efforts that are relevant to the threats to the 65 coral species in this final rule, both for global-scale threats to corals linked to GHG emissions and other threats to corals. In particular, we received supplemental information regarding coral reef restoration efforts in Florida and the wider-Caribbean. We also received supplemental information regarding efforts to utilize captive-culture techniques to supplement the coral reef wildlife trade industry and reduce collection pressure on wild coral species. Specifically, we received information regarding Indonesia's mariculture operations as well as efforts in the United States to commercially and recreationally farm corals. This information on coral reef restoration, captive culture efforts for trade purposes, and local conservation efforts as it applies to reef resilience is described further below.

We received some supplemental information regarding the ongoing coral reef restoration efforts being made in South Florida as well as the wider-Caribbean, predominantly for staghorn and elkhorn corals (*Acropora cervicornis* and *A. palmata,* respectively). We briefly mentioned active coral restoration in the proposed rule as an important conservation action for corals, but did not describe these efforts in great detail. Coral reef restoration efforts encompass a variety of activities, and they are increasingly utilized to enhance, restore, and recover coral reef ecosystems and species (Bowden-Kerby *et al.,* 2005; Bruckner and Bruckner, 2001; Lirman *et al.,* 2010b). These activities may include post-ship grounding ''triage'' (*e.g.,* stabilizing substrate and salvaging corals and sponges), active predator and algae removal, larval seeding, and active restoration via coral propagation and outplanting activities. As a result of the 2009 American Recovery and Reinvestment Act, Federal funding through NOAA enabled a network of coral nurseries to expand throughout south Florida and the U.S. Virgin Islands to help recover threatened staghorn and elkhorn corals. These types of in-water coral nurseries have proven successful for propagating corals and serving as genetic repositories to help replenish and restore denuded reefs (Schopmeyer *et al.,* 2012; Young *et al.,* 2012). In 2012 alone, it was estimated these nurseries housed 30,000 corals, with more than 6,000 corals outplanted to surrounding reefs (The Nature Conservancy, 2012). Further, successful spawning of these outplanted corals has been reported on several occasions since the first event occurred in 2009 (Coral Restoration Foundation, 2013). Still, it should be emphasized that coral reef restoration should not be expected to recover entire reef tracts or species; rather, coral reef restoration can serve as a complementary tool to other management strategies such as fisheries management, coastal zone and watershed management, marine protected areas, and others. In a comprehensive review of restoration activities conducted in Florida and the wider-Caribbean, Young *et al.* (2012) found that most practitioners recommended that active restoration activities always be conducted in conjunction with robust local and regional management strategies to minimize the impacts of global and local threats. This is because coral reef restoration efforts can prove futile if the initial elements of degradation have not been mitigated (Jaap, 2000; Precht and Aronson, 2006; Young *et al.,* 2012).

As described above in the Threats Evaluation—Collection and Trade section of this rule, we received a significant amount of information regarding the potential conservation benefits of increasing international and domestic commercial and recreational production of corals via significant advances in captive-culture techniques (*i.e.,* mariculture and aquaculture). Specifically, we received supplemental information regarding the mariculture efforts conducted in Indonesia to reduce the amount of corals collected in the wild, thereby potentially reducing the threat of the marine ornamental trade industry on corals and coral reefs. As the largest exporter of corals in the world, shifting from wild-collected corals to captive cultured corals is an important conservation effort for preserving the integrity of wild reefs and coral species in Indonesia. However, there are still many challenges and obstacles related to captive culture of corals that are detailed in the Threats Evaluation, Trade and Collection section above. Any relevant information regarding this topic has also been incorporated into the analysis of conservation efforts in this final rule.

We received information regarding the role of local management actions and conservation efforts with regard to reef resilience. Conservation projects and programs such as international agreements and memoranda of understanding, coral reef monitoring, voluntary protected areas, restoration activities, and outreach and education initiatives, among others, play an integral role in building and maintaining resilience within coral reef ecosystems as well as raising public awareness. More detailed information regarding local actions as they relate to reef resilience are described above in the Threats Evaluation, Inadequacy of Existing Regulatory Mechanisms section of this final rule.

As described above, we received supplemental information about local conservation efforts since the publication of the proposed rule. However, we did not receive any supplemental information that changes our previous conclusions regarding global conservation efforts to slow climate change-related impacts. After considering this supplemental information in addition to that which was available for the proposed rule, our conclusions regarding conservation efforts remain unchanged. Overall, the numerous coral reef conservation projects are increasing and strengthening resiliency within coral reef ecosystems on a local level, and can provide a protective temporal buffer for corals in the face of climate change related threats. Coral reef restoration activities, particularly of the Caribbean acroporid species, are expected to assist in recovery efforts, but they cannot be considered a panacea. In the absence of effective global efforts to reduce impacts from climate change, there are no conservation efforts currently or planned in the future that are expected to improve the overall status of any of the listed species in this final rule, such that the additional protections provided by the ESA are not warranted.

Species-Specific Information and Determinations

Introduction

This section summarizes the best available information for each of the 65

species of coral considered in this final rule. The best available information is comprised of the proposed rule and its supporting documents, and information that we either gathered ourselves or received as a result of public comments. To distinguish between the information on which the proposed rule was based from new or supplemental information, we will only cite the primary literature for new or supplemental information. For clarity, we will distinguish whether the information was identified via public comment or if we gathered it ourselves.

Spatial, demographic, and other relevant biological information, threat susceptibilities, and information on regulatory mechanisms are all presented for each species. Because species-specific information is limited for many of the proposed species, genus-level information is highly relevant to our determinations. Therefore, we provide relevant information for each genus prior to providing the specific information for species within that genus. Specifically, genus-level information on threat susceptibilities is relevant to species when the available genus-level information can be appropriately applied to the species. Therefore, in each genus description, we provide a section that summarizes genus-level threat susceptibility information that was provided in the SRR and SIR, as well as in the public comments and supplemental information. Threat susceptibility conclusions are then provided considering the applicability of the genus-level information to an unstudied species within that genus. These conclusions will be applied, as appropriate, in the appropriate species descriptions.

Caribbean Species Determinations

Genus Agaricia

Introduction

There are seven species in the genus *Agaricia,* all of which occur in the Caribbean (Veron, 2000). Colonies are composed of plates, which are flat, horizontal, or upright. The latter are usually contorted and fused. Some species such as *A. humilis* and *Agaricia fragilis* tend to be small and somewhat circular in shape while others like *Agaricia lamarcki* and *Agaricia grahamae* can form large, plating colonies.

Spatial Information

The SRR and SIR provided the following genus-level information on *Agaricia*'s distribution, habitat, and depth range: *Agaricia* can be found at depths of 50 to 100 m on mesophotic reefs.

The public comments did not provide any new or supplemental information on *Agaricia's* distribution, habitat, and depth range. Supplemental information we found includes the following. Bongaerts *et al.* (2013) studied the depth distribution and genetic diversity of five agariciid species (*A. humilis, A. agaricites, A. lamarcki, A. grahamae,* and *Helioseris cucullata* [= *Leptoseris cucullata*]) and their symbiotic zooxanthellae in Curaçao. They found a distinct depth distribution among the species. *Agaricia humilis* and *A. agaricites* were more common at shallow depths, and *A. lamarcki, A. grahamae,* and *H. cucullata* were more common at deeper depths. They also found genetic segregation between coral host-symbiont communities at shallow and mesophotic depths.

Demographic Information

The SRR and SIR provided the following genus level information on *Agaricia's* abundance and population trends: Coral specimens collected in 2010 from a mesophotic reef at Pulley Ridge, Florida suggest that corals, such as *Agaricia spp.,* that appear live in video images may actually be covered with algae rather than live coral tissue.

The public comments did not provide any new or supplemental information on *Agaricia's* abundance or population trends. Supplemental information we found on *Agaricia's* population trends includes the following: Stokes *et al.* (2010) reported a decrease in cover of *Agaricia* spp. in the Netherlands Antilles between 1982 and 2008 at all depths surveyed (10 to 30 m). An analysis of Caribbean monitoring data from 1970 to 2012 found that large, plating *Agaricia* spp. were one of the species groups that suffered the greatest proportional losses (Jackson *et al.,* 2014).

Other Biological Information

The SRR and SIR provided the following information on the life history of the genus *Agaricia.* In general, *Agaricia* spp. are gonochoric brooders. Several species such as *Agaricia agaricites, A. tenuifolia,* and *A. humilis* are known to use chemical cues from crustose coralline algae to mediate settlement.

The public comments did not provide new or supplemental information on the life history of the genus *Agaricia.* Supplemental information we found on *Agaricia's* life history includes the following: *Agaricia* spp. can be one of the dominant taxonomic groups found in recruitment studies (Bak and Engel, 1979; Rogers *et al.,* 1984; Shearer and Coffroth, 2006).

Susceptibility to Threats

The SRR and SIR did not provide any genus level information on the susceptibility of *Agaricia* to ocean warming, and the public comments did not provide any new or supplemental information. Supplemental information we found on the susceptibility of the genus *Agaricia* to ocean warming includes the following: *Agaricia* is considered highly susceptible to bleaching. *Agaricia* spp. were the most susceptible to bleaching of the corals monitored during an unanticipated bleaching event at a remote, uninhabited island (Navassa), with higher bleaching prevalence at deeper sites (Miller *et al.,* 2011a). During the 1998 bleaching event in Belize, *A. tenuifolia,* a dominant coral, was nearly eradicated from the Channel Cay reef complex (Aronson *et al.,* 2002). During the 2005 bleaching event, nearly all *Agaricia* spp. were bleached at long-term monitoring sites in Buck Island National Monument, and they remained bleached comparatively longer than other species monitored (Clark *et al.,* 2009). Manzello *et al.* (2007) characterized *Agaricia* as having high susceptibility to bleaching in their study identifying bleaching indices and thresholds in the Florida Reef Tract, the Bahamas, and St. Croix, U.S. Virgin Islands. A long-term study in the Florida Keys found that bleaching prevalence was increased four to seven times by nutrient-enrichment in *Agaricia* spp., the only genus that showed such a response (Vega Thurber *et al.,* 2014). This study indicated that the temperature threshold for bleaching may have been lowered by the nutrient enrichment. Notably, after removal of the nutrient enrichment, bleaching prevalence returned to background levels. Thus, we conclude that, absent species-specific information, species in the genus *Agaricia* should be considered highly susceptible to ocean warming-induced bleaching.

The SRR and SIR did not provide any genus level information on the susceptibility of *Agaricia* to disease, and the public comments did not provide any new or supplemental information. Supplemental information we found on the susceptibility of the genus *Agaricia* to disease includes the following. A study of coral diseases across the wider-Caribbean during the summer and fall of 2005 found the genus *Agaricia,* along with seven other major reef-building genera, to be particularly susceptible to coral diseases including white plague type II, Caribbean ciliate infection, and

to be infected with multiple diseases at the same time (Croquer and Weil, 2009). *Agaricia agaricites* decreased 87 percent in mean cover from the disease outbreak following the 2005 bleaching event in the U.S. Virgin Islands (Miller *et al.,* 2009). Thus, we conclude that, absent species-specific information, species in the genus *Agaricia* should be considered highly susceptible to diseases.

The SRR and SIR provided the following information on the susceptibility of *Agaricia* to acidification. No specific research has addressed the effects of acidification on the genus *Agaricia.* However, most corals studied have shown negative relationships between acidification and growth, and acidification is likely to contribute to reef destruction in the future. While ocean acidification has not been demonstrated to have caused appreciable declines in coral populations so far, it is considered a significant threat to corals by 2100.

The public comments did not provide any new or supplemental information on the susceptibility of *Agaricia* to acidification. Supplemental information we found on the susceptibility of the genus *Agaricia* to acidification includes the following. Crook *et al.* (2012) surveyed coral populations near submarine springs close to the Mesoamerican Reef in Mexico where water aragonite saturation state was naturally low due to groundwater seepage. *Agaricia* spp. were found near the springs, but only in waters with an aragonite saturation state greater than 2.5, indicating these species may be less tolerant than other coral species that were able to grow in under-saturated waters. Thus, we conclude that, absent species-specific information, species in the genus *Agaricia* should be considered to have some susceptibility to acidification.

The SRR and SIR provided genus level information on the susceptibility of *Agaricia* to sedimentation. The typically small calices of *Agaricia* spp. are not efficient at rejecting sediment, and species with horizontally-oriented plates or encrusting morphologies could be more sediment-susceptible than species with vertically-oriented plates as evidenced by fine sediment suspended in hurricanes that caused higher mortality in platy corals than hemispherical or non-flat ones. The public comments did not provide any new or supplemental information on the susceptibility of the genus *Agaricia* to sedimentation, and we did not find any new or supplemental information. Thus, we conclude that, absent species-specific information, species in the genus *Agaricia* should be considered to have some susceptibility to sedimentation.

The SRR and SIR did not provide any genus level information on the susceptibility of *Agaricia* to nutrients, and the public comments did not provide any new or supplemental information. Supplemental information we found on the susceptibility of *Agaricia* spp. to nutrients includes the following. Treatment of *A. tenuifolia* with low (5 mg per l) and high (25 mg per l) doses of organic carbon resulted in 73 to 77 percent mortality, respectively, compared to 10 percent mortality of controls (Kuntz *et al.* 2005). Treatment of *A. tenuifolia* with nitrate (7.5 μM), ammonium (25 μM), and phosphate (2.5 μM) caused about 50 percent mortality compared to 10 percent in controls (Kuntz *et al.* 2005). Thus, we conclude that, absent species-specific information, species in the genus *Agaricia* should be considered to have high susceptibility to nutrient enrichment based on this study in combination with the Vega Thurber *et al.* (2014) study that found increased bleaching in the presence of chronic nutrient enrichment.

The SRR and SIR did not provide any information on the susceptibility of *Agaricia* spp. to any other threats. The public comments did not provide any new or supplemental information, and we did not find any new or supplemental information on the susceptibility of *Agaricia* to any other threats.

Genus Conclusion

The studies cited above indicate that *Agaricia* spp. are highly susceptible to warming. In at least one location, a bleaching event resulted in 100 percent mortality of one *Agaricia* species. The genus also appears to be highly susceptible to diseases that can result in high rates of mortality and to be highly susceptible to impacts of nutrients. However, as described below, there is a fair amount of species-specific information for individual *Agaricia* species; therefore, we generally do not rely on the genus-level information to inform species level determinations. When necessary the appropriate inference is described in the species-specific information.

Agaricia lamarcki

Introduction

The SRR and SIR provided the following information on *A. lamarcki*'s morphology and taxonomy. *Agaricia lamarcki* has flat, unifacial, or encrusting plates that are commonly arranged in whorls. It is identifiable by its morphology and the presence of white stars at the mouths. *Agaricia lamarcki* does not appear to have taxonomic problems.

The public comments did not provide new or supplemental information, and we did not find any new or supplemental information on *A. lamarcki'*s morphology or taxonomy.

Spatial Information

The SRR and SIR provided the following information on *A. lamarcki'*s distribution, habitat, and depth range. *Agaricia lamarcki* can be found in the western Atlantic off south Florida as far north as Palm Beach County, in the Gulf of Mexico including the Flower Garden Banks, and throughout the Caribbean including the Bahamas. *Agaricia lamarcki* is rare in shallow reef environments of 3 to 15 m, but is common at deeper depths of 20 to 100 m where it can be one of the dominant coral species. It is found in shaded or reduced light environments, on slopes and walls, and on mesophotic reefs in Curaçao, Florida, Jamaica, Puerto Rico, and the U.S. Virgin Islands.

The public comments did not provide new or supplemental information on *A. lamarcki*'s distribution, habitat, or depth range. Supplemental information we found on *A. lamarcki*'s distribution includes the following. Veron (2014) confirms the presence of *A. lamarcki* in seven out of 11 possible ecoregions in the western Atlantic and greater Caribbean that contain corals, and he strongly predicts the presence of *A. lamarcki* in the ecoregion surrounding the Flower Garden Banks based on published record or confirmed occurrence in surrounding ecoregions. The three ecoregions in which it is not reported are off the coasts of Bermuda, Brazil, and the southeast U.S. north of south Florida. We did not find any new or supplemental information on *A. lamarcki*'s habitat or depth range.

Demographic Information

The SRR and SIR provided the following information on *A. lamarcki*'s abundance and population trends. *Agaricia lamarcki* is reported as common. In the Netherlands Antilles, *A. lamarcki* increased in abundance or remained stable on reefs 30 to 40 m in depth from 1973 to 1992.

The public comments provided supplemental information on *A. lamarcki*'s abundance. Population estimates of *A. lamarcki* in the Florida Keys extrapolated from stratified random samples were 3.1 ± 1.3 million (standard error (SE)) colonies in 2005 and 0.2 ± 0.2 million colonies in 2012. No colonies were observed in 2009, but

fewer deep sites (>20 m) were surveyed in 2009 and 2012 compared to 2005. Most colonies observed were 20 to 30 cm in diameter, and partial mortality was highest (50 percent) in the largest size class (30 to 40 cm). *Agaricia lamarcki* ranked 35th in abundance out of 47 species in 2005 and 37th out of 40 species in 2012. In the Dry Tortugas, Florida, where more deep sites were surveyed, *A. lamarcki* ranked 12th out of 43 species in 2006, with population estimates extrapolated to 14.3 ± 2.6 million colonies. It ranked 22nd out of 40 species in 2008 with populations estimates extrapolated to 2.1 ± 0.5 million colonies. Most of the colonies in 2006 were 10 to 30 cm in diameter, but colonies greater than 90 cm were observed. Partial mortality was highest in the 30 to 40 cm size class (approximately 35 percent) in 2006 and highest in the 20 to 30 cm size class (approximately 20 percent) in 2008. In 2008, most of the colonies were 0 to 10 cm in size, and the largest colonies observed were in the 50 to 60 cm size class (Miller *et al.,* 2013). Because population estimates were extrapolated from random samples, differences in population numbers between years are more likely a function of sampling effort rather than population trends over time. The public comments did not provide new or supplemental information on *A. lamarcki*'s population trends.

Supplemental information we found on *A. lamarcki*'s abundance and population trends includes the following. Between 1977 and 1987, colonies of *A. lamarcki* in monitored plots in Jamaica decreased from 34 to 31 colonies, indicating the net production by sexual and asexual means was not enough to compensate for mortality of the originally present colonies (Hughes, 1988). More than 40 percent of the colonies present in 1987 were derived from asexual fission of the original colonies present in 1977, and none of the six sexual recruits survived until the end of the study period (Hughes, 1988). In the U.S. Virgin Islands, *A. lamarcki* was the eleventh most common coral in terms of cover out of 55 species, and average cover across 18 monitoring sites was 1.2 ± 0.3 (SE) percent in 2012 (Smith, 2013).

All information on *A. lamarcki*'s abundance and population trends can be summarized as follows. Based on population estimates, there are at least tens of millions of *A. lamarcki* colonies present in the Florida Keys and Dry Tortugas combined. Absolute abundance is higher than the estimate from these two locations given the presence of this species in many other locations throughout its range. Population trends indicate this species may be declining in some areas, but because some of the trend data is lumped by genus or genus plus morphology, there is uncertainty that the trends represent *A. lamarcki* specifically. Thus, we conclude that *A. lamarcki* has likely declined in some areas and the population numbers at least in the tens of millions of colonies.

Other Biological Information

The SRR and SIR provided the following information on *A. lamarcki*'s life history. No information on the reproductive strategy of *A. lamarcki* is available, but congeners are gonochoric brooders. Larval settlement occurs primarily at deeper depths (26 to 37 m), but the species has also been found at shallower depths. Recruitment rates of *A. lamarcki* are low (*e.g.,* only one of 1,074 *Agaricia* recruits at the Flower Garden Banks may have been *A. lamarcki*), and net gains from sexual recruitment may be negligible at a decadal time scale. Population numbers may be maintained through asexual fission of larger colonies into smaller daughter colonies. Growth rates are slow; radial growth measurements from Jamaica ranged from zero to 1.4 cm per year and averaged approximately 0.5 cm per year. Growth rates are a bit slower, ranging from zero to 1.0 cm per year, at depths greater than 20 m. Maximum colony size is approximately two meters. *Agaricia lamarcki* is a relatively long-lived species, and individual colonies may persist for greater than a century. Based on monitoring in Jamaica, the half-life (mortality of half of monitored colonies) of *A. lamarcki* is 17 years. Mortality rates are size-specific (ranging from 10 to 25 percent), and partial mortality rates are high (ranging from 22 to 90 percent). Overall, demographic characteristics are low recruitment, high colony survival, and high partial mortality.

The public comments did not provide new or supplemental information on *A. lamarcki* life history. Supplemental information we found on *A. lamarcki* life history includes the following. Darling *et al.* (2012) performed a trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Agaricia lamarcki* was classified as a ''weedy'' species, thus likely more tolerant of environmental stress.

The SRR, SIR, and the public comments did not provide new or supplemental biological information for *A. lamarcki.* Supplemental biological information we found about *A. lamarcki* includes the following. Out of five agariciid species sampled at a single reef in Curaçao, *A. lamarcki* was the only species that harbored multiple symbiont profiles across depth distribution; the other four species had only a single symbiont profile across depth. The symbiont community associated with *A. lamarcki* at 40 m depth was significantly different from those at both 10 m and 25 m (Bongaerts *et al.,* 2013).

Susceptibility to Threats

The threat susceptibility information from the SRR and SIR was interpreted in the proposed rule for *A. lamarcki*'s vulnerabilities to threats as follows: Moderate vulnerability to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, and nutrients; and low vulnerability to sea level rise and collection and trade. No conclusions on *A. lamarcki*'s vulnerability to predation were made due to lack of available information on its susceptibility to this threat.

The SRR and SIR provided the following information on the susceptibility of *A. lamarcki* to ocean warming. *Agaricia lamarcki* is susceptible to bleaching from both high and low temperature anomalies. In laboratory studies, *A. lamarcki* had almost complete disruption of photosynthesis at 32 °C to 34 °C. Bleaching can be extensive; however, it may not result in mortality in *A. lamarcki.*

Van Woesik *et al.* (2012) developed a coral resiliency index to evaluate extinction risk due to bleaching, based on biological traits and processes. Evaluations were performed at the genus level. They rated the resiliency of *Agaricia* as −2 out of a range of −6 to 7 observed in other coral genera. Less than or equal to −3 was considered highly vulnerable to extinction, and greater than or equal to 4 was considered highly tolerant. Thus, *Agaricia* was rated closer to the vulnerable end of the spectrum, though not highly vulnerable. This study was in the SIR, but the findings specific to *Agaricia* were not included. The public comments (comment 47) indicated the results of this study should be considered in the listing status of *A. lamarcki.*

The public comments did not provide any new or supplemental information on the susceptibility of *A. lamarcki* to ocean warming. Supplemental information we found on the susceptibility of *A. lamarcki* to ocean warming includes the following. During the 2005 bleaching event, greater than

80 percent of *A. lamarcki* colonies bleached at 12 sites in Puerto Rico (Waddell and Clarke, 2008). In the U.S. Virgin Islands, an average of 59 percent of *A. lamarcki* colonies (n = 11) bleached, and nine percent paled during the 2010 bleaching event (Smith *et al.,* 2013b). *Agaricia lamarcki* had high resistance to both hot and cold water anomalies that impacted the Florida Keys in 2005 and 2010, respectively, as indicated by their low tissue mortality compared to other coral species monitored (Lirman *et al.,* 2011).

All sources of information are used to describe *A. lamarcki*'s susceptibility to ocean warming as follows. *Agaricia lamarcki* has some susceptibility to ocean warming as evidenced by extensive bleaching during warm water temperature anomalies but observed low bleaching-related mortality. The available information does not support a more precise description of susceptibility.

The SRR and SIR did not provide any species-specific information on susceptibility of *A. lamarcki* to ocean acidification. The public comments did not provide new or supplemental information on the susceptibility of *A. lamarcki* to acidification, and we did not find any new or supplemental information.

All sources of information are used to describe *A. lamarcki'*s susceptibility to acidification as follows. There is uncertainty about how *A. lamarcki* will respond to ocean acidification, but there is genus-level evidence that *Agaricia* are not among the more tolerant species from areas of water with naturally lower aragonite saturation state. Thus, *A. lamarcki* likely has some susceptibility to ocean acidification, but the available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on *A. lamarcki*'s susceptibility to disease. White plague infections in *A. lamarcki* have been observed in Florida, Colombia, and St. Lucia, though no incidence of disease was observed in the Florida Keys in 1996 to 1998. Ciliate infections have been documented in *A. lamarcki,* and tumors may affect this species. The ecological and population impacts of disease have not been established for *A. lamarcki.*

The public comments did not provide any new or supplemental information on the susceptibility of *A. lamarcki* to disease, and we did not find any new or supplemental information on *A. lamarcki'*s susceptibility to disease.

All source of information are used to describe *A. lamarcki*'s susceptibility to disease as follows. *Agaricia lamarcki* is susceptible to several diseases, including white plague, which has one of the fastest progression rates recorded in the Caribbean. However, there is no information on the population level effects of disease on *A. lamarcki* (*e.g.,* rates of infection, percentage of population affected, and amounts of tissue loss). Genus-level information indicates high susceptibility to a disease outbreak following a bleaching event, indicating A. *lamarcki* is likely highly susceptible to disease.

The SIR and SRR did not provide any species-specific information on the trophic effects of fishing on *A. lamarcki.* The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the trophic effects of fishing on *A. lamarcki.* However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. Thus, *A. lamarcki* likely has some susceptibility to the trophic effects of fishing because of low recruitment rates, though the available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on susceptibility of *A. lamarcki* to sedimentation. *Agaricia lamarcki* could be susceptible to sedimentation based on calix and colony morphology. This conclusion was based on genus-level information on susceptibility to sedimentation. The public comments did not provide new or supplemental information on the susceptibility of *A. lamarcki* to sedimentation, and we did not find new or supplemental information.

All sources of information are used to describe *A. lamarcki*'s susceptibility to sedimentation as follows. There is no species-specific information on the susceptibility of *A. lamarcki* to sedimentation. However, based on genus-level information, colony morphology and skeletal structure of *A. lamarcki* indicate it is likely poor at removing sediment. Thus, *A. lamarcki* likely has some susceptibility to sedimentation, but the available information does not support a more precise description of susceptibility.

The SRR and SIR did not provide any information on the susceptibility of *A. lamarcki* to nutrients, and the public comments did not provide any new or supplemental information. Supplemental information we gathered at the genus-level indicates that *A. lamarcki* is likely highly susceptible to nutrient enrichment.

The SRR and SIR did not provide species-specific information on the effects of sea level rise on *A. lamarcki.* The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *A. lamarcki*'s susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *A. lamarcki* has some susceptibility to sea level rise, but the available information does not provide a more precise description of susceptibility.

The SRR and SIR provided the following information on the susceptibility of *A. lamarcki* to collection and trade. Only light trade has been recorded with gross exports averaging fewer than 10 pieces of coral annually between 2000 and 2005. The public comments did not provide new or supplemental information on the susceptibility of *A. lamarcki* to collection and trade. Supplemental information we found confirms that collection and trade of *A. lamarcki* remained low between 2000 and 2012 with gross exports averaging fewer than 10 pieces of coral annually (data available at *http://trade.cites.org/*). Thus, we conclude that *A. lamarcki* has low susceptibility to collection and trade.

The SRR and SIR provided the following information on the susceptibility of *A. larmarcki* to predation. Predation effects on *A. lamarcki* are unknown. The public comments did not provide any new or supplemental information, and we did not find any new or supplemental information on the susceptibility of *A. lamarcki* to predation. We conclude that while *A. lamarcki* likely has some susceptibility to predation, available information is lacking, and we cannot say whether it is a threat.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. lamarcki.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *Agaricia lamarcki* occurs in eight Atlantic ecoregions that encompass 26 kingdom's and countries' EEZs. The 26 kingdoms and countries are Antigua &

Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Overseas Territories), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *A. lamarcki,* described first as a percentage of the above kingdoms and countries that utilize them to any degree, and second as a percentage of those countries and kingdoms whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *A. lamarcki* are reef fishing regulations and area management for protection and conservation. However, half of the reef fishing regulations are limited in scope and may not provide substantial protection for the species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *A. lamarcki.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the extinction risk for *A. lamarcki* include the widespread decline in environmental conditions in the Caribbean, potential losses to disease, severe effects of bleaching, and limited sediment tolerance. Factors that reduce extinction risk include occurrence primarily at great depth, where disturbance events are less frequent, and life history characteristics that have allowed the species to remain relatively persistent compared to other deep corals despite low rates of sexual recruitment.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. lamarcki,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Although it is geographically located in the heavily disturbed Caribbean, *A. lamarcki's* predominant occurrence at depths of 20 to 100 m reduces its exposure to disturbance events that have resulted in the decreased resilience of reefs in the Caribbean and moderates vulnerability to extinction over the foreseeable future. *Agaricia lamarcki's* life history characteristics of large colony size and long life span have enabled it to remain relatively persistent despite slow growth and low recruitment rates, thus moderating vulnerability to extinction. Although we concluded that *A. lamarcki* is likely highly susceptible to disease, population level effects of disease have not been documented in *A. lamarcki* thus far, indicating the currently low vulnerability to extinction from this threat. Additionally, although *A. lamarcki* has been observed to have high levels of warming-induced bleaching, bleaching-related mortality appears to be low, indicating that vulnerability to extinction from ocean warming is currently low. Deeper areas of *A. lamarcki's* range will usually have lower temperatures than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. *Agaricia lamarcki's* habitat includes shaded or reduced light environments, slopes, walls, and mesophotic reefs. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. *Agaricia lamarcki's* absolute abundance has been estimated as at least tens of millions of colonies in the Florida Keys and Dry Tortugas combined and is higher than the estimate from these two locations due to the occurrence of the species in many other areas throughout its range. Its abundance, life history characteristics, and depth distribution, combined with spatial variability in ocean warming and acidification across the species' range, moderate vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. lamarcki* was proposed for listing as threatened because of: Moderate vulnerability to ocean warming (E), disease (C), and acidification (E); low relative recruitment rate (E); moderate overall distribution (based on narrow geographic distribution and wide depth distribution (E); restriction to the Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. lamarcki* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. lamarcki'* spatial structure, demography, threat susceptibilities, and management none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time because:

(1) *Agaricia lamarcki's* predominant occurrence at depths of 20 to 100 m in heterogeneous habitats, including shaded or reduced light environments, on slopes and walls, and on mesophotic reefs, throughout the Caribbean basin reduces exposure to any given threat event or adverse condition that does not occur uniformly throughout the species' range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Agaricia lamarcki's* absolute abundance is at least tens of millions of colonies based on estimates from two locations. Absolute abundance is higher than estimates from these locations since *it* occurs in many other locations throughout its range. This provides buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity, and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, *A. lamarcki* is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. lamarcki* is not warranted for listing at this time under any of the listing factors, and we withdraw our proposal to list the species as threatened.

Genus Mycetophyllia

There are five species in the genus *Mycetophyllia* that all occur in the western Atlantic and Caribbean (Veron, 2000). Most species of *Mycetophyllia* can be difficult to distinguish in the field, and many studies report data to the genus level rather than species. Therefore, all information reported for the genus appears in this section, and information reported specifically for *M. ferox* is presented in the species section.

Demographic Information

The SRR, SIR, and the public comments did not provide information on *Mycetophyllia* abundance or population trends. Supplemental information we found on *Mycetophyllia's* abundance and population trends includes the following. Percent cover of *Mycetophyllia* spp. between 2001 and 2006 was less than approximately 0.02 percent on St. John (233 sites surveyed) and St. Croix (768 sites surveyed), U.S. Virgin Islands and La Parguera, Puerto Rico (Waddell and Clarke, 2008). Similarly, cover of *Mycetophyllia* spp. on the mesophotic Hind Bank in the U.S. Virgin Islands was 0.02 ± 0.01 percent in 2007 (Smith *et al.,* 2010). Cover of *Mycetophyllia* spp. was 0.1 percent between 2002 and 2004 on four islands in the Bahamas Archipelago (Roff *et al.,* 2011). Between 2005 and 2007, *Mycetophyllia* spp. comprised 0.1 percent or less of the coral cover and occurred in densities of 1.0 colony per 10 m^2 in parts of southeast Florida and the Florida Keys (Wagner *et al.,* 2010). In Roatan, Honduras, *Mycetophyllia* sp. cover in permanent photo-stations increased between 1996 and 1998 from 0.57 percent to 0.77 percent but subsequently decreased to 0.26 percent in 2003 and 0.15 percent in 2005 (Riegl *et al.,* 2009).

Susceptibility to Threats

The SRR, SIR, and public comments did not provide information on *Mycetophyllia's* susceptibility to threats. Supplemental information we found on *Mycetophyllia's* susceptibility to ocean warming includes the following. During the 1995 bleaching event in Belize, 24 percent of 21 colonies monitored *Mycetophyllia* bleached (McField, 1999). In Roatan, Honduras, 11 percent [*sic*]of 10 monitored *Mycetophyllia* sp. colonies bleached and 11 percent [*sic*] partially bleached during the 1998 bleaching event; mortality of *Mycetophyllia* colonies was 11 percent (Riegl *et al.,* 2009).

Bleaching of *Mycetophyllia* was 62 percent across all 28 locations surveyed in Puerto Rico during the 2005 temperature anomaly (Waddell and Clarke, 2008). Additionally, a post-bleaching outbreak of white plague resulted in a massive collapse of *Mycetophyllia* colonies at most reefs on the east, south, and west coasts of Puerto Rico and reproductive failure during the 2006 mass spawning (Waddell and Clarke, 2008). Off Mona and Desecheo Islands, Puerto Rico in 2005, paling occurred in 65 percent of *Mycetophyllia* colonies, and bleaching occurred in 10 percent (Bruckner and Hill, 2009).

In surveys conducted between August and October 2005 to 2009 from the lower Florida Keys to Martin County, average mortality of *Mycetophyllia* spp. was 0.6 ± 6.4 percent, which was the eighth highest out of 25 of the most abundant species (Lirman *et al.,* 2011). During the 2010 cold-water event, average mortality of *Mycetophyllia* spp. across 76 sites from the lower Florida Keys to Martin County was 15.0 ± 28.3 percent, which was the eleventh highest of the 25 most abundant species (Lirman *et al.,* 2011).

During the 2005 bleaching event, *Mycetophyllia* spp. were among the most severely affected of 22 coral species reported to have bleached across 91 of 94 sites in northeast St. Croix, U.S. Virgin Islands (Wilkinson and Souter, 2008). In the U.S. Virgin Islands, the one colony of *Mycetophyllia* sp. observed at 18 sites, bleached during 2005. Six colonies were subsequently monitored after the 2010 mild bleaching event with average of eight percent bleaching (Smith *et al.,* 2013b).

Supplemental information we found on the susceptibility of *Mycetophyllia* to disease includes the following. White plague (Nugues, 2002) and red band disease (Waddell, 2005) have been reported to infect *Mycetophyllia* species. In 2004, prevalence of disease in *Mycetophyllia* was approximately two to three percent in Mexico (Harvell *et al.,* 2007).

Mycetophyllia ferox

Introduction

The SRR and SIR provided the following information on *M. ferox's* morphology and taxonomy. *Mycetophyllia ferox* forms a thin, encrusting plate that is weakly attached. *Mycetophyllia ferox* is taxonomically distinct. Maximum colony size is 50 cm.

Public comments did not provide new or supplemental information on *M. ferox's* taxonomy or morphology. Supplemental information we found on *M. ferox's* taxonomy and morphology includes the following. Zlatarski and Estalella (1982) reported 14 out of 25 *Mycetophyllia* colonies collected from Cuba were intermediate between *M. ferox,* and *M. lamarkiana,* and parts of two colonies were comparable to *M. ferox* or *M. lamarkiana,* illustrating potential morphological plasticity between species.

Spatial Information

The SRR and SIR provided the following information on *M. ferox's* distribution, habitat, and depth range. *Mycetophyllia ferox* occurs in the western Atlantic and throughout the wider Caribbean. It has not been reported in the Flower Garden Banks (Gulf of Mexico) or in Bermuda. It has been reported in reef environments in

water depths of 5 to 90 m, including shallow and mesophotic habitats.

The public comments did not provide new or supplemental information on *M. ferox's* distribution, habitat, or depth range. Supplemental information we found on *M. ferox's* distribution includes the following. Veron (2014) confirms the occurrence of *M. ferox* in seven out of a possible 11 ecoregions in the Caribbean and western Atlantic that contain corals. The four ecoregions where it is not reported are the Flower Garden Banks, off the coasts of Bermuda, Brazil, and the southeast U.S. north of south Florida. We did not find any supplemental information on *M. ferox's* habitat or depth range.

Demographic Information

The SRR and SIR provided the following information on *M. ferox's* abundance and population trends. *Mycetophyllia ferox* is usually uncommon or rare, constituting less than 0.1 percent of all coral species at generally less than one percent of the benthic cover. Density of *M. ferox* in southeast Florida and the Florida Keys was approximately 0.8 colonies per 10 m^2 between 2005 and 2007. There is indication that the species was much more abundant in the upper Florida Keys in the 1970s. In a survey of 97 stations in the Florida Keys, *M. ferox* declined in occurrence from 20 stations in 1996 to four stations in 2009. At 21 stations in the Dry Tortugas, *M. ferox* declined in occurrence from eight stations in 2004 to three stations in 2009.

The public comments provided the following supplemental information on *M. ferox's* abundance. In stratified random surveys in the Florida Keys, *M. ferox* ranked 39th most abundant out of 47 in 2005, 43rd out of 43 in 2009, and 40th out of 40 in 2012. Extrapolated population estimates were 1.0 ± 0.7 (SE) million in 2005, 9,500 ± 9,500 (SE) colonies in 2009, and 7,000 ± 7,000 (SE) in 2012 . These abundance estimates are based on random surveys, and differences between years are more likely a result of sampling effort rather than population trends. The most abundant size class was 10 to 20 cm diameter that equaled the combined abundance of the other size classes. The largest size class was 30 to 40 cm. Average partial mortality per size class ranged from nearly 0 to 50 percent and was greatest in the 20 to 30 cm size class (Miller *et al.,* 2013).

In the Dry Tortugas, Florida, *M. ferox* ranked 35th most abundant out of 43 species in 2006 and 30th out of 40 in 2008. Population estimates were 0.5 ± 0.4 (SE) million in 2006 and 0.5 ± 0.2 million (SE) in 2008. The number of colonies in 2006 was similar between the 0 to 10 cm and 10 to 20 cm size classes, and the largest colonies were in the 20 to 30 cm size class. Greatest partial mortality was around 10 percent. Two years later, in 2008, the highest proportion of colonies was in the 20 to 30 cm size class, and the largest colonies were in the 40 to 50 cm size class. The greatest partial mortality was about 60 percent in the 30 to 40 cm size class, however the number of colonies at that size were few (Miller *et al.,* 2013).

Supplemental information we found on *M. ferox's* abundance and population trends confirms *M. ferox's* low percent cover, encounter rate, and density. In a survey of Utila, Honduras between 1999 and 2000, *M. ferox* was observed at eight percent of 784 surveyed sites and was the 36th most commonly observed out of 46 coral species; other *Mycetophyllia* species were seen more commonly (Afzal *et al.,* 2001). In surveys of remote southwest reefs of Cuba, *M. ferox* was observed at one of 38 reef-front sites, with average abundance was 0.004 ± 0.027 (standard deviation (SD)) colonies per 10 m transect; this was comparatively lower than the other three *Mycetophyllia* species observed (Alcolado *et al.,* 2010). Between 1998 and 2004, cover of *M. ferox* ranged between 0.3 and 0.4 percent in three of six sites monitored in Colombia (Rodriguez-Ramirez *et al.,* 2010). In Barbados, *M. ferox* was observed on one of seven reefs surveyed, and the average cover was 0.04 percent (Tomascik and Sander, 1987).

Benthic cover of *M. ferox* in the Red Hind Marine Conservation District off St. Thomas, U.S. Virgin Islands, which includes mesophotic coral reefs, was 0.003 ± 0.004 percent in 2007, accounting for 0.02 percent of coral cover, and ranking 20th highest in cover out of 21 coral species (Nemeth *et al.,* 2008; Smith *et al.,* 2010). In the U.S. Virgin Islands between 2001 and 2012, cover of *M. ferox* appeared in 12 of 33 survey sites and accounted for 0.01 percent of the benthos, and 0.07 percent of the coral cover, ranking as 13th most common (Smith, 2013).

In 1981, *M. ferox* was observed on one of four reefs surveyed in the upper Florida Keys at 0.1 percent cover (Burns, 1985). In surveys of the Florida Keys between 1996 and 2003, cover of *M. ferox* was 0.022, 0.005, and less than 0.001 percent on patch reefs, deep offshore reefs, and shallow offshore reefs, respectively (Somerfield *et al.,* 2008). At permanent monitoring stations in the Florida Keys, the number of stations where *M. ferox* was present declined between 1996 and 2003 (Waddell, 2005). Between 2005 and 2010, *M. ferox* was one of 42 species surveyed and was found the least abundant being observed at densities of 0.02 and 0.01 colonies per 10 m^2 on mid-channel reefs and fore-reefs, respectively, on the Florida reef tract (Burman *et al.,* 2012).

All information on *M. ferox's* abundance and population trends can be summarized as follows. *Mycetophyllia ferox* has been reported to occur on 3 to 50 percent of reefs surveyed and is one of the least common coral species observed. On reefs where *M. ferox* is found, it generally occurs at abundances of less than one colony per 10 m^2 and percent cover of less than 0.1 percent. Based on population estimates, there are at least hundreds of thousands of *M. ferox* colonies present in the Florida Keys and Dry Tortugas combined. Absolute abundance is higher than the estimate from these two locations given the presence of this species in many other locations throughout its range. Low encounter rate and percent cover coupled with the tendency to include *Mycetophyllia* spp. at the genus level make it difficult to discern population trends of *M. ferox* from monitoring data. However, reported losses of *M. ferox* from monitoring stations in the Florida Keys and Dry Tortugas (63 to 80 percent loss) indicate population decline in these locations. Based on declines in Florida, we conclude *M. ferox* has likely declined throughout its range.

Other Biological Information

The SRR and SIR provided the following information on *M. ferox's* life history. *Mycetophyllia ferox* is a hermaphroditic brooding species. Colony size at first reproduction is greater than 100 cm^2. Recruitment of *M. ferox* appears to be very low, even in studies from the 1970s.

The public comments did not provide new or supplemental information on *M. ferox's* life history. Supplemental information we found on *M. ferox's* life history includes the following. *Mycetophyllia ferox* has a lower fecundity compared to *M. aliciae, M. lamarckiana* and *M. danaana* (Morales Tirado, 2006). Over a 10 year period, no colonies of *M. ferox* were observed to recruit to an anchor-damaged site in the U.S. Virgin Islands although adults were observed on the adjacent reef (Rogers and Garrison, 2001). Darling *et al.* (2012) performed a biological trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. *Mycetophyllia ferox* was classified as a

''weedy'' species, thus likely more tolerant of environmental stress.

Susceptibility to Threats

The threat susceptibility information from the SRR and SIR was interpreted in the proposed rule for *M. ferox's* vulnerabilities to threats as follows: High vulnerability to disease and nutrient enrichment; moderate vulnerability to ocean warming, acidification, trophic effects of fishing, and sedimentation; and low vulnerability to sea level rise, predation, and collection and trade.

The SRR and SIR provided the following information on *M. ferox's* susceptibility to ocean warming. No bleached *M. ferox* colonies were observed in Florida or Barbados in a wide-scale survey during the 2005 mass-bleaching event, although the number of colonies was small.

The public comments did not provide new or supplemental information on the susceptibility of *M. ferox* to ocean warming. Supplemental information we found on the susceptibility of *M. ferox* to ocean warming includes the following. In surveys of the lower Florida Keys and Dry Tortugas during the 1998 bleaching event, approximately 20 percent of *M. ferox* colonies bleached; out of the 14 species reported to have experienced bleaching of at least 50 percent of the colony, *M. ferox* was one of the least affected (Waddell, 2005). Approximately 50 percent of *M. ferox* colonies bleached at 12 locations in Puerto Rico during the 2005 bleaching event (Waddell and Clarke, 2008). During the 2005 Caribbean bleaching event, neither of the two colonies of *M. ferox* monitored at six sites in Barbados bleached; an average of 71 percent of all coral colonies bleached at those six sites during the event (Oxenford *et al.,* 2008).

All sources of information are used to describe *M. ferox's* susceptibility to ocean warming as follows. The bleaching reports available specifically for *M. ferox* and at the genus level indicate similar trends of relatively low bleaching observed in 1995, 1998, and 2010 (less than 25 percent) and higher levels (50 to 65) or no bleaching in the more severe 2005 bleaching event. Reproductive failure and a disease outbreak were reported for the genus after the 2005 bleaching event. Although bleaching of most coral species is spatially and temporally variable, understanding the susceptibility of *M. ferox* is somewhat confounded by the species' low sample size in any given survey due to its low encounter rate. We conclude that *M. ferox* has some susceptibility to ocean warming. However, the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR provided the following information on the susceptibility of *M. ferox* to acidification. No specific research has addressed the effects of acidification on the genus *Mycetophyllia.* However, most corals studied have shown negative relationships between acidification and growth, and acidification is likely to contribute to reef destruction in the future. While ocean acidification has not been demonstrated to have caused appreciable declines in coral populations to date, it is considered to become a significant threat to corals by 2100.

The public comments did not provide new or supplemental information on the susceptibility of *M. ferox* to acidification, and we did not find any new or supplemental information.

All sources of information are used to describe *M. ferox's* susceptibility to acidification as follows. There is uncertainty about how *M. ferox* will respond to ocean acidification. Based on the negative effects of acidification on growth of most corals, *M. ferox* likely has some susceptibility to acidification. The available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on *M. ferox's* susceptibility to disease. *Mycetophyllia ferox* is susceptible to white plague. Diseased *M. ferox* colonies were reported in the upper Florida Keys in the mid-1970s; between 24 and 73 percent of *M. ferox* colonies were infected per site. At one reef site, 20 to 30 percent of the *M. ferox* colonies died from disease during a one-year period.

The public comments did not provide new or supplemental information on the susceptibility of *M. ferox* to disease. Supplemental information we found on the susceptibility of *M. ferox* to disease includes the following. Porter *et al.* (2001) report the loss of *M. ferox* from many of the permanent monitoring stations (160 stations at 40 sites) in the Florida Keys between 1996 and 1998 due to coral disease.

All sources of information are used to describe *M. ferox's* susceptibility to disease as follows. From reports in the Florida Keys, *M. ferox* appears to be highly susceptible to disease, specifically white plague, and reports of high losses and correlation with higher temperatures date back to the mid-1970s (Dustan, 1977). Although heavy impacts of disease on *M. ferox* have not been reported in other locations, an outbreak of white plague was credited with causing heavy mortality at the genus level in Puerto Rico after the 2005 bleaching event. We conclude that the susceptibility of *M. ferox* to disease is high.

The SIR and SRR did not provide any species-specific information on the trophic effects of fishing on *M. ferox.* The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the trophic effects of fishing on *M. ferox.* However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. Thus, *M. ferox* likely has some susceptibility to the trophic effects of fishing given its low recruitment rates. The available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on the susceptibility of *M. ferox* to nutrient enrichment. *Mycetophyllia ferox* appeared to be absent at fringing reef sites in Barbados impacted by sewage pollution.

The public comments did not provide any new or supplemental information on the susceptibility of *M. ferox* to nutrient enrichment, and we did not find any new or supplemental information.

All sources of information are used to describe *M. ferox's* susceptibility to nutrient enrichment as follows. *Mycetophyllia ferox* may be susceptible to nutrient enrichment as evidenced by its absence from eutrophic sites in one location. However, there is uncertainty about whether the absence is a result of eutrophic conditions or a result of uncommon or rare occurrence. Therefore, we conclude that *M. ferox* likely has some susceptibility to nutrient enrichment. However, the available information does not support a more precise description of susceptibility.

The SRR and SIR did not provide any species or genus information on the susceptibility of *M. ferox* to sedimentation but provided the following. Land-based sources of pollution (including sediment) often act in concert rather than individually and are influenced by other biological (*e.g.,* herbivory) and hydrological factors. Collectively, land-based sources of pollution are unlikely to produce extinction at a global scale; however, they may pose significant threats at local scales and reduce the resilience of corals to bleaching.

The public comments did not provide new or supplemental information on the

susceptibility of *M. ferox* to sedimentation, and we did not find any new or supplemental information. We conclude that *M. ferox* has some level of susceptibility to sedimentation, but the available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on the susceptibility of *M. ferox* to predation. *Mycetophyllia ferox* has not been susceptible to predation. Public comments did not provide new or supplemental information on *M. ferox's* susceptibility to predation, and we did not find any new or supplemental information. We conclude that *M. ferox* has low susceptibility to predation.

The SRR and SIR did not provide species-specific information on the effects of sea level rise on *M. ferox.* The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *M. ferox's* susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *M. ferox* has some susceptibility to sea level rise, but the available information does not provide a more precise description of susceptibility.

The SRR and SIR provided the following information on *M. ferox's* susceptibility to collection and trade. *Mycetophyllia ferox* is not reported to be an important species for trade. Exports of *M. ferox* were ten pieces in 2000, two in 2003, and five in 2007.

The public comments did not provide new or supplemental information on the susceptibility of *M. ferox* to collection and trade. Supplemental information we found confirmed low collection and trade of *M. ferox* with gross exports between 2000 and 2012 averaging fewer than two corals per year (data available at *http://trade.cites.org/*). Thus, we conclude that *M. ferox* has low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *M. ferox.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *M. ferox* occurs in seven Atlantic ecoregions that encompass 26 kingdom's or countries' EEZs. The 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Honduras, Jamaica, Kingdom of the Netherlands, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Overseas Territories), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *M. ferox,* described first as a percentage of the above kingdoms and countries that utilize them to any degree, and, second as the percentages of those kingdoms and countries whose regulatory mechanisms may be limited in scope, are as follows general coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *M. ferox* are reef fishing regulations and area management for protection and conservation. However, half of the reef-fish fishing regulations are limited in scope and may not provide substantial protection for the coral species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *M. ferox.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the extinction risk for *M. ferox* include disease, rare abundance, and observed declines in abundance.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. ferox,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. *Mycetophyllia ferox* has declined due to disease in at least a portion of its range and has low recruitment, which limits its capacity for recovery from mortality events and exacerbates vulnerability to extinction. Despite the large number of islands and environments that are included in the species' range, geographic distribution in the highly disturbed Caribbean exacerbates vulnerability to extinction over the foreseeable future because *M. ferox* is limited to an area with high, localized human impacts and predicted increasing threats. Its depth range of five to 90 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower temperatures than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes shallow and mesophotic reefs which moderates vulnerability to extinction over the foreseeable future because the species occurs in numerous types of reef environments that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. *Mycetophyllia ferox* is usually uncommon to rare throughout its range. Its absolute abundance has been estimated as at least hundreds of thousands of colonies in the Florida Keys and Dry Tortugas combined and is higher than the estimate from these two locations due to the occurrence of the species in many other areas throughout its range. Its abundance, combined with spatial variability in ocean warming and acidification across the species' range, moderate vulnerability to extinction because the threats are non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *M. ferox* was proposed for listing as endangered because of: High

vulnerability to disease (C); moderate vulnerability to ocean warming (E) and acidification (E); high vulnerability to nutrient over-enrichment (A and E); rare general range-wide abundance (E); decreasing trend in abundance (E); low relative recruitment rate (E); moderate overall distribution (based on narrow geographic distribution and wide depth distribution (E); restriction to the Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *M. ferox* from endangered to threatened. We made this determination based on a more species-specific and holistic approach, including consideration of the buffering capacity of this species' spatial and demographic traits, and the best available information above on *M. ferox's* spatial structure, demography, threat susceptibilities, and management. This combination of factors indicates that *M. ferox* is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Mycetophyllia ferox* is highly susceptible to disease (C) and susceptible to ocean warming (ESA Factor E), acidification (E), trophic effects of fishing (A), nutrients (A, E), and sedimentation (A, E). These threats are expected to continue and increase into the future. In addition, the species is at heightened extinction risk due to inadequate existing regulatory mechanisms to address global threats (D);

(2) *Mycetophyllia ferox* has experienced significant declines in Florida and has likely experienced decline in other locations in its range;

(3) *Mycetophyllia ferox* has a usually uncommon to rare occurrence throughout its range, which heightens the potential effect of localized mortality events and leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections;

(4) *Mycetophyllia ferox* is geographically located in the highly disturbed Caribbean where localized human impacts are high and threats are predicted to increase as described in the Threats Evaluation section. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(5) *Mycetophyllia ferox*'s low recruitment limits the capacity for recovery from threat-induced mortality events throughout the range over the foreseeable future.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *M. ferox*'s spatial structure, demography, threat vulnerabilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *Mycetophyllia ferox*'s distribution within the Caribbean increases its risk of exposure to threats as described above, its depth distribution is five to 90 m and its habitat includes various shallow and mesophotic reef environments. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will experience highly variable thermal regimes and ocean chemistry on local and regional scales at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) *Mycetophyllia ferox*'s absolute abundance is at least hundreds of thousands of colonies based on estimates from two locations. Absolute abundance is higher than estimates from these locations since *M. ferox* occurs in many other locations throughout its range. This absolute abundance allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. Its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, multitudes of conservation efforts are already broadly employed that are likely benefiting *M. ferox.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species' status to the point at which listing is not warranted.

Genus Dendrogyra

The SRR and SIR provided the following information on morphology and taxonomy of *Dendrogyra. Dendrogyra cylindrus* is the only species in the genus *Dendrogyra.* It is easily identifiable, and there is no taxonomic confusion. The public comments did not provide new or supplemental information on the morphology or taxonomy of *D. cylindrus*, and we did not find any new or supplemental information.

Dendrogyra cylindrus

Introduction

The SRR and SIR provided the following information on the morphology of *D. cylindrus. Dendrogyra cylindrus* forms cylindrical columns on top of encrusting bases. Colonies are generally grey-brown in color and may reach three meters in height. Tentacles remain extended during the day, giving columns a furry appearance.

Spatial Information

The SRR and SIR provided the following information on *D. cylindrus*'s distribution, habitat, and depth range. *Dendrogyra cylindrus* is present in the western Atlantic and throughout the greater Caribbean. The SRR reports a single known colony in Bermuda that is in poor condition. *Dendrogyra cylindrus* inhabits most reef environments in water depths ranging from one to 25 m.

The public comments did not provide new or supplemental information on *D. cylindrus*'s distribution, habitat, or depth range. Supplemental information we found on *D. cylindrus*'s distribution, habitat, and depth range include the following. *Dendrogyra cylindrus* is absent from the southwest Gulf of Mexico (Tunnell, 1988). There is fossil evidence of the presence of *D. cylindrus* off Panama less than 1000 years ago, but it has been reported as absent today (Florida Fish and Wildlife Conservation Commission, 2013). Veron (2014)

confirms the presence of *D. cylindrus* in seven out of a potential 11 ecoregions in the western Atlantic and wider-Caribbean that are known to contain corals. The four ecoregions in which it is not reported are the Flower Garden Banks and off the coasts of Bermuda, Brazil, and the southeast U.S. north of south Florida. Although *D. cylindrus*'s depth range is 1 to 25 m, it is most common between five and 15 m depth (Acosta and Acevedo, 2006; Cairns, 1982; Goreau and Wells, 1967).

All information on *D. cylindrus*'s distribution can be summarized as follows. *Dendrogyra cylindrus* is distributed throughout most of the greater Caribbean in most reef environments between 1 to 25 m depth. It currently appears to be absent from Panama where it historically occurred within the last 1000 years.

Demographic Information

The SRR and SIR provided the following information on *D. cylindrus*'s abundance and population trends. *Dendrogyra cylindrus* is uncommon but conspicuous with scattered, isolated colonies. It is rarely found in aggregations. *Dendrogyra cylindrus* has been reported to be common on Pleistocene reefs around Grand Cayman, but rare on modern reefs. In monitoring studies, cover is generally less than one percent. Between 2005 and 2007, mean density of *D. cylindrus* was approximately 0.5 colonies per 10 m^2 in the Florida Keys. In a study of *D. cylindrus* demographics at Providencia Island, Colombia, a total of 283 *D. cylindrus* colonies were detected in a survey of 1.66 km^2 for and overall density of 172.0 ± 177.0 (SE) colonies per km^2.

The public comments provided supplemental information on *D. cylindrus*'s abundance but not on population trends. In stratified random samples of the Florida Keys, *D. cylindrus* ranked least common out of 47 coral species in 2005 and 41 out of 43 species in 2009. Based on random surveys stratified by habitat type, extrapolated abundance for the Florida Keys was 23,000 ± 23,000 (SE) colonies in 2005 and 25,000 ± 25,000 (SE) colonies in 2009. Because these population estimates were based on random sampling, differences between years is more likely a function of sampling effort rather than an indication of population trends. All *D. cylindrus* colonies reported in 2005 were in the 70 to 80 cm diameter size class with less than two percent partial mortality. Four years later in 2009, all reported colonies were greater than 90 cm. No *D. cylindrus* colonies were encountered in 600 surveys from Key Biscayne to Key West, Florida in 2012, with the authors noting sampling design was not optimized for this species. This species was not reported in the Dry Tortugas in 2006 and 2008, and rarely encountered during pilot studies conducted over several years (1999 to 2002) ranking 49th out of 49 coral species (Miller *et al.,* 2013).

Supplemental information we found on *D. cylindrus*'s abundance and population trends confirms the uncommon occurrence, rare encounter rate, low percent cover, and low density. During surveys of Utila, Honduras between 1999 and 2000, *D. cylindrus* was sighted in 19.6 percent of 784 surveys and ranked 26th most common in abundance out of 48 coral species (Afzal *et al.,* 2001). In surveys of the upper Florida Keys in 2011, *D. cylindrus* was the second rarest out of 37 coral species and encountered at one percent of sites (Miller *et al.,* 2011b).

In stratified random surveys from Palm Beach County to the Dry Tortugas, Florida between 2005 and 2010, *D. cylindrus* was seen only on the ridge complex and mid-channel reefs at densities of 1.09 and 0.1 colonies per 10 m^2, respectively (Burman *et al.,* 2012). Average number of *D. cylindrus* colonies in remote reefs off southwest Cuba was 0.013 ± 0.045 colonies per 10 m transect, and the species ranked sixth rarest out of 38 coral species (Alcolado *et al.,* 2010).

Out of 283 *D. cylindrus* colonies at Providencia Island, Colombia, 70 were fragments resulting from asexual fragmentation, and no sexual recruits were observed. Size class distribution was skewed to smaller size classes less than 60 cm in height, and average colony height was 73.8 ± 46.0 cm (Acosta and Acevedo, 2006).

Dendrogyra cylindrus's average percent cover was 0.002 on patch reefs and 0.303 in shallow offshore reefs in annual surveys of 37 sites in the Florida Keys between 1996 and 2003 (Somerfield *et al.,* 2008). At permanent monitoring stations in the U.S. Virgin Islands, *D. cylindrus* has been observed in low abundance at 10 of 33 sites and, where present, ranged in cover from less than 0.05 percent to 0.22 percent (Smith, 2013). In Dominica, *D. cylindrus* comprised less than 0.9 percent cover and was present at 13.3 percent of 31 surveyed sites (Steiner, 2003). At seven fringing reefs off Barbados, *D. cylindrus* was observed on one reef, and cover was 2.7 ± 1.4 percent (Tomascik and Sander, 1987). In monitored photo-stations in Roatan, Honduras, cover of *D. cylindrus* increased slightly from 1.35 percent in 1996 to 1.67 percent in 1999 and then declined to 0.44 percent in 2003 and 0.43 percent in 2005 (Riegl *et al.,* 2009). In the U.S. Virgin Islands, seven percent of 26 monitored colonies experienced total colony mortality between 2005 and 2007, though the very low cover of *D. cylindrus* (0.04 percent) remained relatively stable during this time period (Smith *et al.,* 2013b).

All sources of information on *D. cylindrus*'s abundance and population trends can be summarized as follows. Based on population estimates, there are at least tens of thousands of *D. cylindrus* colonies present in the Florida Keys. Absolute abundance is higher than the estimate from this location given the presence of this species in many other locations throughout its range. Although there is evidence of potentially higher population levels in some areas of the Caribbean during the Pleistocence, *D. cylindrus* is currently uncommon to rare. Few studies report *D. cylindrus* population trends, and the low abundance and infrequent encounter rate in monitoring programs result in small samples sizes. The low coral cover of this species renders monitoring data difficult to extrapolate to realize trends. Therefore, we conclude that *D. cylindrus* is naturally uncommon to rare and that trends are unknown.

Other Biological Information

The SRR and SIR provided the following information on *D. cylindrus*'s life history. *Dendrogyra cylindrus* is a gonochoric (separate sexes) broadcast spawning species with relatively low annual egg production for its size. The combination of gonochoric spawning with persistently low population densities is expected to yield low rates of successful fertilization and low larval supply. Sexual recruitment of this species is low, and reported juvenile colonies in the Caribbean are lacking. *Dendrogyra cylindrus* can propagate by fragmentation following storms or other physical disturbance. Average growth rates of 1.8 to 2.0 cm per year in linear extension have been reported in the Florida Keys compared to 0.8 cm per year in Colombia and Curaçao. Partial mortality rates are size-specific with larger colonies having greater rates. Frequency of partial mortality can be high (65 percent of 185 colonies surveyed in Colombia), while the amount of partial mortality per colony is generally low (average of 3 percent of tissue area affected per colony).

The public comments did not provide new or supplemental information on *D. cylindrus*'s life history. Supplemental information we found on *D. cylindrus*'s life history includes the following. Spawning observations have been made

several nights after the full moon of August in the Florida Keys (Neely *et al.,* 2013; Waddell and Clarke, 2008).

Darling *et al.* (2012) performed a biological trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Dendrogyra cylindrus* was classified as a ''competitive'' species, thus likely more vulnerable to environmental stress.

The SRR and SIR provided the following other biological information for *D. cylindrus. Dendrogyra cylindrus* appears to be sensitive to cold temperatures. Feeding rates (removal of suspended particles in seawater) are low relative to most other Caribbean corals, indicating it is primarily a tentacle feeder rather than a suspension feeder. However, *D. cylindrus* has a relatively high photosynthetic rate, and stable isotope values suggest it receives substantial amounts of photosynthetic products from its zooxanthellae.

The public comments did not provide new or supplemental biological information for *D. cylindrus.* Supplemental information we found confirms that *D. cylindrus* is sensitive to cold temperatures and is summarized as follows. In laboratory studies of cold shock, *D. cylindrus* had the highest zooxanthellae expulsion rate of three species tested at 12 degrees C (Muscatine *et al.,* 1991). During the 2010 cold water event in the Florida Keys, *D. cylindrus* was one of the most affected coral species with 100 percent mortality on surveyed inshore reefs (Kemp *et al.,* 2011).

Susceptibility to Threats

The threat susceptibility information from the SRR and SIR was interpreted in the proposed rule for *D. cylindrus'*s vulnerabilities to threats as follows: High vulnerability to disease; moderate vulnerability to ocean warming, acidification, trophic effects of fishing, sedimentation, and nutrient enrichment; and low vulnerability to sea level rise, predation, and collection and trade.

The SRR and SIR provided the following information on the susceptibility of *D. cylindrus* to ocean warming. There are conflicting characterizations of bleaching susceptibility of *D. cylindrus* in the literature. The species was bleaching-resistant during the 1983 mass-bleaching event in Florida. Characterizations of the 2005 mass-bleaching event in southern Florida and in the U.S. Virgin Islands noted that no bleached *D. cylindrus* colonies were observed, but during the same event in Barbados 100 percent of 15 *D. cylindrus* colonies bleached.

Van Woesik *et al.* (2012) developed a coral resiliency index based on biological traits and processes to evaluate extinction risk due to bleaching. Evaluations were performed at the genus level. They rated the resiliency of *D. cylindrus* as 3 out of a range of −6 to 7 observed in other coral genera. Less than or equal to −3 was considered highly vulnerable to extinction, and greater than or equal to 4 was considered highly tolerant. Thus, *D. cylindrus* was rated as moderately tolerant. While this study was included in the SIR, species-specific findings for *Dendrogyra* were not included. The public comments (Comment 47) indicated the results of this study should be considered in the listing status of *D. cylindrus.*

The public comments did not provide new or supplemental information on the susceptibility of *D. cylindrus* to ocean warming. Supplemental information we found confirms the variable susceptibility of *D. cylindrus* to ocean warming and bleaching. *Dendrogyra cylindrus* was among 42 species reported not to have bleached at various locations in the western Atlantic (British Virgin Islands, Jamaica, and Mona Island) during the 1987 bleaching event, while the authors noted these species were reported bleached at other locations or other areas by others (Williams and Bunkley-Williams, 1990). None of the 18 *D. cylindrus* colonies monitored in Roatan, Honduras experienced bleaching or mortality in the 1998 event where bleaching ranged from zero to 89 percent in the 22 species monitored (Riegl *et al.*, 2009). Across 12 locations in Puerto Rico, 100 percent of *D. cylindrus* colonies bleached during the 2005 temperature anomaly (Waddell and Clarke, 2008). However, Bruckner and Hill (2009) report less severe *D. cylindrus* bleaching during the 2005 event in Puerto Rico; approximately 25 percent paled and 10 percent bleached on reefs off Mona and Desecheo Islands, which was relatively low compared to some other species such as *Orbicella faveolata,* which had approximately 60 percent bleached colonies. At Dairy Bull Reef in Jamaica, 50 percent of *D. cylindrus* colonies bleached during the 2005 bleaching event, but no mortality was reported for this species (Quinn and Kojis, 2008). An average of 33 percent of the monitored *D. cylindrus* colonies in the U.S. Virgin Islands bleached in 2005, and 67 percent paled. None of the monitored colonies bleached or paled during the less severe 2010 bleaching event (Smith *et al.*, 2013b).

All sources of information are used to describe *D. cylindrus*'s susceptibility to ocean warming as follows. There are conflicting characterizations of the susceptibility of *D. cylindrus* to bleaching. Some locations experienced high bleaching of up to 100 percent of *D. cylindrus* colonies during the 2005 Caribbean bleaching event while others had a smaller proportion of colonies bleach (10 to 50 percent). Reports of low mortality after less severe bleaching indicate potential resilience, though mortality information is absent from locations that reported high bleaching frequency. Although bleaching of most coral species is spatially and temporally variable, understanding the susceptibility of *D. cylindrus* is further confounded by the species' rarity and, hence, low sample size in any given survey. We conclude that although *D. cylindrus* appears to have resistance to bleaching from warmer temperatures in some portions of its range under some circumstances, it is likely to have some susceptibility to ocean warming, given the high rates of bleaching observed at times. However, the available information does not support a more detailed description of susceptibility.

The SRR and SIR provided the following information on the susceptibility of *D. cylindrus* to acidification. No specific research has addressed the effects of acidification on the genus *Dendrogyra.* However, most corals studied have shown negative relationships between acidification and growth, and acidification is likely to contribute to reef destruction in the future. While ocean acidification has not been demonstrated to have caused appreciable declines in coral populations so far, it is considered a significant threat to corals by 2100.

The public comments did not provide new or supplemental information on the susceptibility of *D. cylindrus* to acidification, and we did not find any new or supplemental information.

All sources of information are used to describe *D. cylindrus'*s susceptibility to acidification as follows. *Dendrogyra cylindrus* likely has some susceptibility to acidification, but the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR provided the following information on the susceptibility of *D. cylindrus* to disease. *Dendrogyra cylindrus* is susceptible to black band disease and white plague, though impacts from white plague are likely more extensive because of rapid progression rates. The large colony size suggests that individual colonies are less likely to suffer complete mortality

from a given disease exposure, but low colony density suggests that even small degrees of mortality increase extinction risk.

The public comments did not provide new or supplemental information on the susceptibility of *D. cylindrus* to disease. Supplemental information we found on the susceptibility of *D. cylindrus* to disease includes the following. In a January 2002 survey at Providencia Island, Colombia, 4.2 percent of *D. cylindrus* colonies (n=185) exhibited white plague type II (Acosta and Acevedo, 2006). The prevalence of diseased *D. cylindrus* colonies was approximately three percent in Mexico from 2002 to 2004 (Ward *et al.*, 2006). Though white diseases were reported to cause colony mortality in some coral species in the U.S. Virgin Islands after the 2005 Caribbean bleaching event, none of the monitored *D. cylindrus* colonies exhibited signs of white disease (Smith *et al.*, 2013b).

All sources of information are used to describe *D. cylindrus'*s susceptibility to disease as follows. Disease appears to be present in about three to four percent of the population in some locations. Because no studies have tracked disease progression in *D. cylindrus,* the effects of disease are uncertain at both the colony and population level. However, the reported low partial mortality and large colony size suggest that individual colonies are less likely to suffer complete colony mortality from a given disease exposure. Therefore, we conclude that *D. cylindrus* has some susceptibility to disease, but the available information does not support a more precise description of susceptibility to this threat.

The SIR and SRR did not provide any species-specific information on the trophic effects of fishing on *D. cylindrus.* The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the trophic effects of fishing on *D. cylindrus.* However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. This effect coupled with the species' low recruitment rate indicates it likely has some susceptibility to the trophic effects of fishing. The available information does not support a more precise description of its susceptibility.

The SRR and SIR provided the following information on the susceptibility of *D. cylindrus* to sedimentation. The rate of sand removal from *D. cylindrus* tissues in laboratory conditions was intermediate among 19 Caribbean coral species tested.

The public comments did not provide new or supplemental information on the susceptibility of *D. cylindrus* to sedimentation. Supplemental information we found includes the following. *Dendrogyra cylindrus,* along with *Acropora* spp. and *Meandrina meandrites*, was found in fossil assemblages only on the reef tract and not on the lagoonal patch reefs around Grand Cayman, suggesting that this species may be ineffective at sediment rejection like the other two species or may be intolerant of turbidity (Hunter and Jones, 1996).

All sources of information are used to describe *D. cylindrus*'s susceptibility to sedimentation as follows. *Dendrogyra cylindrus* appears to be moderately capable of removing sediment from its tissue. However, *D. cylindrus* may be more sensitive to turbidity due to its high reliance on nutrition from photosynthesis and as evidenced by the geologic record. Therefore, we conclude that *D. cylindrus* has some susceptibility to sedimentation, but the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR provided the following information on the susceptibility of *D. cylindrus* to nutrient enrichment. Along a eutrophication gradient in Barbados, *D. cylindrus* was found at a single site, one of those farthest removed from pollution. The public comments did not provide new or supplemental on the susceptibility of *D. cylindrus* to nutrient enrichment, and we did not find any new or supplemental information.

All sources of information are used to describe *D. cylindrus*'s susceptibility to nutrient enrichment as follows. *Dendrogyra cylindrus* may be susceptible to nutrient enrichment as evidenced by its absence from eutrophic sites in one location. However, there is uncertainty about whether its absence is a result of eutrophic conditions or a result of its naturally uncommon or rare occurrence. Therefore, we conclude that *D. cylindrus* likely has some susceptibility to nutrient enrichment. However, the available information does not support a more precise description of its susceptibility to this threat.

The SRR and SIR provided the following information on the susceptibility of *D. cylindrus* to predation. The corallivorous fireworm *Hermodice carunculata* has been observed feeding on diseased colonies of *D. cylindrus*, but generally, predation is not observed to cause noticeable mortality on *D. cylindrus,* despite its rarity.

The public comments did not provide new or supplemental information on *D. cylindrus*'s susceptibility to predation. Supplemental information we found includes the following. The sea urchin, *Diadema antillarum*, has been reported to cause partial mortality at the base of *D. cylindrus* colonies (Acosta and Acevedo, 2006).

All sources of information are used to describe *D. cylindrus*'s susceptibility to predation as follows. The low amounts of observed mortality indicate *D. cylindrus* has low susceptibility to predation.

The SRR and SIR did not provide species-specific information on the effects of sea level rise on *D. cylindrus.* The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *D. cylindrus*'s susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *D. cylindrus* has some susceptibility to sea level rise, but the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR provided information on *D. cylindrus*'s susceptibility to collection and trade. Overall trade reports indicate very low rates of international trade of *D. cylindrus.* It is possible that historical curio collecting of *D. cylindrus* may have significantly reduced populations off Florida.

The public comments did not provide new or supplemental information of the susceptibility of *D. cylindrus* to collection and trade. Supplemental information we found confirms what was provided by the SRR and SIR. Prior to its ban in the 1980s, collection of *D. cylindrus* for curios was once widespread off the coast of Florida (Florida Fish and Wildlife Conservation Commission, 2013). From 2000 to 2012, international trade of this species was low with gross exports ranging from zero to nine corals per year (average less than two per year; data available at *http://trade.cites.org*).

All sources of information are used to describe *D. cylindrus*'s susceptibility to collection and trade as follows. In the past, collection and trade may have had a large effect on the population in some locations like Florida. However, collection and trade likely does not have a large impact on the population currently. Therefore, we conclude that the susceptibility of *D. cylindrus* to collection and trade is currently low.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *D. cylindrus.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *D. cylindrus* occurs in seven Atlantic ecoregions that encompass 26 kingdom's and countries' EEZs. The 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Caribbean Territories), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *D. cylindrus*, described first as a percentage of the above kingdoms and countries that utilize them to any degree, and, second as the percentages of those kingdoms and countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *D. cylindrus* are reef fishing regulations and area management for protection and conservation. However, half of the reef fishing regulations are limited in scope and may not provide substantial protection for the species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *D. cylindrus.*

Dendrogyra cylindrus is listed as threatened on the State of Florida endangered and threatened species list. The state has an action plan for conservation of the species with several objectives including stabilizing or increasing the existing population, the current area of occupancy, and the number of sexually mature individuals and evaluating the reproductive potential of the population over the next decade (Florida Fish and Wildlife Conservation Commission, 2013). However, the management plan recognizes that there are threats to *D. cylindrus* that need to be addressed outside the scope of the plan in order to improve the status of this species.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its demographic and spatial characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the extinction risk for *D. cylindrus* include the overall low population density and low population size, gonochoric spawning mode and lack of observed sexual recruitment, and susceptibility to observed disease mortality. The SRR acknowledged that, given the apparent naturally rare status of this species, some undescribed adaptations to low population density may exist in this species, particularly with regard to overcoming fertilization limitation between spawned gametes from gonochoric parent colonies that are at great distance from one another. Nonetheless, the pervasiveness of threats characterizing the Caribbean region was deemed to represent substantial extinction risk given this species' low population size.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *D. cylindrus,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. *Dendrogyra cylindrus* is susceptible to a number of threats, but there is little evidence of population declines thus far. Despite the large number of islands and environments that are included in the species' range, geographic distribution in the highly disturbed Caribbean exacerbates vulnerability to extinction over the foreseeable future because *D. cylindrus* is limited to an area with high, localized human impacts and predicted increasing threats. *Dendrogyra cylindrus* inhabits most reef environments in water depths ranging from 1 to 25 m which moderates vulnerability to extinction over the foreseeable future because the species occurs in numerous types of reef environments that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. It is naturally rare. Estimates of absolute abundance are at least tens of thousands of colonies in the Florida Keys, and absolute abundance is higher than estimates from this location due to the occurrence of the species in many other areas throughout its range. It is a gonochoric broadcast spawner with observed low sexual recruitment. Its low abundance, combined with its geographic location, exacerbates vulnerability to extinction because increasingly severe conditions within the species' range are likely to affect a high proportion of its population at any given point in time, and low sexual recruitment is likely to inhibit recovery potential from mortality events, further exacerbating its vulnerability to extinction.

Listing Determination

In the proposed rule, using the determination tool formula approach, *D. cylindrus* was proposed for listing as endangered because of: High vulnerability to disease (C); moderate vulnerability to ocean warming (E) and acidification (E); rare general range-wide abundance (E); low relative recruitment rate (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); restriction to the Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *D. cylindrus* from endangered to threatened. We made this determination based on a more species-specific and holistic approach, including consideration of the buffering capacity of this species' spatial and demographic traits, and the best available information above on *D. cylindrus*'s spatial structure, demography, threat susceptibilities, and management. This combination of factors indicates that *D. cylindrus* is likely to become endangered throughout

its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Dendrogyra cylindrus* is susceptible to ocean warming (ESA Factor E), disease (C), acidification (E), nutrient enrichment (A and E), sedimentation (A and E), and trophic effects of fishing (A). These threats are expected to continue and increase into the future. In addition, the species is at heightened extinction risk due to inadequate existing regulatory mechanisms to address global threats (D).

(2) *Dendrogyra cylindrus* is geographically located in the highly disturbed Caribbean where localized human impacts are high and threats are predicted to increase as described in the Threats Evaluation section. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future;

(3) *Dendrogyra cylindrus* has an uncommon to rare occurrence throughout its range, which heightens the potential effect of localized mortality events and leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections; and

(4) *Dendrogyra cylindrus*'s low sexual recruitment limits its capacity for recovery from threat-induced mortality events throughout its range over the foreseeable future.

The combination of these characteristics and future projections of threats indicates the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *D. cylindrus* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) There is little evidence of *D. cylindrus* population declines (*i.e.*, the species continues to be naturally rare);

(2) *Dendrogyra cylindrus* shows evidence of resistance to bleaching from warmer temperatures in some portions of its range under some circumstances (*e.g.*, Roatan, Honduras); and

(3) While *D. cylindrus*'s distribution within the Caribbean increases its risk of exposure to threats as described above, its habitat includes most reef environments in water depths ranging from one to 25 m. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will experience highly variable thermal regimes and ocean chemistry on local and regional scales at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Last, *D. cylindrus* is listed as threatened on the State of Florida endangered and threatened species list, and an action plan for conservation has recently been developed. Implementation of the action plan will no doubt have benefits to the species, but it is too soon to evaluate its effectiveness for conserving the species. Further, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.*, GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species' status to the point at which listing is not warranted.

Genus Dichocoenia

The SRR and SIR provided the following information on *Dichocoenia*'s morphology and taxonomy. There are potentially two species in the genus *Dichocoenia: Dichocoenia stokesi* and *Dichocoenia stellaris. Dichocoenia stellaris* has been described as differing from *D. stokesi* by its pancake-like colony morphology and dominance of smaller, circular calices. Some coral taxonomists consider there to be only one species, *D. stokesi*, as specimens have all variations of skeletal shape and valley length. The public comments did not provide any new or supplemental information on *Dichocoenia*'s taxonomy or morphology, and we did not find any new or supplemental information.

Most studies over the last several decades describe *D. stokesi* and do not separately report data for colonies with *D. stellaris* morphology. Because *D. stokesi* was petitioned for listing and *D. stellaris* was not, we considered all information on *D. stokesi* and did not consider information on *D. stellaris*, despite some uncertainty of whether or not these are the same species. If *D. stokesi* is accepted to include all sizes of calices, it is easy to identify; if not then species delineations are somewhat arbitrary. We did not find any supplemental information on *Dichocoenia*'s taxonomy.

Dichocoenia stokesi

Introduction

Dichocoenia stokesi forms mounding-spherical colonies that are usually orange-brown but sometimes green.

Spatial Information

The SRR and SIR provided the following information on *D. stokesi*'s distribution, habitat, and depth range. *Dichocoenia stokesi* is located in the western Atlantic, Gulf of Mexico (including the Florida Middle Grounds and Flower Garden Banks), and throughout the Caribbean. It is also reported in Bermuda, though it is rare. *Dichocoenia stokesi* occurs in most reef environments within its range, including mesophotic reefs, back- and fore-reef environments, rocky reefs, lagoons, spur-and-groove formations, channels, and occasionally at the base of reefs. It has been reported in water depths ranging from two to 72 m.

The public comments did not provide any new or supplemental information on *D. stokesi*'s distribution, habitat, or depth range. Supplemental information we found includes the following. Veron (2014) confirmed the occurrence of *D. stokesi* in nine out of 11 ecoregions in the western Atlantic and wider-Caribbean known to contain corals. The two ecoregions in which it is not reported are off the coasts of Brazil, and the southeast U.S. north of south Florida. Kahng *et al.* (2010) report that *D. stokesi* is relatively abundant and dominates the coral community on mesophotic reefs greater than 40 m depth in the northern Gulf of Mexico but not in Belize, Puerto Rico, U.S. Virgin Islands, Jamaica, Curacao, Florida, Bermuda, Bahamas, or Barbados.

All information on *D. stokesi*'s distribution can be summarized as follows. *Dichocoenia stokesi* is distributed throughout most of the greater Caribbean in most reef environments within its range, including mesophotic reefs.

Demographic Information

The SRR and SIR provided the following information on *D. stokesi* abundance. *Dichocoenia stokesi* is characterized as usually uncommon. In surveys of southeast Florida and the

Florida Keys between 2005 and 2007, *D. stokesi* comprised between 1.8 and 7.0 percent of all coral colonies observed and was present at a density of approximately 1.7 colonies per 10 m^2, which was the ninth most abundant out of an observed 43 coral species.

The public comments provided the following supplemental information on *D. stokesi's* abundance. In stratified random surveys conducted by Miller *et al.* (2013) in the Florida Keys, *D. stokesi* ranked as the 8th most abundant species or higher in 2005, 2009, and 2012. Extrapolated abundance was 97.8 ± 13.1 (SE) million colonies in 2005, 53.8 ± 9.7 (SE) million colonies in 2009, and 81.6 ± 10.0 (SE) million colonies in 2012. Because population estimates were based on random sampling, differences between years are more likely a function of sampling effort rather than an indication of population trends. Most colonies were 30 cm or less in size, and size class distributions remained similar among the three sample periods (2005, 2009, and 2012). Larger colonies typically exhibited more partial mortality, which ranged between 20 and 80 percent for colonies larger than 10 cm.

In the Dry Tortugas, *D. stokesi* was ranked 12th and 14th most common in 2006 and 2008, respectively. Extrapolated colony abundance was 12.1 ± 4.1 (SE) million colonies in 2006 and 7.1 ± 1.1 (SE) million colonies in 2008. All *D. stokesi* colonies observed were 40 cm or less in 2006, and 20 cm or less in 2008. Partial mortality was higher in larger colonies and ranged from approximately 20 to 65 percent in colonies larger than 10 cm (Miller *et al.,* 2013).

Supplemental information we found on *D. stokesi's* abundance includes the following. In surveys of Utila, Honduras between 1999 and 2000, *D. stokesi* was the eighth most common species and was sighted in 52.6 percent of 784 surveys (Afzal *et al.,* 2001). *Dichocoenia stokesi* has been observed in low abundance at 17 of 33 monitoring sites in the U.S. Virgin Islands and is the 33rd most common species by percent cover (Smith, 2013). Off southeast Florida, *D. stokesi* comprised 6.8 percent of the coral population between 9 and 32 m depth and was ranked the 5th most abundant coral species out of 27 coral species encountered (Goldberg, 1973). In surveys of Conch Reef in the Florida Keys in 1995, juvenile *D. stokesi* comprised between approximately two and six percent of the overall juvenile coral population, and the highest proportion occurred at 14 m and decreased with depth (Edmunds *et al.,* 2004). Off South Caicos Island, *D. stokesi* was most frequently encountered on shallow pavement (9 m) and comprised 15 percent of all coral colonies counted; however on the deeper spur and groove (18 m) and fore-reef (27 m), it comprised 2 and 0.7 percent of colonies counted, respectively (Steiner, 1999). Bak and Meesters (1999) report that about 50 percent of *D. stokesi* colonies surveyed in Florida and Curacao were in the 10 to 20 cm size class.

Between 1996 and 2003, average cover of *D. stokesi* per habitat type ranged from 0.02 to 0.12 percent in the Florida Keys and was highest on patch reefs (Somerfield *et al.,* 2008). Of three sites surveyed in Bermuda, cover of *D. stokesi* was 0.02 ± 0.03 percent at one site (Dodge *et al.,* 1982). In surveys off Colombia from 1998 to 2004, *D. stokesi* cover ranged from 0.02 to 0.6 percent, but the species was only present in nine out of 32 sites (Rodriguez-Ramirez *et al.,* 2010). In the Bahamas Archipelago, cover of *D. stokesi* was on average 0.01 to 0.02 percent in 2002 to 2004 (Roff *et al.,* 2011). In Dominica, *D. stokesi* was observed in 47 percent of 31 sites surveyed and comprised less than one percent cover (Steiner, 2003). *Dichocoenia stokesi* was present on four out of seven fringing reefs off Barbados and comprised between 0.1 and 0.6 percent cover (Tomascik and Sander, 1987).

On remote reefs off southwest Cuba, *D. stokesi* was observed on 30 reef front sites at densities of 0.052 ± 0.096 (SD) colonies per 10 m transect, but was not observed at any of the 38 surveys of the reef crest (Alcolado *et al.,* 2010). In 1,176 sites surveyed in southeast Florida and the Florida Keys between 2005 and 2010, density of *D. stokesi* ranged from 0.07 to 2.35 colonies per 10 m^2 on reef zones where they were found, and this species was the eighth most abundant species out of 42 coral species encountered (Burman *et al.,* 2012).

The SRR and SIR provided the following information on population trends of *D. stokesi.* A comparison of survey data from 19 sites in Spaanse Water, Curacao in 1961 and 1992 indicated an 80 percent decrease in relative abundance of *D. stokesi* between the two survey periods. In surveys of the Florida Keys between 1995 and 2002 during and after a disease outbreak, the average number of *D. stokesi* colonies per 314-m^2 site decreased from 44.3 to 11.2, a decline of almost 75 percent. The maximum number of *D. stokesi* colonies per site decreased from 95 to 43, and the minimum number of colonies per site decreased from ten to one. There was a shift in the size class distribution between 1998 and 2002 with a decrease in the frequency of smaller size classes and a shift from dominance by smaller size classes to a more even distribution across small to larger size classes. Two *D. stokesi* recruits were found after the disease but did not survive to the following year. No colonies greater than 25 cm were observed in 1998, four years later (2002) many colonies greater than 25 cm were observed up to 55 cm.

The public comments did not provide new or supplemental information on *D. stokesi's* population trends, and we did not find any new or supplemental information.

All information on *D. stokesi's* abundance and population trends can be summarized as follows. *Dichocoenia stokesi* has been characterized as usually uncommon but is usually reported as one of the top 10 most abundant species where estimates are available. Based on population estimates, there are at least tens of millions of *D. stokesi* colonies present in both the Florida Keys and Dry Tortugas. Absolute abundance is higher than the estimate from these two locations given the presence of this species in many other locations throughout its range. The characterization of its occurrence as usually uncommon gives the impression of a lower population abundance than is indicated by population estimates. Density estimates range from 0.05 to 2.35 colonies per 10 m^2. The sometimes low density and small colony size result in low percent cover estimates, generally between 0.01 and less than 1 percent, and make it difficult to track population trends from percent cover data. Trend data indicate *D. stokesi* has decreased in abundance in at least two locations (*i.e.,* the Florida Keys, and a bay in Curacao). Presence of juveniles in several locations indicates recruitment is occurring. Recovery from severe population declines in the Florida Keys after a disease event was not reported seven years later. Thus, we conclude that population decline has occurred in some locations and that the species' absolute abundance is greater than hundreds of millions of colonies.

Other Biological Information

The SRR and SIR provided the following information on *D. stokesi's* life history. *Dichocoenia stokesi* is a gonochoric broadcast spawner with an overall sex ratio of 2 to 1 (male to female) in southeast Florida where a small portion of hermaphroditic colonies (approximately 18 percent) were observed. Minimum size at reproduction was 160 cm^2, and two potential spawning events per year were

inferred: one in late August/early September and a second in October. Recruitment levels, inferred from the presence of juveniles, is intermediate compared to other Caribbean coral species. Very low densities of *Dichocoenia* juveniles (approximately one percent of total juvenile colonies) have been observed in the Netherlands Antilles. Mean *D. stokesi* juvenile density among 566 sites surveyed during 1999 to 2009 averaged 0.11 per m^2 but reached as high as one juvenile per m^2 in certain habitats. The annual growth rate of *D. stokesi* has been reported as 2 to 7 mm per year in diameter and 2 to 5.2 mm per year in height.

The public comments did not provide new or supplemental information on the life history of *D. stokesi.* Supplemental information we found on the life history of *D. stokesi* includes the following. Chiappone and Sullivan (1996) reported density of juvenile *D. stokesi* range from 0.02 to 0.26 per m^2 at five out of nine sites surveyed in the Florida Keys between 1993 and 1994. Darling *et al.* (2012) performed a biological trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Dichocoenia stokesi* was classified as a ''stress-tolerant'' species, thus likely more tolerant of environmental stress.

The SRR and SIR provided the following other biological information about *D. stokesi.* The mounding morphology and large corallite diameter of *D. stokesi* enhance turbulence near the surface of colonies. This should, in turn, enhance mass transfer, which affects photosynthesis and respiration in *D. stokesi* as well as prey capture and nutrient uptake. Thresholds for uptake of inorganic nitrogen in *D. stokesi* have been reported to be fairly low (150 nM), giving it a potential advantage in nutrient-poor conditions.

The public comments did not provide new or supplemental information on *D. stokesi's* biology. Supplemental information we found on *D. stokesi's* biology includes the following. At 76 sites surveyed in the Florida Keys during the 2010 cold-water event, approximately 15 percent of *D. stokesi* paled, and approximately one percent bleached. Mortality was approximately four percent (The Nature Conservancy, 2010).

Susceptibility to Threats

The threat susceptibility information from the SRR and SIR was interpreted in the proposed rule for *D. stokesi's* vulnerabilities to threats as follows: High vulnerability to disease; moderate vulnerability to ocean warming, acidification, trophic effects of fishing, and sedimentation; and low vulnerability to sea level rise, predation, and collection and trade.

The SRR and SIR provided the following information on the susceptibility of *D. stokesi* to ocean warming. Of the 28 coral species that bleached along the Florida reef tract from Martin County through the lower Florida Keys from 2005 to 2007, *D. stokesi* had the lowest bleaching prevalence. During the 2005 Caribbean mass-bleaching event, it ranked 16th of 21 species in bleaching prevalence in Barbados and was observed to be bleaching-tolerant in the U.S. Virgin Islands.

Van Woesik *et al.* (2012) developed a coral resiliency index based on biological traits and processes to evaluate extinction risk due to bleaching. Evaluations were performed at the genus level. They rated the resiliency of *Dichocoenia* as 0 out of a range of −6 to 7 observed in other coral genera. Less than or equal to −3 was considered highly vulnerable to extinction, and greater than or equal to 4 was considered highly tolerant. Thus, *Dichocoenia* was rated in the middle.

The public comments did not provide new or supplemental information on the susceptibility of *D. stokesi* to ocean warming. Supplemental information we found on the susceptibility of *D. stokesi* to ocean warming includes the following. During the 1998 bleaching event, an average of 20 percent of *D. stokesi* colonies were greater than 50 percent bleached in the lower Florida Keys and Dry Tortugas; however, this was the lowest of 14 species that bleached (Waddell, 2005). Of the 22 species monitored off Roatan, Honduras, *D. stokesi* was one of eight species that did not bleach during the 1998 bleaching event (Riegl *et al.,* 2009).

During the 2005 temperature anomaly, *D. stokesi* colonies were fully bleached around La Parguera, Puerto Rico but were less frequently bleached at other locations around Puerto Rico (Waddell and Clarke, 2008). Off of Mona and Desecheo Islands, Puerto Rico, about 25 percent of *D. stokesi* paled and about 10 percent bleached; in the 16 coral species surveyed, bleaching ranged from less than five percent to approximately 60 percent of colonies (Bruckner and Hill, 2009). During the 2005 bleaching event, approximately 30 percent of *D. stokesi* colonies on six reefs bleached in Barbados, and *D. stokesi* around Grand Cayman experienced total bleaching (Wilkinson and Souter, 2008). None of the monitored *D. stokesi* colonies in the U.S. Virgin Islands bleached, and 67 percent paled during the 2005 bleaching event (Smith *et al.,* 2013b). In the Florida Keys, *D. stokesi* ranked 19th out of 25 species in amount of mortality during the 2005 bleaching event (Lirman *et al.,* 2011).

All sources of information are used to describe *D. stokesi's* susceptibility to ocean warming as follows. Reported bleaching of *D. stokesi* ranges from zero to about 60 percent. While reported bleaching of *D. stokesi* is temporally and spatially variable, compared to other Caribbean coral species, *D. stokesi* appears to be among the less susceptible to temperature-induced bleaching. Additionally, a report from the Florida Keys indicates that bleaching-induced mortality of *D. stokesi* was among the lowest compared to other Caribbean coral species. Thus, we conclude that *D. stokesi* has some susceptibility to ocean warming. However, the available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on the susceptibility of *D. stokesi* to acidification. No specific research has addressed the effects of acidification on the genus *Dichocoenia.* However, most corals studied have shown negative relationships between acidification and growth, and acidification is likely to contribute to reef destruction in the future. While ocean acidification has not been demonstrated to have caused appreciable declines in coral populations so far, it is considered a significant threat to corals by 2100.

The public comments did not provide new or supplemental information on the susceptibility of *D. stokesi* to acidification, and we did not find any new or supplemental information.

All sources of information are used to describe *D. stokesi's* susceptibility to acidification as follows. There is uncertainty about how *D. stokesi* will respond to ocean acidification, but based on the negative effects of acidification on growth of most corals, *D. stokesi* likely has some susceptibility to acidification. The available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on *D. stokesi's* susceptibility to disease. Black band disease, dark spot syndrome, and white plague have been reported to affect *D. stokesi.* In an outbreak of white plague in St. Lucia in 1997, six surveyed colonies of *D. stokesi* were infected, and average tissue mortality was about 65 percent. In surveys in Dominica

between 2000 and 2002, *D. stokesi* was one of four coral species most commonly affected by disease, and white plague predominantly affected larger-sized colonies. Of 17 species affected by white plague in the Florida Keys, *D. stokesi* was the most susceptible.

The public comments did not provide new or supplemental information on the susceptibility of *D. stokesi* to disease. Supplemental information we found on the susceptibility of *D. stokesi* to disease includes the following. In 1991, an outbreak of white plague was observed on Mona Island, Puerto Rico that affected 14 species, with the highest prevalence among small, massive corals including *D. stokesi,* many of which died within one to two weeks (Waddell, 2005). In Mexico, disease was prevalent on approximately one percent of *D. stokesi* colonies surveyed in 2004 (Ward *et al.,* 2006).

During an outbreak of white plague type II in the Florida Keys in 1995, mortality of *D. stokesi* averaged 26 percent and ranged from 0 to 38 percent (Richardson *et al.,* 1998). The disease routinely caused whole colony mortality within two to three days due to its infection of small coral colonies (usually less than 10 cm in diameter) and aggressive progression rate (up to 2 cm per day; Richardson, 1998). Between 1996 and 1998, out of 160 monitoring stations at 40 sites in the Florida Keys, the number of stations with *D. stokesi* colonies affected by disease increased through time with two stations affected in 1996, 22 in 1997, and 45 in 1998 (Porter *et al.,* 2001). However, no white plague was observed in *D. stokesi* in 2002 at the sites with the reported outbreak in 1995 (Richardson and Voss, 2005).

Disease surveys at St. Croix, U.S. Virgin Islands during the summer of 2001 revealed that *D. stokesi* had the highest prevalence of white plague type II out of seven species infected and the highest disease-related mortality (Kaczmarsky *et al.,* 2005). The prevalence of white plague type II on *D. stokesi* was 41 percent at one location and 60 percent at a second site. Of 107 *D. stokesi* colonies, 38 were infected, and 26 percent of the infected colonies, or 9.4 percent of the sample population, died within two months (Kaczmarsky *et al.,* 2005). After the 2005 bleaching event, 100 percent of monitored *D. stokesi* colonies in the U.S. Virgin Islands were infected with disease in 2006, but none of the colonies experienced total colony mortality (Smith *et al.,* 2013b).

All sources of information are used to describe *D. stokesi*'s susceptibility to disease as follows. Although *D. stokesi* is susceptible to several diseases, the most severe impacts have been the result of white plague. Low prevalence of diseased *D. stokesi* colonies have been reported from some locations, but outbreaks of white plague have caused rapid and substantial mortality in some other sites. Outbreaks in Puerto Rico and St. Lucia, while affecting *D. stokesi,* do not appear to have caused as severe mortality as in the Florida Keys and U.S. Virgin Islands. Thus, we conclude that *D. stokesi* has high susceptibility to disease.

The SIR and SRR did not provide any species-specific information on the trophic effects of fishing on *D. stokesi.* The public comments did not provide any new or supplemental information on the trophic effects of fishing on *D. stokesi,* and we did not find any new or supplemental information. However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. Based on D. *stokesi'*s inferred recruitment rates, we conclude that it likely has low susceptibility to trophic effects of fishing.

The SRR and SIR provided the following information on susceptibility of *D. stokesi* to sedimentation. A laboratory study examining oil/sediment rejection indicated that out of 19 Caribbean coral species examined, *D. stokesi* was intermediate in the rate of sediment removal from its tissues. In laboratory experiments, *D. stokesi* exhibited significant increases in respiration after 3 days of exposure to turbidity levels of 28 to 30 NTU, which are within allowable levels as regulated by the State of Florida for coastal construction projects. While light levels and photosynthesis were not affected, after six days of exposure to 14 to 16 NTU of turbidity, gross photosynthesis to respiration ratios were less than one in this species, and excessive mucus production was observed.

The public comments did not provide new or supplemental information on the susceptibility of *D. stokesi* to sedimentation. Supplemental information we found on the susceptibility of *D. stokesi* to sedimentation includes the following. The large calices, number of septa, and calical relief of *D. stokesi* give this species the capability to remove both fine sediment and larger grain sizes through polyp distension (Hubbard and Pocock, 1972).

All sources of information are used to describe *D. stokesi'*s susceptibility to sedimentation as follows. *Dichocoenia stokesi* is more tolerant of sedimentation than other coral species as it has the ability to remove both larger grain size and finer sediment. However, prolonged exposure (several days) to turbidity has been shown to cause physiological stress. We conclude that *D. stokesi* has some susceptibility to sedimentation. However, the available information does not support a more precise description of susceptibility.

The SRR and SIR did not provide any species or genus information on the susceptibility of *D. stokesi* to nutrients but provided the following. Land-based sources of pollution (including nutrients) often act in concert rather than individually and are influenced by other biological (*e.g.,* herbivory) and hydrological factors. Collectively, land-based sources of pollution are unlikely to produce extinction at a global scale; however, they may pose significant threats at local scales and reduce the resilience of corals to bleaching.

The public comments did not provide new or supplemental information on the susceptibility of *D. stokesi* to nutrients, and we did not find any new or supplemental information. Based on our knowledge that nutrients in general have a negative effect on corals, we conclude that *D. stokesi* has some level of susceptibility to nutrients, but the available information does not support a more precise description of susceptibility.

The SRR and SIR provided the following information on the susceptibility of *D. stokesi* to predation. *Dichocoenia stokesi* is minimally affected by predation. Sponges such as *Chondrilla nucula* and *Ectoplaysia ferox* can overgrow and cause tissue loss in *D. stokesi,* especially if unchecked by spongivores. *Dichocoenia stokesi* had the highest density of boring bivalves (average 7.5 bivalves per colony) of the three coral species examined.

The public comments provided supplemental information on *D. stokesi*'s susceptibility to predation. Predation by *Coralliophila* snails was recorded on 1.8 percent of the 502 *D. stokesi* colonies assessed for condition in 2012 surveys in the Florida Keys (Miller *et al.,* 2013). We did not find any new or supplemental information on the susceptibility of *D. stokesi* to predation.

All sources of information confirm that predation does not appear to significantly affect *D. stokesi.* Thus, we conclude that *D. stokesi* has low susceptibility to predation.

The SRR and SIR provided the following information on the susceptibility of *D. stokesi* to collection and trade. Collection and trade are not considered a threat to *D. stokesi*. The

public comments did not provide new or supplemental information. Supplemental information we found on collection and trade includes the following. Collection and trade of *D. stokesi* appear to be low and primarily for scientific purposes. Gross exports between 2000 and 2012 averaged 35 corals per year (data available at *http://trade.cites.org*). Thus, we conclude that *D. stokesi* has low susceptibility to collection and trade.

The SRR and SIR did not provide species-specific information on the effects of sea level rise on *D. stokesi.* The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *D. stokesi*'s susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *D. stokesi* has some susceptibility to sea level rise, but the available information does not provide a more precise description of susceptibility.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanism or conservation efforts for *D. stokesi*. Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *Dichocoenia stokesi* occurs in nine Atlantic ecoregions that encompass 26 kingdom's and countries' EEZs. The 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Overseas Territories), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *D. stokesi,* described first as a percentage of the above countries and kingdoms that utilize them to any degree, and second as the percentages of those countries and kingdoms whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *D. stokesi* are reef-fish fishing regulations and area management for protection and conservation. However, half of the reef-fish fishing regulations are limited in scope and may not provide substantial protection for the species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *D. stokesi*.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the potential extinction risk for *D. stokesi* include documented population-level impacts from disease. Factors that reduce potential extinction risk are relatively high abundance and persistence across many habitat types, including nearshore and mesophotic reefs. Residency in a wide range of habitat types suggests the species has a wide tolerance to environmental conditions and, therefore, better capacity to deal with changing environmental regimes.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *D. stokesi,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Although it is geographically located in the heavily disturbed Caribbean, *D. stokesi* occurs in a wide range of habitats, including mesophotic reefs, back- and fore-reef environments, rocky reefs, lagoons, spur-and-groove formations, channels, and occasionally at the base of reefs. This distribution in a wide range of environments suggests the species will be better able to withstand changing environmental conditions and moderates vulnerability to extinction over the foreseeable future because the numerous types of reef environments in which the species occurs are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. It has been reported in water depths ranging from 2 to 72 m. Deeper areas of *D. stokesi*'s range will usually have lower temperatures than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. The species is highly susceptible to disease, and outbreaks have resulted in high colony mortality in some locations in its range. However, *D. stokesi*'s abundance has been estimated as at least tens of millions of colonies in both the Florida Keys and Dry Tortugas and is higher than the estimate from these two locations due to the occurrence of the species in many other areas throughout its range. Additionally, sexual recruitment, as evidenced by presence of juvenile colonies, is comparatively higher than many other Caribbean coral species, enhancing recovery potential from mortality events, thus moderating vulnerability to extinction. The combination of wide habitat occupancy, abundance, life history characteristics, and depth distribution, combined with spatial variability in ocean warming and acidification across the species' range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *D. stokesi* was proposed for listing as threatened because of: High vulnerability to disease (C); moderate vulnerability to ocean warming (E) and acidification (E); moderate overall distribution (based on narrow geographic distribution and wide depth distribution (E); restriction to the

Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *D. stokesi* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *D. stokesi*'s spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time because:

(1) *Dichocoenia stokesi*'s distribution in depths of two to 72 m in heterogeneous habitats, including mesophotic reefs, back- and fore-reef environments, rocky reefs, lagoons, spur-and-groove formations, channels, and occasionally at the base of reefs, throughout the Caribbean basin reduces exposure to any given threat event or adverse condition that does not occur uniformly throughout the species' range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Dichocoenia stokesi* is usually reported in the top ten most abundant coral species in the Caribbean, and its total absolute abundance is at least tens of millions of colonies based on estimates from two locations. Absolute abundance is higher than estimates from these locations since *it* occurs in many other locations throughout its range. This provides buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response;

(3) *Dichocoenia stokesi* occurs in most reef habitats, including mesophotic reefs, back- and fore-reef environments, rocky reefs, lagoons, spur-and-groove formations, channels, and occasionally at the base of reefs, indicating wide tolerance of environmental conditions and better capacity to deal with changing environmental regimes; and

(4) Presence of juvenile *D. stokesi* colonies indicates that recruitment is likely occurring, enhancing recovery potential from mortality events.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. This species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, *D. stokesi* is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *D. stokesi* is not warranted for listing at this time under any of the listing factors, and we withdraw our proposal to list the species as threatened.

Genus Orbicella (formerly Montastraea)

Introduction

The SRR and SIR provided the following information on the taxonomy and morphology of the genus *Montastraea*. The genus *Montastraea* contained four Caribbean species: *M. cavernosa, M. annularis, M. faveolata,* and *M. franksi*. Prior to the 1990s, *M. annularis, M. faveolata,* and *M. franksi* were considered one species, *M. annularis*. However, *M. annularis* was broken into the three sibling species based on behavioral, biochemical, and morphological criteria. These three species are often grouped into the *M. annularis* species complex. Subsequent reproductive and genetic studies have generally supported the partitioning of the complex into three species. *Montastraea faveolata* is the most genetically distinct while *M. annularis* and *M. franksi* are less so.

The public comments provided the following new information on *Montastraea*'s taxonomy. In 2012, the genus *Montastraea* was split, and *M. annularis, M. faveolata,* and *M. franksi* were assigned to the genus *Orbicella* (Budd *et al.,* 2012). From this point forward, we will refer to the genus and species by their current taxonomic classification in the genus *Orbicella.* We did not find any new or supplemental information on *Orbicella*'s taxonomy or morphology.

Some studies report on the species complex rather than individual species since visual distinction can be difficult from video or photographic surveys or in small colonies where morphology is more difficult to discern. This section will report information on the species complex and on *O. annularis* from studies pre-dating 1994 when the species was split into three nominal species.

Spatial Information

The SRR and SIR provide the following information on *Orbicella*'s distribution, habitat, and depth range. The species complex has been found at depths to 90 m. It is dominant on mesophotic reefs in Puerto Rico and the U.S. Virgin Islands at depths of 30 to 45 m, and it is found at depths up to 70 to 90 m in these locations.

The public comments did not provide new or supplemental information on *Orbicella*'s distribution, habitat, or depth range. Supplemental information we found on *Orbicella'*s depth range includes the following. All three species occupy a large depth range. Although there is depth overlap in species occurrence, there is larger variance and overlap in species abundances in shallow versus deep water (Pandolfi and Budd, 2008). *Orbicella faveolata* tends to have the shallowest depth distribution, and *O. franksi* tends to have the deepest (Pandolfi and Budd, 2008; Weil and Knowlton, 1994). At three study sites in Belize, *O. faveolata* was the most abundant member of the species complex between 2 and 5 m depth; *O. annularis* was the most abundant at depths of 10 to 15 m, and *O. franksi* was the most abundant at depths of 20 to 30 m (Pandolfi and Budd, 2008). *Orbicella annularis* species complex can be relatively abundant at mesophotic depths in the Bahamas, Belize, Jamaica, Puerto Rico, U.S. Virgin Islands, and Curacao (Kahng *et al.,* 2010).

Demographic Information

The SRR and SIR provided the following information on abundance and population trends of the *Orbicella annularis* species complex. The species complex has historically been a dominant component on Caribbean coral reefs, characterizing the so-called ''buttress zone'' and ''annularis zone'' in the classical descriptions of Caribbean reefs. The species complex is the major reef-builder in the greater Caribbean,

since the die-off of *Acropora* spp., due to their large size and high abundance.

Numerous examples of population decline of the *Orbicella annularis* species complex were described, and the results are summarized as follows. Decline in the Florida Keys between the late 1970s and 2003 was approximately 80 to 95 percent, with further losses during the 2012 cold weather event. Decadal-scale declines across the remote islands of Navassa, Mona, and Desecheo in the central Caribbean impacted 85 percent of colonies found there. In the U.S. Caribbean (U.S. Virgin Islands and Puerto Rico), an 80 to 90 percent decline has been reported over the past two decades. Percent cover was reportedly stable in Curacao in the mid-1970s, an 85 percent increase in partial mortality occurred between 1998 and 2005. Between 1975 and 1998 at Glovers Reef in Belize, a 38 to 75 percent decline in relative cover occurred with a further 40 percent decline since. Colonies in Colombia were stable between 1998 and 2003 although demographic changes imply some degree of decline. Surveys of population structure across five countries found a significant increase in small ramets (tissue isolates that are genetically identical but physiologically separate from the parent colony) less than 500 cm^2 (211 percent for *O. annularis,* 168 percent for *O. faveolata,* 137 percent for *O. franksi*), while the proportion of large (1,500- 30,000 cm^2), completely live colonies declined by 51 to 57 percent.

The public comments did not provide new or supplemental information on *Orbicella*'s abundance and population trends. Supplemental information we found on *Orbicella*'s abundance and population trends is provided as follows. In a survey of 185 sites in five countries (Bahamas, Bonaire, Cayman Islands, Puerto Rico, and St. Kitts and Nevis) between 2010 and 2011, *Orbicella annularis* species complex exhibited mean tissue mortality of 29 to 66 percent, which was higher than other species exhibiting mean 8 to 17 percent tissue mortality. Total mortality of *O. annularis* species complex were observed (five to seven percent of the total); however mortality of large colonies mostly resulted in multiple smaller ramets Mortality was attributed primarily to outbreaks of white plague and yellow band disease, which emerged as corals began recovering from mass bleaching events. This was followed by increased predation and removal of live tissue by damselfish to cultivate algal lawns (Bruckner, 2012a).

In 1998 *O. annularis* species complex covered more of the benthos than any other coral taxon at nine monitored sites off Mona and Desecheo Islands, Puerto Rico: 47 percent on reefs off Desecheo Island and 32 percent off Mona Island. In 2008 live cover of *O. annularis* species complex ranged from 0 to 14 percent with 95 percent decline off Desecheo Island and 78 percent decline off Mona Island. This was accompanied with large changes in the size frequency distribution and extent of partial mortality, with size structure remaining constant. The amount of living tissue declined by 55 percent due to partial mortality affecting medium and large colonies, with an increase in the number of colonies with small (less than 10 cm diameter) tissue remnants. Sponges and macroalgae colonized newly exposed area, and sponges appeared to be preventing re-sheeting of tissue remnants. No *Orbicella* spp. recruits were observed during the ten year study (Bruckner and Hill, 2009).

Surveys at three reefs in western Curacao in 1998 found 46 percent of all corals were *O. annularis* species complex. In 2005, *O. annularis* species complex remained the dominant coral species but declined in abundance to 38 percent of the overall coral population (decreases in abundance occurred in *O. faveolata* and *O. annularis,* but not *O. franksi*). In 1998 mean diameter of *O. annularis* species complex colonies were 62 cm and less than 10 percent of all *O. annularis* species complex colonies were less than 30 cm in diameter. Partial mortality of *O. annularis* species complex increased 85 percent between 1997 and 2005 with losses of *O. annularis* and *O. faveolata* (partial mortality 42 to 48 percent and total mortality 6 percent for the two species combined) larger than *O. franksi.* The most significant losses were due to yellow band disease and white plague. No recruits of *O. annularis* species complex were observed between 1997 and 2005 in transects or on skeletons of tagged colonies exposed through mortality from disease (Bruckner and Bruckner, 2006a).

McClanahan and Muthiga (1998) surveyed 20 patch reefs in Glovers Reef atoll off Belize between 1996 and 1997 and compared their results to surveys of 16 patch reefs in the same general area conducted between 1970 and 1971. They found that *O. annularis* species complex experienced an overall 62 percent decrease in cover. Average cover of *O. annularis* species complex was seven percent in 1996 and 1997.

The *O. annularis* species complex often makes up the largest proportion of coral cover on Caribbean reefs. In surveys conducted on four reefs in Biscayne National Park, Florida in 1981, cover of *O. annularis* species complex ranged between approximately 25 and 50 percent on three of the reefs, and no *O. annularis* species complex colonies were observed in transects on the fourth reef (Burns, 1985). In stratified random surveys in 2007–2008, *O. annularis* species complex was the dominant coral by percent cover in the Red Hind Marine Conservation District off St. Thomas, U.S. Virgin Islands, at depths of 34 to 47 m. *Orbicella annularis* species complex averaged 15 percent cover (range zero to 48 percent) and made up 92 percent of the 25 percent average coral cover (Nemeth *et al.,* 2008).

In a survey of 185 sites in five countries (Bahamas, Bonaire, Cayman Islands, Puerto Rico, and St. Kitts and Nevis) in 2010 to 2011, density of *O. annularis* species complex ranged from 0.3 to 2.7 colonies per m^2 and comprised between 9 and 30 percent of all corals greater than 4 cm diameter. The mean diameter ranged from 44 to 89 cm, and the size structure (planar surface area) had a bell shaped distribution, with only a few colonies less than 500 cm^2 or greater than 10,000 cm^2 (Bruckner, 2012a).

In surveys of juvenile corals (less than 4 cm diameter) on nine reefs in the Florida Keys between 1993 and 1994, density of *O. annularis* species complex ranged between 0.02 and 0.04 juvenile corals per m^2 on six of the nine reefs. Density of *O. annularis* species complex juveniles was correlated with non-juvenile *O. annularis* species complex density and with depth. The majority of non-juveniles were smaller than the reproductive size of 100 cm^2 (Chiappone and Sullivan, 1996).

Surveys in Bonaire in 2008 showed that the *O. annularis* species complex dominated coral cover in depths less than 20 m and cover was similar to that reported in 1982. However, all sites surveyed in 2008 showed signs of disease and partial mortality in a large number of the massive colonies, and many were reduced to a patchwork of live tissue and dead areas colonized by algae (Stokes *et al.,* 2010).

At 25 sites surveyed in Bonaire in 2011, *O. annularis* species complex was the dominant coral taxa occupying approximately 20 to 25 percent of the benthos and making up 46 percent of the total live coral cover. It was dominant in terms of abundance, making up approximately 27 percent of all corals. *Orbicella annularis* was significantly more abundant than *O. franksi* and *O. faveolata* on the northern reefs but not on southern reefs. Most colonies were between 30 and 80 cm diameter with size structure of *O. annularis* species complex in a bell

shaped distribution around this range; there were few colonies less than 20 cm and few very large colonies greater than 200 cm, with a small peak at the 150 to 199 cm range. There was a notable absence of colonies less than 10 cm diameter (as measured by the skeleton, not live tissue) and an absence of recruits. A total of 73 out of 1602 colonies (4.5 percent) had completely died. Surviving colonies (n=1529) had a mean of 28 percent partial mortality. On average, each colony was divided into 6.6 tissue remnants. Several sites contained a high abundance of large, unblemished *O. annularis* species complex colonies (Bruckner, 2012c).

Between 1999 and 2009, overall cover of *O. annularis* species complex in the Florida Keys declined, but differed by habitat type (Ruzicka *et al.,* 2013). Percent cover declined on the deep and shallow fore-reefs but remained stable on patch reefs (Ruzicka *et al.,* 2013). The 2010 cold-water event reduced cover of *O. annularis* species complex from 4.4 percent to 0.6 percent on four patch reefs in the upper and middle Florida Keys. Greater than 50 percent of *O. annularis* species complex colonies across all size classes suffered lethal or severe mortality, and 93 percent of all *O. annularis* species complex colonies surveyed suffered complete or partial mortality. The species complex suffered the highest mortality of all coral species affected (Colella *et al.,* 2012). A comparison of 1995 and 2005 surveys of *O. annularis* species complex at 13 patch reefs in the Florida Keys reported ten sites had between 5 and 40 percent more dead areas (Gischler, 2007).

Density of juvenile *O. annularis* species complex increased from 0.07 juveniles per m^2 prior to 2008, to 0.15 juveniles per m^2 and continued at 0.12 juveniles per m^2 in 2009 at 4 km area on the south side of St. John, U.S. Virgin Islands that has been monitored for 16 years. These densities were driven by seven to nine colonies per year, and the increased density did not extend outside the initial survey area when expanded to other areas around St. John. While not possible to distinguish the species in the field, the authors conclude juveniles were most likely *O. annularis* due to the abundance of *O. annularis* on adjacent reefs and the rarity of the presence of the other two species in water less than 9 m (Edmunds *et al.,* 2011).

At Yawzi Point, St. John, U.S. Virgin Islands, the percentage of total coral cover declined by more than 50 percent between 1987 to 1998, from 45 percent to 20 percent. In 1988, 94 percent of the coral cover at Yawzi was *O. annularis* species complex mostly *O. annularis* (97 percent), with a few colonies of *O. faveolata (6 percent).* Despite a reduction in total cover, *O. annularis* species complex remained spatially dominant in 1998 at 96 percent of the coral cover (Edmunds, 2002). Coral cover at this site again declined an additional 65 percent between 1999 and 2011 to seven percent cover, with *O. annularis* species complex remaining dominant at 77 percent of the coral cover (Edmunds, 2013).

At Tektite Reef, St. John, U.S. Virgin Islands, total coral cover increased from 32 percent in 1987 to 43 percent in 1998 but then decreased to 29 percent in 2011 (Edmunds, 2002; Edmunds, 2013). In 1988, 79 percent of the species complex was *O. annularis,* with lesser amounts of *O. faveolata* (one percent) and *O. franksi* (21 percent) (Edmunds, 2002). Greater than 72 percent of coral was *O. annularis* species complex in all survey years (Edmunds, 2013).

Surveys of the Flower Garden Banks between 1974 and 1980 found cover of *O. annularis* species complex between approximately 23 and 40 percent in areas less than 36 m depth (Bright *et al.,* 1984). *Orbicella annularis* species complex was the dominant coral between 2002 and 2003 at 32 percent cover (Aronson *et al.,* 2005). In random surveys between 2002 and 2006, *O. annularis* species complex (predominantly *O. franksi*) was the dominant coral in the Flower Garden Banks comprising between 27 and 40 percent benthic cover (Hickerson *et al.,* 2008). In permanent photo quadrats (8 m^2 total), cover of *O. annularis* species complex (as measured by planar surface area of individual colonies) fluctuated between approximately 20 and 45 percent cover in the East Flower Gardens between 1992 and 2006 with periods of sharp increase and decrease in cover (Hickerson *et al.,* 2008). Cover in west Flower Gardens was between 22 and 40 percent over the same time period and had less annual variability and a generally increasing or stable trend through time (Hickerson *et al.,* 2008).

Surveys of five sites in the Mexican Yucatan in 1985 and 2005 revealed a decrease in relative cover of *O. annularis* species complex. At four out of the five sites, cover of *O. annularis* species complex decreased from between approximately 50 and 60 percent in 1985 to between approximately 10 and 25 percent in 2005. The fifth site had a less dramatic decrease in relative cover from approximately 35 percent to 30 percent cover during this 20-year interval. Disease appeared to be the main cause of decline, but hurricanes may have also played a role (Harvell *et al.,* 2007).

Size transition matrices were derived from *Orbicella* growth, mortality, and recruitment rates between 1998 and 2003 from four sites in the lower Florida Keys. Forecasting 15 years into the future predicted a steady decline in all size classes except the smallest (less than 5 cm) due to insufficient recruitment to offset mortality and low growth rates of the smaller size classes. Mortality rates were assumed at approximately 40 percent for the smallest size class declining to about 5 percent for the largest (Smith and Aronson, 2006).

All information on *Orbicella*'s abundance and population trends can be summarized as follows. The *O. annularis* species complex historically dominated fore-reef sites throughout the Caribbean both in abundance and cover and formed dense assemblages of large, hundreds-of-years old colonies and few small colonies (Bruckner, 2012a). However, recent declines in *O. annularis* species complex cover have been reported. Major declines range from approximately 50 to 95 percent in locations including Puerto Rico, Belize, the Florida Keys, Mexico, and the U.S. Virgin Islands, and lower levels of decline (5 to 33 percent) have been reported at individual sites within some of these same locations. There have also been reports of more stable percent cover trends (*e.g.,* Bonaire) and periods of increase (*e.g.,* Flower Garden Banks). Observed declines in total coral cover in the Caribbean, since the major decline of *Acropora* spp. in the 1980s, have often been a result of the decline of the *O. annularis* species complex since the taxa can make up a large proportion of the total coral cover. Despite decreases, the *O. annularis* species complex continues to be reported as the dominant coral taxa, albeit at times its relative dominance has decreased to a lower percentage of the total coral cover (*e.g.,* Curacao, U.S. Virgin Islands).

Other Biological Information

The SRR and SIR provided the following information on *Orbicella* life history. *Orbicella* spp. have growth rates of approximately 1 cm per year, ranging from 0.06 to 1.2 cm per year. They grow more slowly in deeper water and in less clear water. Large colonies have lower total mortality rates than juvenile and small colonies.

All three species of the *O. annularis* complex are hermaphroditic broadcast spawners, with spawning concentrated on six to eight nights following the full moon in late August, September, or early October. *Orbicella faveolata* is

largely reproductively incompatible with *O. franksi* and *O. annularis,* and it spawns about one to two hours earlier. Fertilization success measured in the field was generally below 15 percent for all three species being closely linked to the number of colonies concurrently spawning. In Puerto Rico, minimum size at reproduction for the *O. annularis* species complex was 83 cm^2.

Successful recruitment by the *O. annularis* species complex species has seemingly always been rare. Only a single recruit of *Orbicella* was observed over 18 years of intensive observation of 12 m^2 of reef in Discovery Bay, Jamaica. Many other studies throughout the Caribbean also report negligible to absent recruitment of the species complex.

The public comments did not provide new or supplemental information on the life history of *Orbicella.* Supplemental information we found on the life history of *Orbicella* includes the following. *Orbicella franksi* spawns an average of 110 minutes before *O. annularis,* and 120 minutes before *O. faveolata* (Fogarty *et al.,* 2012a). Gametes can disperse over 500 m in 100 minutes, and *O. franksi* sperm viability decreases after two hours (Levitan *et al.,* 2004). *Orbicella franksi* and *O. annularis* gametes are compatible, though other mechanisms associated with the temporal isolation of spawning, including gamete aging, dilution, and dispersal, make hybridization less likely (Knowlton *et al.,* 1997; Levitan *et al.,* 2004). All three species are largely self-incompatible (Knowlton *et al.,* 1997; Szmant *et al.,* 1997). Size at sexual maturity is generally about 200 cm^2 (Szmant-Froelich, 1985). Colonies that were fragmented experimentally to sizes smaller than 100 cm^2 were generally found to have lower fecundity indicating that frequent fragmentation and partial mortality can affect reproductive capacity (Szmant-Froelich 1985).

Smith and Aronson (2006) reported 18 *Orbicella* recruits between 1998 and 2003 in 384 permanent monitoring quadrats (237 m^2) in the lower Florida Keys. The ability of the species complex to dominate with such low recruitment rates has been described as a storage effect whereby large, old colonies are able to persist and maintain the population until favorable conditions for recruitment occur (Edmunds and Elahi, 2007). However, potential problems may exist for species employing storage effects if favorable conditions for recruitment occur so infrequently that they fall outside the life span of the cohort (Foster *et al.,* 2013).

All sources of information are used to summarize *Orbicella*'s life history as follows. *Orbicella* species have slow growth rates, late reproductive maturity, and low recruitment rates. Colonies can grow very large and live for centuries. Large colonies have lower total mortality than small colonies, and partial mortality of large colonies can result in the production of ramets. The historical absence of small colonies and few observed recruits, even though large numbers of gametes are produced on an annual basis, suggests that recruitment events are rare and were less important for the survival of the *O. annularis* species complex in the past (Bruckner, 2012a). Large colonies in the species complex maintain the population until conditions favorable for recruitment occur; however, poor conditions can influence recruitment periodicity. While the life history strategy of the *O. annularis* species complex has allowed the taxa to remain abundant, we conclude that the buffering capacity of this life history strategy has been reduced by recent population declines and partial mortality, particularly in large colonies.

The SRR, SIR, and public comments did not provide other biological information on the *Orbicella annularis* species complex. Supplemental biological information we found on *Orbicella* is provided as follows. The *Orbicella annularis* species complex is sensitive to cold water. In laboratory experiments, *O. annularis* species complex released zooxanthellae when shocked with cold water between 12 and 18 degrees C, and the response decreased with increasing temperature (Muscatine *et al.,* 1991).

Susceptibility to Threats

The SRR and SIR provided the following information on *Orbicella*'s susceptibility to ocean warming. The *Orbicella annularis* species complex is moderately to highly susceptible to bleaching. The composition of zooxanthellae in at least some areas changes in response to bleaching. Bleaching has been shown to prevent reproduction in the following season after recovering normal pigmentation. Particularly well documented mortality following severe mass bleaching in 2005 highlights the immense impact thermal stress events and their aftermath can have on the *Orbicella annularis* species complex. A significant correlation was found between bleaching in 2005 and the prevalence of yellow band disease and white plague affecting the *Orbicella* species complex. Additionally, in laboratory experiments, mortality due to yellow band disease increased with increasing temperatures.

The public comments did not provide new or supplemental information on the susceptibility of *Orbicella* to ocean warming. Supplemental information we found on *Orbicella*'s susceptibility to ocean warming confirms and expands the information in the SRR and SIR. The *O. annularis* species complex often has one of the highest bleaching levels among reported species. Extended recovery times have been reported, and disease outbreaks have often followed bleaching events. On Carysfort Reef in the Florida Keys, greater than 90 percent of *O. annularis* species complex colonies were bleached in March 1988 after the 1987 Caribbean bleaching event; however, no colony mortality was observed between 1986 and 1988 (Fitt *et al.,* 1993). Colonies of the *O. annularis* species complex in the Florida Keys that remained bleached seven months following the 1987 bleaching event experienced reproductive failure during the reproductive season following the bleaching event. Colonies that recovered after bleaching events were able to follow a normal reproductive cycle, but bleached colonies of *O. annularis* species complex were unable to complete gametogenesis (Szmant and Gassman, 1990). Compared to recovered colonies, bleached colonies had lower tissue biomass, lower carbon-to-nitrogen ratios, and reduced growth, indicating the energy reserves needed for successful reproduction were not available (Szmant and Gassman, 1990).

During the 1987 bleaching event, 90 percent of all *O. annularis* species complex colonies surveyed at 30 m in the Cayman Islands were bleached. Bleaching was less severe at 46 m with 14 percent of *O. annularis* species complex colonies bleached. Five months after bleaching was first observed in the Cayman Islands, 54 percent of bleached *O. annularis* species complex colonies had not recovered. *Orbicella annularis* species complex had the slowest recovery of the 28 coral species observed to bleach (Ghiold and Smith, 1990).

In a 1995 bleaching event in Belize, *O. annularis* species complex was the most affected coral taxon with 76 percent of the 2,126 surveyed colonies affected. Seven percent of the 904 colonies surveyed six months after the bleaching event remained bleached. Twenty-six percent of tagged *O. annularis* species complex colonies (n=19) exhibited partial mortality due to bleaching or post-bleaching infection by black band disease (McField, 1999).

In 20 surveys across 302 sites throughout the wider Caribbean, *O.*

annularis species complex and *Agaricia tenuifolia* were the taxa most impacted by the 1998 bleaching event (Ginsburg and Lang, 2003; Kramer, 2003). Subsequent disease outbreaks were also recorded in *O. annularis* and *O. faveolata* off Curaçao, the Cayman Islands, Costa Rica, and some of the Virgin Islands after the bleaching event. Bleaching and disease related mortality heavily impacted the *O. annularis* species complex (Ginsburg and Lang, 2003).

During the 2005 bleaching event, approximately 70 percent of *O. annularis* species complex colonies bleached both in sites less than 10 m in depth and in sites greater than 15 m in depth on the west and southwest coasts of Barbados (Oxenford *et al.,* 2008). Bleaching was observed in 2005 at 86 of 94 sites (91 percent) surveyed in Buck Island Reef, U.S. Virgin Islands. Ninety-four percent of the cover of *O. annularis* species complex bleached (Clark *et al.,* 2009).

The 2005 bleaching event resulted in a 51 percent decrease in the cover of *O. annularis* species complex at five sites in the U.S. Virgin Islands between 2005 and 2007. Bleaching occurred in 16 of the 21 species of coral at the five sites with maximum tissue area bleached between 98 to 99.5 percent for the *O. annularis* species complex. Mortality after the bleaching event occurred primarily from a subsequent regional outbreak of coral disease, predominantly white plague, not the bleaching itself. The highest rate of mortality of the 19 species affected by the white plague was the *Orbicella annularis* species complex with 94.5 percent of disease lesions occurring on *Orbicella annularis* species complex. Total coral cover declined from 21 percent to 10 percent, and species-specific changes in coral cover affected the relative abundance of coral species on the reef. Overall relative abundance of *O. annularis* species complex declined from an initial average of 79 to 59 percent of live coral cover (Miller *et al.,* 2009).

Stratified random surveys on back-reefs and fore-reefs between one and 30 m depth off Puerto Rico (Mona and Desecho Islands, La Parguera, Mayaguez, Boqueron, and Rincon) in 2005 and 2006 revealed bleaching was most severe in *O. annularis* species complex with 94 percent of colonies bleached. After bleaching, a disease outbreak occurred, and *O. annularis* species complex suffered extensive partial and total mortality. Coral cover declined between 40 and 60 percent and was primarily driven by mortality of *O. annularis* species complex. Additionally, the severe tissue loss and prolonged bleaching stress resulted in reproductive collapse of *O. annularis* species complex during the 2006 mass spawning cycle (Waddell and Clarke, 2008).

The 2005 bleaching affected greater than 95 percent of *O. annularis* species complex in Mona and Desecheo Islands, Puerto Rico and was followed by a disease outbreak that both caused extensive mortality (Bruckner and Hill, 2009). A study of 36 sites across six countries (Grenada, Curaçao, Panamá, Puerto Rico, Cayman Islands, and Bermuda) and three depth habitats (less than 4 m, 5 to 12 m, and greater than 15 m) found a significant correlation between the 2005 bleaching and prevalence of yellow band disease and white plague in *O. annularis* species complex (Croquer and Weil, 2009). *Orbicella annularis* species complex bleached at all depths surveyed in Grenada (23 to 52 percent of colonies), Puerto Rico (21 to 40 percent), and Cayman Islands (16 to 44 percent). The species complex did not experience bleaching in Curacao or Bermuda, both locations reported very low bleaching across all genera examined (Croquer and Weil, 2009). Bleaching of *O. annularis* species complex varied by depth in Panama with bleaching occurring in 11 percent of colonies in depths less than 4 m and in15 percent of colonies in depths between 5 and 12 m, but no bleaching occurred in deep depths greater than 15 m (Croquer and Weil, 2009). Smith *et al.* (2013b) described species responses to the 2005 and 2010 bleaching events in St. Thomas, St. Croix, and St. John, U.S. Virgin Islands. The response of the *O. annularis* species complex (mostly *O. faveolata* and *O. franksi* with the likelihood of small numbers of *O. annularis*) to the 2005 bleaching event was high to moderate initial response of bleaching prevalence, high disease prevalence, high mortality, a large decline in coral cover, and increasing or stable colony abundance. Average bleaching was 66 percent, and paling was 27 percent in 2005. Disease prevalence in *O. annularis* complex was 17 percent after the 2005 bleaching event. In the milder 2010 bleaching event, 35 percent of *O. annularis* species complex colonies bleached, and 47 percent of *O. annularis* species complex colonies paled. Less than one percent of *O. annularis* species complex colonies suffered total mortality, but percent cover decreased from seven percent cover of *O. annularis* species complex in 2005 before bleaching to less than three percent in 2007. By 2010, there was a slight increase in percent cover to about four percent. *Orbicella annularis* species complex lost a large proportion of colonies in the largest size class and showed a significant increase in colony abundance, likely due to the increase in abundance of colonies in smaller size classes resulting from partial mortality of larger colonies.

Van Woesik *et al.* (2012) developed a coral resiliency index based on biological traits and processes to evaluate extinction risk due to bleaching. Evaluations were performed at the genus level, but genera were separated between the Caribbean and Indo-Pacific. They rated the resilience score for the *O. annularis* species complex as four out of a range of -6 to 7 observed in other coral genera. Less than or equal to -3 was considered highly vulnerable to extinction, and greater than or equal to 4 was considered highly tolerant. Thus, *O. annularis* species complex was rated as highly tolerant. However, Smith *et al.* (2013b) concluded that large faviids, such as the *O. annularis* species complex, seem very susceptible to long-term population declines because of their poor response to stress response when bleaching, disease, and mortality were considered. The *O. annularis* species complex was found to be likely less equipped to recovery after bleaching because they tend to grow slowly, have lower fecundity, and are more susceptible to mortality when small (Smith *et al.,* 2013b). While the van Woesik *et al.* (2012) study was in the SIR, the findings specific to *Orbicella* were not included. The public comments indicated the results of this study should be considered in the listing status of the three species in the *Orbicella* species complex.

All sources of information are used to describe *Orbicella*'s susceptibility to ocean warming as follows. The *O. annularis* species complex is highly susceptible to ocean warming. Bleaching often occurs in 76 to 94 percent of *O. annularis* species complex colonies during bleaching events, and *Orbicella* spp. are one of the taxa most affected by high temperatures. Colonies in deeper water have been reported to bleach less severely. Recovery from bleaching can take longer for the species complex than for other coral species, and prolonged stress from bleaching has been cited as a possible reason for reproductive failure following bleaching events. Mortality from temperature anomalies is often due to subsequent disease outbreaks. Thus, we conclude that the *O. annularis* species complex is highly susceptible to ocean warming.

The SRR and SIR provided the following information on *Orbicella*'s

susceptibility to acidification. The only study conducted regarding the impact of acidification on this genus is a field study that did not find any change in *O. faveolata* calcification in field-sampled colonies from the Florida Keys up through 1996. Preliminary experiments testing effects of acidification on fertilization and settlement success of *O. annularis* species complex show results that are consistent with the significant impairments demonstrated for *A. palmata*.

The public comments did not provide new or supplemental information on the susceptibility of the *Orbicella* species complex to acidification. Supplemental information we found on the susceptibility of the *Orbicella* species complex to acidification includes the following. In laboratory experiments, reproduction of *O. faveolata* was negatively impacted by increasing carbon dioxide, and impairment of fertilization was exacerbated at lower sperm concentrations (Albright, 2011b). Fertilization success was reduced by 25 percent at 529 µatm (43 percent fertilization) and 40 percent at 712 µatm (34 percent fertilization) compared to controls at 435 µatm (57 percent fertilization; Albright, 2011a). Additionally, growth rate of *O. faveolata* was reduced under lower pH conditions (7.6) compared to higher pH conditions (8.1) after 120 days of exposure (Hall *et al.,* 2012).

All sources of information are used to describe *Orbicella*'s susceptibility to acidification as follows. Laboratory studies indicate that *Orbicella* is susceptible to ocean acidification both through reduced fertilization of gametes and reduced growth of colonies. Thus, we conclude that the *Orbicella* species complex is highly susceptible to ocean acidification.

The SRR and SIR provided the following information on *Orbicella*'s susceptibility to disease. White plague and yellow band (also called yellow blotch) disease have caused profound population decline of the *Orbicella annularis* species complex both with and without prior bleaching.

The public comments did not provide new or supplemental information on the susceptibility of *Orbicella* spp. to disease. Supplemental information we found on *Orbicella*'s susceptibility to disease confirms and expands the information in the SRR and SIR. *Orbicella* spp. are susceptible to black band disease and dark spot syndrome (Alcolado *et al.,* 2010). Additionally, an unknown disease was observed in the Red Hind Marine Conservation District in the U.S. Virgin Islands and affected 39 percent of *O. annularis* species complex colonies (Smith *et al.,* 2010). White plague is one of the most aggressive coral diseases in the Caribbean with progression rates of 1 to 10 cm per day (Bruckner and Hill, 2009). Tissue loss from yellow band disease is slow, averaging 0.5 to 1 cm per month, though tissue loss can be significant over the long term since colonies can remain infected for years and can have multiple lesions per colony (Bruckner and Bruckner, 2006b).

In the Florida Keys, the prevalence of white plague increased between 1996 and 2002. No *O. annularis* species complex colonies with white plague were reported within monitoring stations in 1996, but infected colonies appeared in 32 stations in 2002 (Waddell, 2005). *Orbicella annularis* species complex had the highest prevalence (up to 12 percent) of the 21 species affected by white plague in Puerto Rico between 1998 and 2008 (Bruckner and Hill, 2009). In Mexico, *O. annularis* species complex had the highest disease prevalence in surveys during 2004 (27 percent, Ward *et al.,* 2006). Surveys in four locations (Netherlands Antilles, Grenada, Turks and Caicos, and U.S. Virgin Islands) between 1997 and 1998 revealed that prevalence of yellow band in *O. annularis* species complex ranged from 18 to 91 percent.

Tagged colonies with yellow band disease in Puerto Rico lost an average of 32 percent of their tissue over four years, and the percent of partial mortality appeared to increase with colony size (Bruckner and Bruckner, 2006b). Eight percent of infected colonies died completely (most were 50 cm or less in size), and larger colonies lost between 60 and 85 percent of their tissue (Bruckner and Bruckner, 2006b). Eighty-five percent of colonies with yellow band disease tagged in 1999 still had active signs of the disease in 2003 (Bruckner and Bruckner, 2006b). In 1999, yellow band disease affected up to 50 percent of all *O. annularis* species complex colonies at permanent sites in Puerto Rico, including many of the largest (2 to 3 m diameter and height) and presumably oldest colonies (Waddell and Clarke, 2008).

In Curacao, yellow band disease affected from three to 49 percent of all *O. annularis* species complex colonies within transects conducted on western reefs between 1997 and 2005. The highest prevalence of yellow band disease occurred in 1997 and 1998. Thirty-one to 49 percent of *O. annularis* species complex colonies were affected in eastern Curacao, and 24 percent were affected in western Curacao. The numbers of new infections declined from 2000 to 2005. Yellow band disease affected larger corals more frequently than small corals. Over 21 percent of the colonies tagged with yellow band disease between 1997 and 1999 were still infected in 2005. Of the remainder, 44 percent died, 2 percent were affected by other diseases, and 32 percent no longer had signs of yellow band disease but had large amounts (most greater than 90 percent) of partial mortality (Bruckner and Bruckner, 2006a).

Disease prevalence in *O. annularis* species complex (*O. annularis* and *O. faveolata*) at three reefs off Mexico increased from between zero and four percent in 1996 and 1998 to between 26 and 37 percent in 2001. The increase was due to the proliferation of yellow band disease, though black band disease and white plague were also present. Partial mortality also increased over this same period from 20 to 35 percent of *O. annularis* species complex colonies at one site and from 35 to 52 percent at another (Jordan-Dahlgren *et al.,* 2005).

At 253 sites surveyed in 2009 in St. Croix and St. John, U.S. Virgin Islands and La Parguera, Puerto Rico, the average number of healthy *O. annularis* species complex colonies was 182 (± 33 SE) per 100 m^2. Yellow band was present on an average of about one percent of colonies (Muller and van Woesik, 2012).

All sources of information are used to describe *Orbicella*'s susceptibility to disease as follows. Disease can affect a large proportion of the *Orbicella* spp. population (3 to 91 percent), particularly during outbreaks following bleaching events, and can cause extensive mortality. Partial mortality can be high (32 to greater than 90 percent) and can result in multiple ramets. White plague and yellow band disease have had the greatest effect and can disproportionately affect larger colonies in the species complex. Total colony mortality is less likely for larger colonies than for smaller colonies, and partial mortality can lead to changes in colony size distribution as observed in Puerto Rico, U.S. Virgin Islands, and a study in Bahamas, Bonaire, Cayman Islands, and St. Kitts and Nevis. Thus, we conclude that the *O. annularis* species complex is highly susceptible to disease.

The SIR and SRR did not provide any information on the trophic effects of fishing on *Orbicella*. The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the trophic effects of fishing on *Orbicella*. However, as described above in Caribbean Genera and Species—Introduction, due to the

level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. This effect coupled with *Orbicella*'s low recruitment rate indicates it likely has some susceptibility to the trophic effects of fishing. The available information does not support a more precise description of its susceptibility.

The SRR and SIR provided the following information on the susceptibility of *Orbicella* to sedimentation. *Orbicella* has shown a decline in growth at sediment impacted sites in Puerto Rico and during periods of construction in Aruba. Along a gradient of continental influence in the southern Gulf of Mexico, density and calcification rate of *O. annularis* decreased with increasing turbidity and sedimentation while extension rate increased with increasing turbidity and sedimentation.

The public comments did not provide new or supplemental information on the susceptibility of *Orbicella* to sedimentation. Supplemental information we found on the susceptibility of the *Orbicella annularis* species complex confirms the information in the SRR and SIR. The *Orbicella annularis* species complex appears to be moderately capable of removing sediment from the colony surface. Colonies receiving single applications of 200 or 400 mg sediment per cm^2 showed no evidence of damage while 800 mg per cm^2 caused mortality (Rogers, 1983). Sedimentation has been found to negatively affect *O. annularis* species complex primary production, growth rates, and abundance (Pastorok and Bilyard, 1985). An observed difference in average colony size at two sites in Puerto Rico led Loya (1976) to conclude turbidity negatively affects growth of *O. annularis* species complex since colony size was half as large at the sediment-impacted site (23 cm versus 9 cm).

All sources of information are used to describe *Orbicella*'s susceptibility to sedimentation as follows. Although the species complex is moderately capable of removing sediment from the colony surface, sedimentation negatively affects primary production, growth rates, calcification, colony size, and abundance. Thus, we conclude that the *O. annularis* species complex is highly susceptible to sedimentation.

The SRR and SIR provided the following information on the susceptibility of *Orbicella* to nutrient enrichment. *Orbicella* had an increasing growth rate with improving environmental conditions in Barbados. Additionally, decreasing growth rate of *Orbicella* over a 30-year period was attributed to deterioration of water quality.

The public comments did not provide new or supplemental information on the susceptibility of *Orbicella* to nutrient enrichment. Supplemental information we found on the susceptibility of the *Orbicella* species complex confirms and expands the information in the SRR and SIR. Two growth forms of *O. annularis* species complex, columnar (likely *O. faveolata*) and lobate (likely *O. annularis*) were found to have increasing average growth rates with improving environmental conditions away from a eutrophication gradient in Barbados (Tomascik, 1990). Although nutrient concentration was negatively correlated with growth, suspended particulate matter resulting from eutrophication, rather than the nutrients themselves, was postulated to be the cause of observed decreased growth rates (Tomascik and Sander, 1985). A general pattern of decreasing growth rates of the columnar growth form between 1950 and 1983 may be directly related to the deterioration of water quality along the west coast of the island (Tomascik, 1990). Additionally, *Orbicella* spp. did not recruit to settlement plates on the most eutrophic reef, and recruitment of *Orbicella* spp. increased at sites with decreasing eutrophication along the eutrophication gradient (Tomascik, 1991). Field experiments indicate that nutrient enrichment significantly increases yellow band disease severity in *O. annularis* and *O. franksi* through increased tissue loss (Bruno *et al.,* 2003).

All sources of information are used to describe *Orbicella*'s susceptibility to nutrient enrichment as follows. The *Orbicella annularis* species complex is susceptible to nutrient enrichment through reduced growth rates, lowered recruitment, and increased disease severity. Thus, we conclude that the *O. annularis* species complex is highly susceptible to nutrient enrichment.

The SRR and SIR provided the following information on the susceptibility of *Orbicella* to predation. Predators of the *O. annularis* species complex include the corallivorous snail *Coralliophila abbreviata* and some species of parrotfish including *Sparisoma viride* and *S. aurofrenatum*. Additionally, damselfish remove live coral tissue to build algal gardens. The large decline of *Acropora* spp. in the Caribbean, likely resulted in greater impacts by damselfishes on other high-dimension corals, including the *O. annularis* species complex.

Public comments did not provide new or supplemental information on the susceptibility of *Orbicella* to predation. Supplemental information we found on the susceptibility of the *Orbicella* species complex includes the following. Surveys of six sites in Navassa found between zero and 33 percent of *O. annularis* species complex colonies (average 17 percent across all sites) were affected by *C. abbreviata* (Miller *et al.,* 2005). The *O. annularis* species complex was the preferred target of parrotfish across all reef habitats in a study on the Belize barrier reef. Incidence of parrotfish grazing was highest on *O. annularis* (over 55 percent of colonies), followed by *O. franksi* and *O. faveolata,* respectively (Rotjan, 2007). In most habitats, a few colonies of *Orbicella* spp. were more heavily grazed by parrotfishes, while the majority showed little or no parrotfish grazing (Rotjan and Lewis, 2006).

All sources of information are used to describe *Orbicella*'s susceptibility to predation as follows. The *O. annularis* species complex is susceptible to several predators. Current effects of predation appear to be low. Thus, we conclude the *O. annularis* species complex has low susceptibility to predation.

The SRR and SIR did not provide information on the effects of sea level rise on *Orbicella*. The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *Orbicella*'s susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *Orbicella* has some susceptibility to sea level rise, but the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR provided the following information on the susceptibility of the *Orbicella* species complex to collection and trade. The *Orbicella* complex species have a very low occurrence in the CITES trade databases. Hence, collection and trade is not considered a significant threat to the *Orbicella annularis* complex species. The public comments did not provide new or supplemental information on the susceptibility of the *Orbicella* species complex to trade. Supplemental information we found on the susceptibility of species in the *Orbicella* complex to collection and trade is described in each of the individual species sections.

Genus Conclusion

The *O. annularis* species complex is distributed throughout the Caribbean and occupies a variety of habitats across a large depth range, including mesophotic depths to 90 m. Over the last twenty years, major declines of approximately 50 to 95 percent have occurred. In addition, changes in size frequency distribution have sometimes accompanied decreases in cover, resulting in fewer large colonies that impact the buffering capacity of the species complex's life history strategy. Despite decline, the *O. annularis* species complex continues to be reported as the dominant coral taxon, sometimes at a lower percentage of the total coral cover.

The species complex has highly susceptibility to ocean warming, acidification, disease, sedimentation, and nutrients; some susceptibility to trophic effects of fishing and sea level rise; and low susceptibility to predation. Susceptibility to collection and trade is described in each of the individual species sections.

Orbicella faveolata

Introduction

The SRR and SIR provided the following information on *O. faveolata*'s morphology. *Orbicella faveolata* grows in heads or sheets, the surface of which may be smooth or have keels or bumps. The skeleton is much less dense than in the other two *Orbicella* species. Colony diameter can reach up to 10 m with a height of 4 to 5 m. The public comments did not provide new or supplemental information on *O. faveolata*'s morphology, and we did not find any new or supplemental information.

Spatial Information

The SRR and SIR provided the following information on the distribution, habitat and depth range of *O. faveolata. Orbicella faveolata* occurs in the western Atlantic and throughout the Caribbean, including Bahamas, Flower Garden Banks, and the entire Caribbean coastline. There is conflicting information on whether or not it occurs in Bermuda. *Orbicella faveolata* has been reported in most reef habitats and is often the most abundant coral between 10 and 20 m in fore-reef environments. The depth range of *O. faveolata* has been reported as 0.5 to 40 m, though the species complex has been reported to depths of 90 m, indicating *O. faveolata's* depth distribution is likely deeper than 40 m. *Orbicella* species are a common, often dominant component of Caribbean mesophotic reefs, suggesting the potential for deep refugia for *O. faveolata.*

The public comments did not provide new or supplemental information on *O. faveolata's* distribution, habitat, or depth range. Supplemental information we found includes the following. Veron (2014) confirmed the occurrence of *O. faveolata* in five out of his 11 ecoregions in the west Atlantic and greater Caribbean known to contain corals and strongly predicted its presence in an additional three ecoregions (off Colombia and Venezuela; Jamaica and Cayman Islands; and Florida and the Bahamas). Many studies have confirmed the presence of *O. faveolata* in these additional three ecoregions (Bayraktarov *et al.,* 2012; Bruckner, 2012a; Burman *et al.,* 2012). The ecoregions where Veron (2014) reported the absence of *O. faveolata* are off the coasts of Brazil, Bermuda, and the southeastern U.S. north of southern Florida (Veron, 2014). Smith (2013) reported that *O. faveolata* is found in the U.S. Virgin Islands across all depths to about 45 m.

Demographic Information

The SRR and SIR provided the following information on *O. faveolata's* abundance and population trends. *Orbicella faveolata* is considered common.

The public comments did not provide new or supplemental information on *O. faveolata's* population trends but provided the following supplemental information on *O. faveolata's* abundance. Extrapolated population estimates from stratified random samples in the Florida Keys were 39.7 ± 8 million (SE) colonies in 2005, 21.9 ± 7 million (SE) colonies in 2009, and 47.3 ± 14.5 million (SE) colonies in 2012. The greatest proportion of colonies tended to fall in the 10 to 20 cm and 20 to 30 cm size classes in all survey years, but there was a fairly large proportion of colonies in the greater than 90 cm size class. Partial mortality of the colonies was between 10 and 60 percent surface across all size classes. In the Dry Tortugas, Florida, *O. faveolata* ranked seventh most abundant out of 43 coral species in 2006 and fifth most abundant out of 40 in 2008. Extrapolated population estimates were 36.1 ± 4.8 million (SE) colonies in 2006 and 30 ± 3.3 million (SE) colonies in 2008. The size classes with the largest proportion of colonies were 10 to 20 cm and 20 to 30 cm, but there was a fairly large proportion of colonies in the greater than 90 cm size class. Partial mortality of the colonies ranged between approximately two percent and 50 percent. Because these population abundance estimates are based on random surveys, differences between years may be attributed to sampling effort rather than population trends (Miller *et al.,* 2013).

Supplemental information we found on *O. faveolata's* abundance and population trends includes the following. In a survey of 31 sites in Dominica between 1999 and 2002, *O. faveolata* was present at 80 percent of the sites at one to ten percent cover (Steiner, 2003). In a 1995 survey of 16 reefs in the Florida Keys, *O. faveolata* ranked as the coral species with the second highest percent cover (Murdoch and Aronson, 1999). On 84 patch reefs (3 to 5 m depth) spanning 240 km in the Florida Keys, *O. faveolata* was the third most abundant coral species comprising seven percent of the 17,568 colonies encountered and was present at 95 percent of surveyed reefs between 2001 and 2003 (Lirman and Fong, 2007). In surveys of 280 sites in the upper Florida Keys in 2011, *O. faveolata* was present at 87 percent of sites visited (Miller *et al.,* 2011b). In 2003 on the East Flower Garden Bank, *O. faveolata* comprised ten percent of the 76.5 percent coral cover on reefs 32 to 40 m, and partial mortality due to bleaching, disease, and predation were rare at monitoring stations (Precht *et al.,* 2005).

Colony density ranges from approximately 0.1 to 1.8 colonies per 10 m^2 and varies by habitat and location. In surveys along the Florida reef tract from Martin County to the lower Florida Keys, density of *O. faveolata* was approximately 1.6 colonies per 10 m^2 (Wagner *et al.,* 2010). On remote reefs off southwest Cuba, density of *O. faveolata* was 0.12 ± 0.20 (SD) colonies per 10 m transect on 38 reef-crest sites and 1.26 ± 1.06 colonies per 10 m transect on 30 reef-front sites (Alcolado *et al.* 2010). In surveys of 1,176 sites in southeast Florida, the Dry Tortugas, and the Florida Keys between 2005 and 2010, density of *O. faveolata* ranged between 0.17 and 1.75 colonies per 10 m^2 and was highest on mid-channel reefs followed by offshore patch reefs and fore-reefs (Burman *et al.,* 2012). Along the east coast of Florida, density was highest in areas south of Miami at 0.94 colonies per 10 m^2 compared to 0.11 colonies per 10 m^2 in Palm Beach and Broward Counties (Burman *et al.,* 2012).

Orbicella faveolata is the sixth most abundant species by percent cover in permanent monitoring stations in the U.S. Virgin Islands. The species complex had the highest abundance and included all colonies where species identification was uncertain. Therefore, *O. faveolata* is likely more abundant. Population estimates in the 49 km^2 Red

Hind Marine Conservation District are at least 16 million colonies (Smith, 2013).

Population trend data exists for several locations. At nine sites off Mona and Desecheo Islands, Puerto Rico, no species extirpations were noted at any site over ten years of monitoring between 1998 and 2008 (Bruckner and Hill, 2009). Both *O. faveolata* and *O. annularis* sustained the large losses during the period. The number of colonies of *O. faveolata* decreased by 36 and 48 percent at Mona and Desecheo Islands, respectively (Bruckner and Hill, 2009). In 1998, 27 percent of all corals at six sites surveyed off Mona Island were *O. faveolata* colonies, but decreased to approximately 11 percent in 2008 (Bruckner and Hill, 2009). At Desecheo Island, 12 percent of all coral colonies were *O. faveolata* in 2000 compared to seven percent in 2008.

In a survey of 185 sites in five countries (Bahamas, Bonaire, Cayman Islands, Puerto Rico, and St. Kitts and Nevis) between 2010 and 2011, size of *O. faveolata* colonies was significantly greater than *O. franksi* and *O. annularis.* The total mean partial mortality of *O. faveolata* at all sites was 38 percent. The total live area occupied by *O. faveolata* declined by a mean of 65 percent, and mean colony size declined from 4005 cm^2 to 1413 cm^2. At the same time, there was a 168 percent increase in small tissue remnants less than 500 cm^2, while the proportion of completely live large (1,500 to 30,000 cm^2) colonies decreased. *Orbicella faveolata* colonies in Puerto Rico were much larger and sustained higher levels of mortality compared to the other four countries. Colonies in Bonaire were also large but experienced much lower levels of mortality. Mortality was attributed primarily to outbreaks of white plague and yellow band disease, which emerged as corals began recovering from mass bleaching events. This was followed by increased predation and removal of live tissue by damselfish to cultivate algal lawns (Bruckner, 2012a).

All information on *O. faveolata's* abundance and population trends can be summarized as follows. *Orbicella faveolata* is a common species throughout the greater Caribbean. Based on population estimates, there are at least tens of millions of colonies present in each of several locations including the Florida Keys, Dry Tortugas, and the U.S. Virgin Islands. Absolute abundance is higher than the estimate from these three locations given the presence of this species in many other locations throughout its range. Population decline has occurred over the past few decades with a 65 percent loss in *O. faveolata* cover across five countries. Losses of *O. faveolata* from Mona and Descheo Islands, Puerto Rico include a 36 to 48 percent reduction in abundance and a decrease of 42 to 59 percent in its relative abundance (*i.e.,* proportion relative to all coral colonies). High partial mortality of colonies has led to smaller colony sizes and a decrease of larger colonies in some locations such as the Bahamas, Bonaire, Puerto Rico, Cayman Islands, and St. Kitts and Nevis. Partial colony mortality is lower in some areas such as the Flower Garden Banks. We conclude that *O. faveolata* has declined but remains common and likely has at least tens of millions of colonies throughout its range. Additionally as discussed in the genus section, we conclude that the buffering capacity of *O. faveolata's* life history strategy that has allowed it to remain abundant has been reduced by the recent population declines and amounts of partial mortality, particularly in large colonies.

Other Biological Information

The SRR and SIR provided the following information on *O. faveolata's* life history. In many life history characteristics, including growth rates, tissue regeneration, and egg size, *O. faveolata* is considered intermediate between *O. annularis* and *O. franksi.* Spatial distribution may affect fecundity on the reef, with deeper colonies of *O. faveolata* being less fecund due to greater polyp spacing.

The public comments did not provide new or supplemental information on the life history of *O. faveolata.* Supplemental information we found on *O. faveolata's* life history includes the following. Reported growth rates of *O. faveolata* range between 0.3 and 1.6 cm per year (Cruz-Piñón *et al.,* 2003; Tomascik, 1990; Villinski, 2003; Waddell, 2005). Graham and van Woesik (2013) report that 44 percent of small colonies of *O. faveolata* in Puerto Morelos, Mexico, resulting from partial colony mortality produced eggs at sizes smaller than maturation. The number of eggs produced per unit area of smaller fragments was significantly less than in larger size classes. Szmant and Miller (2005) reported low post-settlement survivorship for *O. faveolata* transplanted to the field with only three to 15 percent remaining alive after 30 days. Post-settlement survivorship was much lower than the 29 percent observed for *A. palmata* after seven months (Szmant and Miller, 2005). Darling *et al.* (2012) performed a biological trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Orbicella faveolata* was classified as a ''generalist'' species, thus likely less vulnerable to environmental stress.

The SRR and SIR provided the following other biological information on *O. faveolata.* Surveys at an inshore patch reef in the Florida Keys that experienced temperatures less than 18 degrees C for 11 days revealed species-specific cold-water susceptibility and survivorship. *Orbicella faveolata* was one of the more susceptible species with 90 percent of colonies experiencing total colony mortality, including some colonies estimated to be more than 200 years old (Kemp *et al.,* 2011). In surveys from Martin County to the lower Florida Keys, *O. faveolata* was the second most susceptible coral species experiencing an average of 37 percent partial mortality (Lirman *et al.,* 2011).

The public comments did not provide any new or supplemental biological information on *O. faveolata.* Supplemental biological information we found on *O. faveolata* includes the following. Samples (n = 182) of *O. faveolata* from the upper and lower Florida Keys and Mexico showed three well-defined populations based on five genetic markers, but the populations were not stratified by geography, indicating they were shared among the three regions (Baums *et al.,* 2010). Of ten *O. faveolata* colonies observed to spawn at a site off Bocas del Toro, Panama, colonies sorted into three spatially arranged genotypes (Levitan *et al.,* 2011).

Orbicella faveolata larvae are sensitive to ultraviolet radiation during the motile planula stage through the onset of larval competence (Aranda *et al.,* 2011). Of six Caribbean coral species exposed to high solar irradiation, *O. faveolata* and *Stephanocoenia intersepta* had the most severe decline in photochemical efficiency resulting in severe tissue loss and mortality (Fournie *et al.,* 2012).

Experiments exposing *O. faveolata* to high temperatures (up to 35 degrees C) revealed that the corals produced heat shock proteins at temperatures between 33 and 35 degrees C even for very short exposures (2 h) but did respond at temperatures between 27 and 31 degrees C when exposed from 2 hours to one week (Black *et al.,* 1995).

Thornhill *et al.* (2006) repeatedly sampled symbiont composition of colonies of six coral species in the Bahamas and the Florida Keys in 1998 and 2000 to 2004, during and after the 1997–98 bleaching event. Symbioses in *O. faveolata* remained stable at virtually

all sites in the Bahamas and the Florida Keys. Individual colonies usually showed fidelity over time to one particular *Symbiodinium* partner, and changing symbiont types was rare, thus indicating acclimation to warming temperatures may not occur by symbiont shuffling.

Susceptibility to Threats

The threat susceptibility information from the SRR and SIR was interpreted in the proposed rule for *O. faveolata's* vulnerabilities to threats as follows: High vulnerability to ocean warming, disease, acidification, sedimentation, and nutrient enrichment; moderate vulnerability to the trophic effects of fishing; and low vulnerability to sea level rise, predation, and collection and trade.

The SRR and SIR provided the following information on the susceptibility of *O. faveolata* to ocean warming. Recent work in the Mesoamerican reef system indicated that *O. faveolata* had reduced thermal tolerance in locations with increasing human populations and over time, implying increasing local threats. At sites in Navassa, *O. faveolata* and *Agaricia* spp. were the most susceptible to bleaching. Approximately 90 percent of *O. faveolata* colonies (n = 334) bleached at deeper sites (>18 m), and approximately 60 percent of *O. faveolata* colonies (n = 20) bleached at shallower sites (<10 m) in 2006. During a moderate bleaching event in Colombia in 2010, 100 percent of *O. faveolata* colonies bleached at a site in Gayraca Bay, and 50 percent of *O. faveolata* colonies were dead and completely overgrown by algae in 2011 (Bayraktarov *et al.,* 2012).

The public comments did not provide new or supplemental information on the susceptibility of *O. faveolata* to ocean warming. Supplemental information we found on the susceptibility of *O. faveolata* to ocean warming includes the following. Stratified random surveys on back-reefs and fore-reefs between one and 30 m depth off Puerto Rico (Mona and Desecho Islands, La Parguera, Mayaguez, Boqueron, and Rincon) in 2005 and 2006 revealed severe bleaching in *O. faveolata* with approximately 90 percent of colonies bleached (Waddell and Clarke, 2008). Surveys from 2005 to 2007 along the Florida reef tract from Martin County to the lower Florida Keys indicated that *O. faveolata* had the 13th highest bleaching prevalence out of 30 species observed to bleach (Wagner *et al.,* 2010). During a 2009 bleaching event on Little Cayman, of the ten coral species that bleached, *O. faveolata* had the third highest bleaching prevalence with approximately 37 percent of colonies bleached (van Hooidonk *et al.,* 2012).

Coral cores from 92 colonies of *O. faveolata* from the Mesoamerican Reef around Belize and Honduras indicate that the bleaching event in 1998 was unprecedented in the prior century despite periods of higher temperatures and solar irradiance (Carilli *et al.,* 2010). The authors of the study concluded that bleaching in 1998 likely stemmed from reduced thermal tolerance due to the synergistic impacts of chronic local stressors stemming from land-based sources of pollution (Carilli *et al.,* 2010). Coral cores collected from four sites in Belize indicate that *O. faveolata* that experienced higher chronic stress were more severely affected by bleaching and had a much slower recovery after the severe 1998 bleaching event (Carilli *et al.,* 2009). Coral growth rates at sites with higher local anthropogenic stressors remained suppressed for at least eight years, while coral growth rates at sites with lower stress recovered in two to three years (Carilli *et al.,* 2009). Based on samples of *O. faveolata* and *O. franksi* collected from the Mesoamerican Barrier Reef, calcification of these two species is projected to cease at 35 degrees C in this location, even without an increase in acidification (Carricart-Ganivet *et al.,* 2012). Collections from Chinchorro Bank indicate that calcification of *O. faveolata* decreased 20 percent over the period of 1985 to 2009 where there was a 0.6 degree C increase in sea surface temperature (equivalent to 2.4 degrees C per century; Carricart-Ganivet *et al.,* 2012).

Polato *et al.* (2010) raised *O. faveolata* larvae derived from three to four colonies from Florida and Mexico under mean and elevated (1 to 2 degrees above summer mean) temperatures. Both locations had misshapen embryos at the elevated temperature, but the percentage was higher in the embryos from Florida. They found conserved and location-specific variation in gene expression in processes related to apoptosis (programmed cell death), cell structuring, adhesion and development, energy and protein metabolism, and response to stress.

Voolstra *et al.* (2009) exposed *O. faveolata* embryos to temperatures of 27.5, 29, and 31.5 degrees C directly after fertilization and measured differences in gene expression after 12 and 48 hours. They found a higher number of misshapen embryos after 12 hours at 29 and 31.5 degrees C in comparison to embryos kept at 27.5 degrees C. However, after 48 hours, the proportion of misshapen embryos decreased for embryos kept at 29 and 31.5 degrees C, and increased for embryos kept at 27.5 degrees C. Increased temperatures may lead to oxidative stress, apoptosis, and a structural reconfiguration of the cytoskeletal network. However, embryos responded differently depending on exposure time and temperature level. Embryos showed expression of stress-related genes at a temperature of 29 degrees C but seemed to be able to counteract the initial response over time. Embryos at 31.5 degrees C displayed continuous expression of stress genes.

During the 2005 bleaching event, larger colonies of *O. faveolata* experienced more intensive bleaching than smaller colonies at inshore patch reefs of the Florida Keys (Brandt, 2009). *Orbicella faveolata* was one of the most affected species with approximately 80 percent of colonies (n = 77) bleached and, out of eight species that bleached, had the fourth highest bleaching prevalence (Brandt, 2009). *Orbicella faveolata* colonies with greater bleaching intensities later developed white plague disease (Brandt and McManus, 2009). White plague affected approximately ten percent of *O. faveolata* colonies and resulted in less than five percent tissue loss in all but two infected corals which experienced greater than five percent tissue loss (Brandt and McManus, 2009).

All sources of information are used to describe *O. faveolata's* susceptibility to ocean warming as follows. *Orbicella faveolata* is highly susceptible to elevated temperatures. In lab experiments, elevated temperatures resulted in misshapen embryos and differential gene expression in larvae that could indicate negative effects on larval development and survival. Bleaching susceptibility is generally high with 37 to 100 percent of *O. faveolata* colonies reported to bleach during several bleaching events. Chronic local stressors can exacerbate the effects of warming temperatures, which can result in slower recovery from bleaching, reduced calcification, and slower growth rates for several years following bleaching. Additionally, disease outbreaks affecting *O. faveolata* have been linked to elevated temperature as they have occurred after bleaching events. We conclude that *O. faveolata* is highly susceptible to elevated temperature.

The SRR and SIR provided the following information on *O. faveolata's* susceptibility to acidification. A field study did not find any change in *O. faveolata's* calcification in field-

sampled colonies from the Florida Keys up through 1996.

The public comments did not provide new or supplemental information on the susceptibility of *O. faveolata* to acidification. Supplemental information we found on the susceptibility of *O. faveolata* to acidification includes the following. In laboratory experiments, reproduction of *O. faveolata* was negatively impacted by increasing CO_2, and impairment of fertilization was exacerbated at lower sperm concentrations (Albright, 2011b). Fertilization success was reduced by 25 percent at 529 µatm (43 percent fertilization) and 40 percent at 712 µatm (34 percent fertilization) compared to controls at 435 µatm (57 percent fertilization; Albright, 2011a). Additionally, growth rate of *O. faveolata* was reduced under lower pH conditions (7.6) compared to higher pH conditions (8.1) after 120 days of exposure (Hall *et al.,* 2012).

All sources of information are used to describe *O. faveolata's* susceptibility to acidification as follows. Laboratory studies indicate that *O. faveolata* is susceptible to ocean acidification both through reduced fertilization of gametes and reduced growth of colonies. Thus, we conclude that *O. faveolata* is highly susceptible to ocean acidification.

The SRR and SIR did not provide any species-specific information on the susceptibility of *O. faveolata* to disease. The public comments also did not provide new or supplemental information on the susceptibility of *O. faveolata* to disease. Supplemental information we found on the susceptibility of *O. faveolata* to disease confirms the information on the *Orbicella* species complex and includes the following. Disease affected corals in Puerto Rico after the 2005 bleaching event, and *O. faveolata* was the species most affected (Bruckner and Hill, 2009). A 1998 outbreak of white plague on three surveyed reefs in St. Lucia affected 19 percent of *O. faveolata* colonies, and *O. faveolata* was the species most affected (Nugues, 2002). Larger colonies in St. Lucia were more likely to get infected, but they were less likely to suffer complete mortality (Nugues, 2002). Tissue mortality of marked *O. faveolata* colonies was 51 percent, and no colonies showed regrowth during the 8 month study period (Nugues, 2002). Disease surveys conducted between August and December 1999 at 19 reef sites from six geographic areas across the wider Caribbean (Bermuda, Puerto Rico, Bonaire, Venezuela, Colombia, and Jamaica) revealed that *O. faveolata* showed the second highest incidence of disease at 4.7 to 10.4 percent across geographic locations (Weil *et al.,* 2002).

Surveys at five sites along the west coast of Dominica between 2000 and 2002 revealed that *O. faveolata* was one of the species most susceptible to disease. Of the 12 species infected by white plague in 2000, *O. faveolata* ranked second highest in disease prevalence (18.4 percent of infected colonies were *O. faveolata*); it ranked third in 2001 out of 14 species (12.7 percent) and second in 2002 out of 13 species (18.8 percent). In addition, white plague infected the larger size classes of *O. faveolata.* Although only one colony experienced total colony mortality, *O. faveolata* had the highest amount of tissue loss in each year and in the three years combined (Borger and Steiner, 2005).

Yellow band disease in *O. faveolata* increased in abundance between 1999 and 2004 on reefs near La Parguera and Desecheo and Mona Islands, Puerto Rico (Waddell, 2005). Yellow band disease mean lesion growth rates on *O. faveolata* in La Parguera, Puerto Rico had a significant positive correlation with mean yearly surface water temperatures between 1998 and 2010 (Burge *et al.,* 2014). In Curacao colonies of *O. faveolata* infected with yellow band disease lost 90 percent of their tissue between 1997 and 2005 (Bruckner and Bruckner, 2006a). Only the unaffected parts of colonies continued to grow, and only the smallest lesions caused by disease healed (Bruckner and Bruckner, 2006a). Partial mortality was higher in 2005 (average of 40 percent) than in 1998 (Bruckner and Bruckner, 2006a). Outbreaks of white plague occurred in 2001 and 2005 and infected *O. faveolata* and *O. annularis* with the highest frequency (Bruckner and Bruckner, 2006a).

Yellow band disease significantly affects *O. faveolata* reproductive output. Fecundity of diseased lesions was significantly lower than transition and healthy-looking tissues on diseased colonies. Diseased lesions had 99 percent fewer eggs compared to un-diseased control colonies. Fecundity in transition areas was 24 percent less than healthy-looking areas of diseased colonies and was significantly lower (50 percent) than in un-diseased control colonies. Healthy-looking tissues of diseased colonies had 27 percent lower fecundity compared to un-diseased control colonies. Furthermore, in colonies that had recovered from disease, small tissue remnants (less than 100 cm^2) had 84 percent lower fecundity compared to un-diseased controls, and large tissue remnants (400 to 1000 cm^2) had 64 percent lower fecundity compared to un-diseased controls (Weil *et al.,* 2009).

All sources of information are used to describe *O. faveolata's* susceptibility to disease as follows. *Orbicella faveolata* is often among the coral species with the highest disease prevalence and tissue loss. Outbreaks have been reported to affect ten to 19 percent of *O. faveolata* colonies, and yellow band disease and white plague have the greatest effect. Disease often affects larger colonies, and reported tissue loss due to disease ranges from five to 90 percent. Additionally, yellow band disease results in lower fecundity in diseased and recovered colonies of *O. faveolata.* Therefore, we conclude that *O. faveolata* is highly susceptible to disease.

The SIR and SRR did not provide any species-specific information on the trophic effects of fishing on *O. faveolata.* The public comments did not provide new or supplemental information, and we did not find supplemental information on the trophic effects of fishing on *O. faveolata.* However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. Thus, *O. faveolata* likely has some susceptibility to the trophic effects of fishing given its low recruitment rates. However, the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR did not provide species-specific information on the susceptibility of *O. faveolata* to sedimentation, and the public comments did not provide new or supplemental information on its susceptibility to this threat. Supplemental information we found confirms the information on the susceptibility of the *Orbicella* species complex to sedimentation and includes the following. In St. Lucia, rates of partial mortality of *O. annularis* and *O. faveolata* were higher close to river mouths where sediments were deposited than they were farther from the river mouths, indicating the sensitivity of these two species to sedimentation (Nugues and Roberts, 2003).

All sources of information are used to describe *O. faveolata's* susceptibility to sedimentation as follows. Sedimentation can cause partial mortality of *O. faveolata,* and genus-level information indicates that sedimentation negatively affects primary production, growth rates, calcification, colony size, and

abundance. Therefore, we conclude that *O. faveolata* is highly susceptible to sedimentation.

The SRR, SIR, and public comments did not provide information on the susceptibility of *O. faveolata* to nutrient enrichment, and we did not find any new or supplemental information on the susceptibility of *O. faveolata* to nutrient enrichment.

All sources of information are used to describe *O. faveolata's* susceptibility to nutrient enrichment as follows. Although there is no species-specific information, the *Orbicella* species complex is susceptible to nutrient enrichment through reduced growth rates, lowered recruitment, and increased disease severity. Therefore, based on genus-level information, we conclude that *O. faveolata* is likely highly susceptible to nutrient enrichment.

The SRR and SIR provided the following information on the susceptibility of *O. faveolata* to predation. Under laboratory conditions, black band disease was transmitted to healthy *O. faveolata* fragments in the presence of the butterflyfish *Chaetodon capistratus* but not in aquaria without the fish present, suggesting that the fish acts as a disease vector (Aeby and Santavy, 2006).

The public comments did not provide new or supplemental information on the susceptibility of *O. faveolata* to predation. Supplemental information we found on the susceptibility of *O. faveolata* to predation includes the following. In surveys of the Florida Keys in 2012, two percent of *O. faveolata* colonies were affected by predation by the corallivorous snail *C. abbreviata* (Miller *et al.,* 2013). Parrotfish consume *O. annularis* and *O. faveolata* more intensively than other coral species, but tissue regeneration capabilities appear to be high enough to counterbalance loss from predation (Mumby, 2009).

All sources of information are used to describe *O. faveolata's* susceptibility to predation as follows. *Orbicella faveolata* is affected by a number of predators, but losses appear to be minimal. We conclude that *O. faveolata* has low susceptibility to predation.

The SRR and SIR did not provide information on the effects of sea level rise on *O. faveolata.* The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *O. faveolata's* susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *O. faveolata* has some susceptibility to sea level rise, but the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR did not provide species-specific information on the susceptibility of *O. faveolata* to collection and trade, and the public comments did not provide new or supplemental information on its susceptibility to this threat. Supplemental information we found confirms the information in the SRR and SIR that collection and trade is not a significant threat for the *Orbicella* species complex. Over the last decade, collection and trade of this species has been primarily for scientific research rather than commercial purposes. Gross exports for collection and trade of *O. faveolata* between 2000 and 2012 averaged 271 specimens (data available at *http://trade.cites.org*). We conclude that *O. faveolata* has low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanism or conservation efforts for *O. faveolata.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *O. faveolata* occurs in five Atlantic ecoregions, and studies and observations have confirmed the presence of *O. faveolata* in an additional three ecoregions (Burman *et al.,* 2012). These eight ecoregions encompass 26 kingdom's and countries' EEZs. The 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Caribbean Territories and possibly Bermuda), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *O. faveolata,* described first as a percentage of the above kingdoms and countries that utilize them to any degree, and second as the percentages of those kingdoms and countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *O. faveolata* are reef fishing regulations and area management for protection and conservation. However, half of the reef fishing regulations are limited in scope and may not provide substantial protection for the species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *O. faveolata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the extinction risk for *O. faveolata* are its extremely low productivity (growth and recruitment), documented dramatic recent declines, and its restriction to the highly disturbed/degraded wider Caribbean region.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *O. faveolata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. The species has undergone major declines mostly due to warming-induced bleaching and disease. There is evidence of synergistic effects of threats for this species including disease outbreaks following

bleaching events and reduced thermal tolerance due to chronic local stressors stemming from land-based sources of pollution. *Orbicella faveolata* is highly susceptible to a number of threats, and cumulative effects of multiple threats have likely contributed to its decline and exacerbate vulnerability to extinction. Despite high declines, the species is still common and remains one of the most abundant species on Caribbean reefs. Its life history characteristics of large colony size and long life span have enabled it to remain relatively persistent despite slow growth and low recruitment rates, thus moderating vulnerability to extinction. However, the buffering capacity of these life history characteristics is expected to decrease as colonies shift to smaller size classes as has been observed in locations in its range. Its absolute population abundance has been estimated as at least tens of millions of colonies in each of several locations including the Florida Keys, Dry Tortugas, and the U.S. Virgin Islands and is higher than the estimate from these three locations due to the occurrence of the species in many other areas throughout its range. Despite the large number of islands and environments that are included in the species' range, geographic distribution in the highly disturbed Caribbean exacerbates vulnerability to extinction over the foreseeable future because *O. faveolata* is limited to an area with high, localized human impacts and predicted increasing threats. Its depth range of 0.5 to at least 40 m, possibly up to 90 m, moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower temperatures than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. *Orbicella faveolata* occurs in most reef habitats, including both shallow and mesophotic reefs, which moderates vulnerability to extinction over the foreseeable future because the species occurs in numerous types of reef environments that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance, life history characteristics, and depth distribution, combined with spatial variability in ocean warming and acidification across the species' range, moderate vulnerability to extinction because the threats are non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *O. faveolata* was proposed for listing as endangered because of: High vulnerability to ocean warming (E), disease (C), and ocean acidification (E); high vulnerability to sedimentation (A and E) and nutrient over-enrichment (A and E); decreasing trend in abundance (E); low relative recruitment rate (E); moderate overall distribution (based on narrow geographic distribution and wide depth distribution) (E); restriction to the Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *O. faveolata* from endangered to threatened. We made this determination based on a more species-specific and holistic approach, including consideration of the buffering capacity of this species' spatial and demographic traits, and the best available information above on *O. faveolata's* spatial structure, demography, threat susceptibilities, and management. This combination of factors indicates that *O. faveolata* is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Orbicella faveolata* is highly susceptible to ocean warming (ESA Factor E), disease (C), ocean acidification (E), sedimentation (A, E), and nutrients (A, E) and susceptible to trophic effects of fishing (A). These threats are expected to continue and increase into the future. In addition, the species is at heightened extinction risk due to inadequate existing regulatory mechanisms to address global threats (D);

(2) *Orbicella faveolata* is geographically located in the highly disturbed Caribbean where localized human impacts are high and threats are predicted to increase as described in the Threats Evaluation section. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future;

(3) *Orbicella faveolata* has experienced substantial declines in abundance and percent cover over the past two decades; and

(4) *Orbicella faveolata's* slow growth rate and low sexual recruitment limit its capacity for recovery from threat-induced mortality events throughout its range over the foreseeable future. Additionally, shifts to smaller size classes via fission and partial mortality of older, larger colonies, have reduced the buffering capacity of *O. faveolata's* life history strategy.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range, and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *O. faveolata's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *Orbicella faveolata's* distribution within the Caribbean increases its risk of exposure to threats as described above, its known depth distribution is between 0.5 and 45 m, with occurrence by the complex as deep as 90 m, and its habitat includes various shallow and mesophotic reef environments. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will experience highly variable thermal regimes and ocean chemistry on local and regional scales at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) Although *O. faveolata's* abundance has declined, it still has a common occurrence and remains one of the most dominant corals in the Caribbean. Its absolute abundance is at least tens of millions of colonies based on estimates from three locations. Absolute abundance is higher than estimates from these locations since *it* occurs in many other locations throughout its range. This absolute abundance allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from

environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, multitudes of conservation efforts are already broadly employed that are likely benefiting *O. faveolata.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species' status to the point at which listing is not warranted.

Orbicella franksi

Introduction

The SRR and SIR provided the following information on *O. franksi*'s morphology. *Orbicella franksi* is distinguished by large, unevenly arrayed polyps that give the colony its characteristic irregular surface. Colony form is variable, and the skeleton is dense with poorly developed annual bands. Colony diameter can reach up to 5 m with a height of up to 2 m. The public comments did not provide new or supplemental information on *O. franksi*'s morphology, and we did not find any new or supplemental information.

Spatial Information

The SRR and SIR provided the following information on *O. franksi*'s distribution, habitat, and depth range. *Orbicella franksi* is distributed in the western Atlantic and throughout the Caribbean Sea including in the Bahamas, Bermuda, and the Flower Garden Banks. *Orbicella franksi* tends to have a deeper distribution than the other two species in the *Orbicella* species complex.

It occupies most reef environments and has been reported from water depths ranging from 5 to 50 m, with the species complex reported to 90 m. *Orbicella* species are a common, often dominant, component of Caribbean mesophotic reefs, suggesting the potential for deep refugia for *O. franksi.*

The public comments did not provide new or supplemental information on *O. franksi*'s distribution, habitat, or depth range. We did not find new or supplemental information on *O. franksi*'s habitat or depth range. Supplemental information we found on *O. franksi*'s distribution includes the following. Veron (2014) confirmed the occurrence of *O. franksi* in six out of his 11 ecoregions in the western Atlantic and greater Caribbean known to contain corals and strongly predicted its presence in an additional three ecoregions (off Colombia/Venezuela, Cuba/Cayman Islands, and Jamaica). Other studies confirm the presence of *O. franksi* in three other ecoregions (Alcolado *et al.,* 2010; Bayraktarov *et al.,* 2012; Bruckner, 2012c; Weil *et al.,* 2002). The two ecoregions where *O. franksi* has not been found are off the coasts of Brazil and the southeastern U.S. north of southern Florida (Veron, 2014).

Demographic Information

The SRR and SIR provided the following information on *O. franksi*'s abundance and population trends. *Orbicella franksi* is reported as common.

The public comments provided the following supplemental information on *O. franksi*'s abundance and population trends. In surveys throughout the Florida Keys, *O. franksi* in 2005 ranked 26th most abundant out of 47 coral species, 32nd out of 43 in 2009, and 33rd out of 40 in 2012. Extrapolated population estimates from stratified random surveys were 8.0 ± 3.5 million (SE) colonies in 2005, 0.3 ± 0.2 million (SE) colonies in 2009, and 0.4 ± 0.4 million (SE) colonies in 2012. The authors note that differences in extrapolated abundance between years were more likely a function of sampling effort rather than an indication of population trends. In 2005, the greatest proportions of colonies were in the smaller size classes of 10 to 20 cm and 20 to 30 cm. Partial colony mortality ranged from zero to approximately 73 percent and was generally higher in larger colonies (Miller *et al.,* 2013).

In the Dry Tortugas, Florida, *O. franksi* ranked fourth highest in abundance out of 43 coral species in 2006 and eighth out of 40 in 2008. Extrapolated population estimates were 79 ± 19 million (SE) colonies in 2006 and 18.2 ± 4.1 million (SE) colonies in 2008. The authors note the difference in estimates between years was more likely a function of sampling effort rather than population decline. In the first year of the study (*i.e.,* 2006), the greatest proportion of colonies were in the size class 20 to 30 cm with twice as many colonies as the next most numerous size class, and a fair number of colonies in the largest size class of greater than 90 cm. Partial colony mortality ranged from approximately ten to 55 percent. Two years later in 2008 no size class was found to dominate, and proportion of colonies in the medium to large size classes (60 to 90 cm) appeared to be less than in 2006. The number of colonies in the largest size class of greater than 90 cm remained consistent. Partial colony mortality ranged from approximately 15 to 75 percent (Miller *et al.,* 2013).

Supplemental information we found on *O. franksi*'s abundance and population trends includes the following. In a 1995 survey of 16 reefs in the Florida Keys, *O. franksi* has the highest percent cover of all species (Murdoch and Aronson, 1999). In a survey of 31 sites in Dominica between 1999 and 2002, *O. franksi* was present in seven percent of the sites at less than one percent cover (Steiner, 2003). In 2003 on the east Flower Garden Bank, *O. franksi* comprised 46 percent of the 76.5 percent coral cover on reefs 32 to 40 m in depth, and partial coral mortality due to bleaching, disease, and predation was rare in survey stations (Precht *et al.,* 2005).

Reported density is variable by location and habitat and is reported to range from 0.02 to 1.05 colonies per 10 m^2. In surveys of 1,176 sites in southeast Florida, the Dry Tortugas, and the Florida Keys between 2005 and 2010, density of *O. franksi* ranged between 0.04 and 0.47 colonies per 10 m^2 and was highest on the offshore patch reef and fore-reef habitats (Burman *et al.,* 2012). In south Florida, density was highest in areas south of Miami at 0.44 colonies per 10 m^2 compared to 0.02 colonies per 10 m^2 in Palm Beach and Broward Counties (Burman *et al.,* 2012). Along the Florida reef tract from Martin County to the lower Florida Keys, density of *O. franksi* was approximately 0.9 colonies per 10 m^2 (Wagner *et al.,* 2010). On remote reefs off southwest Cuba, colony density was 0.083 ± 0.17 (SD) per 10 m transect on 38 reef-crest sites and 1.05 ± 1.02 colonies per 10 m transect on 30 reef-front sites (Alcolado *et al.,* 2010). The number of *O. franksi* colonies in Cuba with partial colony mortality were far more frequent than those with no mortality across all size classes, except for one (*i.e.,* less than 50 cm) that had similar frequency of colonies with and without partial mortality (Alcolado *et al.,* 2010).

In the U.S. Virgin Islands, *O. franksi* is the second most abundant species by percent cover at permanent monitoring stations. However, because the species complex, which is the most abundant by cover, was included as a category when individual *Orbicella* species could not

be identified with certainty, it is likely that *O. franksi* is the most abundant. Population estimates of *O. franksi* in the 49 km² Red Hind Marine Conservation District are at least 34 million colonies (Smith, 2013).

Abundance in Curacao and Puerto Rico and appears to be stable over an eight to ten year period. In Curacao, abundance was stable between 1997 and 2005, with partial mortality similar or less in 2005 compared to 1998 (Bruckner and Bruckner, 2006a). Abundance was also stable between 1998–2008 at nine sites off Mona and Desecheo Islands, Puerto Rico. In 1998, 4 percent of all corals at six sites surveyed off Mona Island were *O. franksi* colonies in 1998 and approximately five percent in 2008; at Desecheo Island, about two percent of all coral colonies were *O. franksi* in both 2000 and 2008 (Bruckner and Hill, 2009).

On the other hand, colony size has decreased over the past several decades. A survey of 185 sites (2010 and 2011) in five countries (Bahamas, Bonaire, Cayman Islands, Puerto Rico, and St. Kitts and Nevis) reported the size of *O. franksi* and *O. annularis* colonies as significantly smaller than *O. faveolata.* The total mean partial mortality of *O. franksi* was 25 percent. Overall, the total live area occupied by *O. franksi* declined by a mean of 38 percent, and mean colony size declined from 1356 cm² to 845 cm². At the same time there was a 137 percent increase in small tissue remnants less than 500 cm², along with a decline in the proportion of large (1,500 to 30,000 cm²), completely alive colonies. Mortality was attributed primarily to outbreaks of white plague and yellow band disease, which emerged as corals began recovering from mass bleaching events. This was followed by increased predation and removal of live tissue by damselfish to cultivate algal lawns (Bruckner, 2012a).

All information on *O. franksi*'s abundance and population trends can be summarized as follows. Based on population estimates, there are at least tens of millions of colonies present in both the Dry Tortugas and U.S. Virgin Islands. Absolute abundance is higher than the estimate from these two locations given the presence of this species in many other locations throughout its range. The frequency and extent of partial mortality, especially in larger colonies of *O. franksi,* appear to be high in some locations such as Florida and Cuba, though other locations like the Flower Garden Banks appear to have lower amounts of partial mortality. A decrease in *O. franksi* percent cover by 38 percent, and a shift to smaller colony size across five countries, suggest that population decline has occurred in some areas; colony abundance appears to be stable in other areas. We conclude that while population decline has occurred, *O. franksi* is still common with the number of colonies at least in the tens of millions. Additionally, as discussed in the genus section, we conclude that the buffering capacity of *O. franksi*'s life history strategy that has allowed it to remain abundant has been reduced by the recent population declines and amounts of partial mortality, particularly in large colonies.

Other Biological Information

The SRR and SIR provided the following information on *O. franksi*'s life history. The growth rate for *O. franksi* is reported to be slower, and spawning is reported to be about one to two hours earlier than *O. annularis* and *O. faveolata.*

The public comments did not provide new or supplemental information on *O. franksi*'s life history. Supplemental information we found on *O. franksi*'s life history includes the following. Of 361 colonies of *O. franksi* tagged in Bocas del Toro, Panama, larger colonies were noted to spawn more frequently than smaller colonies between 2002 and 2009 (Levitan *et al.,* 2011). Darling *et al.* (2012) performed a biological trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Orbicella franksi* was classified as a ''generalist'' species, thus likely less vulnerable to environmental stress.

The SRR and SIR provided the following other biological information on *O. franksi.* Low tissue biomass can render specific colonies of *O. franksi* susceptible to mortality from stress events, such as bleaching or disease. This suggests that differential mortality among individuals, species, and reefs from stress events such as bleaching or disease may be at least partially a function of differential colony biomass (indicating overall coral health) as opposed to genetic or physiologic differences among corals or their symbionts.

In a 2010 cold-water event that affected south Florida, *O. franksi* ranked as the 14th most susceptible coral species out of 25 of the most abundant coral species. Average partial mortality was eight percent in surveys from Martin County to the lower Florida Keys after the 2010 cold-water event compared to 0.4 percent average mortality during summer surveys between 2005 and 2009.

The public comments did not provide new or supplemental biological information on *O. franksi.* Supplemental biological information we found on *O. franksi* includes the following. Of 351 *O. franksi* colonies observed to spawn at a site off Bocas del Toro, Panama, 324 were unique genotypes. Over 90 percent of *O. franksi* corals on this reef were the product of sexual reproduction, and 19 genetic individuals had asexually propagated colonies made up of two to four spatially adjacent ramets each. Individuals within a genotype spawned more synchronously than individuals of different genotypes. Additionally, within 5m, colonies nearby spawned more synchronously than farther spaced colonies, regardless of genotype. At distances greater than 5m, spawning was random between colonies (Levitan *et al.,* 2011).

In a study of symbiont composition of repeatedly sampled colonies of six species in the Bahamas and the Florida Keys (1998, and 2000 to 2004), major changes in symbiont dominance over time were observed at certain Florida Keys reefs in *O. annularis* and *O. franksi.* Some colonies of *O. annularis* and *O. franksi* exhibited shifts in their associations attributed to recovery from the stresses of the 1997–98 bleaching event. Most transitions in symbiont identity ended in 2002, three to five years after the 1997–98 bleaching event (Thornhill *et al.,* 2006).

Susceptibility to Threats

The threat susceptibility information from the SRR and SIR was interpreted in the proposed rule for *O. franksi*'s vulnerability to threats as follows: High vulnerability to ocean warming, disease, acidification, sedimentation, and nutrient enrichment; moderate vulnerability to the trophic effects of fishing; and low vulnerability to sea level rise, predation, and collection and trade.

The SRR and SIR did not provide species-specific information on the susceptibility of *O. franksi* to ocean warming. The public comments did not provide new or supplemental information on the susceptibility of *O. franksi* to ocean warming. Supplemental information we found on the susceptibility of *O. franksi* to ocean warming includes the following. A high percentage of *O. franksi* colonies experience bleaching during warm water temperature anomalies. Stratified random surveys on back-reefs and fore-reefs between one and 30 m depth off Puerto Rico (Mona and Desecho Islands,

La Parguera, Mayaguez, Boqueron, and Rincon) in 2005 and 2006 revealed severe bleaching in *O. franksi* with approximately 90 percent of colonies bleached (Waddell and Clarke, 2008). Surveys from 2005 to 2007 along the Florida reef tract from Martin County to the lower Florida Keys indicated *O. franksi* had the tenth highest bleaching prevalence out of 30 species observed to bleach (Wagner *et al.,* 2010). During a moderate bleaching event in Colombia in 2010, 88 percent of *O. franksi* bleached, and 12 percent paled at a site in Gayraca Bay (Bayraktarov *et al.,* 2012). In 2011, 75 percent of *O. franksi* were dead and completely overgrown by algae (Bayraktarov *et al.,* 2012). Based on samples of *O. franksi* and *O. faveolata* collected from the Mesoamerican Barrier Reef, calcification of these two species is projected to cease at 35 degrees C in this location in the absence of acidification (Carricart-Ganivet *et al.,* 2012).

All sources of information are used to describe *O. franksi's* susceptibility to ocean warming as follows. Available information indicates that *O. franksi* is highly susceptible to warming temperatures with a reported 88 to 90 percent bleaching frequency. Reported bleaching-related mortality from one study is high at 75 percent. There is indication that symbiont shuffling after bleaching in *O. franksi.* We conclude that *O. franksi* is highly susceptible to ocean warming.

The SRR and SIR did not provide any species-specific information on the susceptibility of *O. franksi* to acidification, and the public comments did not provide new or supplemental information on its susceptibility to this threat. We did not find any new or supplemental information on the susceptibility of *O. franksi* to acidification. Although there is no species-specific information on the susceptibility of *O. franksi* to ocean acidification, genus information indicates that the species complex has reduced growth and fertilization success under acidic conditions. Thus, we conclude *O. franksi* likely has high susceptibility to ocean acidification.

The SRR and SIR did not provide any species-specific information on the susceptibility of *O. franksi* to disease. The public comments did not provide new or supplemental information on the susceptibility of *O. franksi* to disease. Supplemental information we found on the susceptibility of *O. franksi* to disease includes the following. Disease surveys conducted between August and December 1999 at 19 reef sites from six geographic areas across the wider Caribbean (Bermuda, Puerto Rico, Bonaire, Venezuela, Colombia, and Jamaica) revealed that *O. franksi* had the third highest incidence of disease at 1.1 to 5.6 percent across geographic locations (Weil *et al.,* 2002). Between 1998 and 2000, *O. franksi* was one of six coral species identified in the Virgin Islands as most susceptible to disease (Waddell, 2005). In 2004 in Mexico, disease prevalence was highest in *O. franksi* with 41 percent of colonies infected, followed by 34 percent of *O. annularis* colonies and 31 percent of *O. faveolata* colonies (Ward *et al.,* 2006). In Curacao colonies of *O. franksi* infected with yellow band disease lost an average of 30 percent of their tissue between 1997 and 2005, but some tagged colonies exhibited re-sheeting over disease lesions (Bruckner and Bruckner, 2006a).

All sources of information are used to describe *O. franksi's* susceptibility to disease as follows. *Orbicella franksi* is often reported as among the species with the highest disease prevalence. Although there are few quantitative studies of the effects of disease on *O. franksi,* there is evidence that partial mortality can average about 25 to 30 percent and that disease can cause shifts to smaller size classes. Thus, we conclude that *O. franksi* is highly susceptible to disease.

The SIR and SRR did not provide any species-specific information on the trophic effects of fishing on *O. franksi.* The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the trophic effects of fishing on *O. franksi.* However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. Thus, *O. franksi* likely has some susceptibility to the trophic effects of fishing given its low recruitment rates.

The SRR, SIR, and public comments did not provide information on the susceptibility of *O. franksi* to sedimentation, and we did not find any new or supplemental information. All sources of information are used to describe *O. franksi's* susceptibility to sedimentation as follows. Genus information indicates sedimentation negatively affects primary production, growth rates, calcification, colony size, and abundance. Therefore, we conclude that *O. franksi* is highly susceptible to sedimentation.

The SRR, SIR, and public comments do not provide information on the susceptibility of *O. franksi* to nutrient enrichment. Supplemental information we found on the susceptibility of *O. franksi* to nutrient enrichment includes the following. Field experiments indicate that nutrient enrichment significantly increases yellow band disease severity in *O. annularis* and *O. franksi* through increased tissue loss (Bruno *et al.,* 2003).

All sources of information are used to describe *O. franksi's* susceptibility to nutrient enrichment as follows. Genus level information indicates *O. franksi* is likely susceptible to nutrient enrichment through reduced growth rates and lower recruitment. Additionally, nutrient enrichment has been shown to increase the severity of yellow band disease in *O. franksi.* Thus, we conclude that *O. franksi* is highly susceptible to nutrient enrichment.

The SRR and SIR do not provide species-specific information on the susceptibility of *O. franksi* to predation. Likewise, the public comments do not provide new or supplemental information on the susceptibility of *O. franksi* to predation. Supplemental information we found on the susceptibility of *O. franksi* to predation includes the following. Incidence of parrotfish grazing on the Belize barrier reef was second highest on *O. franksi.* However, in most habitats, the majority of *Orbicella* spp. showed little or no parrotfish grazing while only a few colonies were more heavily grazed, indicating low impact to the species overall (Rotjan, 2007).

All sources of information are used to describe *O. franksi's* susceptibility to predation as follows. Genus-level information indicates *O. franksi* is affected by a number of predators, but both species-level and genus-level impacts appear to be minimal. We conclude that *O. franksi* has low susceptibility to predation.

The SRR and SIR did not provide information on the effects of sea level rise on *O. franksi.* The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *O. franksi's* susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *O. franksi* has some susceptibility to sea level rise, but the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR do not provide species-specific information on the susceptibility of *O. franksi* to collection and trade, and the public comments do not provide new or supplemental information on its susceptibility to this threat. Supplemental information we found confirms the information in the

SRR and SIR that collection and trade is not a significant threat for the *Orbicella* species complex. Over the last decade, collection and trade of *O. franksi* has been primarily for scientific research rather than commercial purposes. Annual gross exports for collection and trade of *O. franksi* between 2000 and 2012 averaged 40 specimens (data available at *http://trade.cites.org*). Thus, we conclude that *O. franksi* has low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanism or conservation efforts for *O. franksi.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *O. franksi* occurs in six Atlantic ecoregions, and studies have confirmed the presence of *O. franksi* in an additional three ecoregions. These nine ecoregions encompass 26 kingdoms' and countries' EEZs, and the 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Caribbean Territories and Bermuda), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *O. franksi,* described first as a percentage of the above kingdoms and countries that utilize them to any degree, and second as the percentage of those kingdoms and countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *O. franksi* are reef fishing regulations and area management for protection and conservation. However, half of the reef fishing regulations are limited in scope and may not provide substantial protection for the species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *O. franksi.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the extinction risk for *O. franksi* are extremely low productivity (growth and recruitment), documented dramatic recent declines, and its restriction to the highly disturbed and degraded wider Caribbean region. All of these factors combined to yield a very high estimated extinction risk. It had a marginally lower risk estimate than the other two *O. annularis* complex species because of greater distribution in deep and mesophotic depth habitats, which are expected to experience lesser exposure to some surface-based threats.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *O. franksi,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. The species has undergone declines most likely from disease and warming-induced bleaching. There is evidence of synergistic effects of threats for this species including increased disease severity with nutrient enrichment. *Orbicella franksi* is highly susceptible to a number of threats, and cumulative effects of multiple threats have likely contributed to its decline and exacerbate vulnerability to extinction. Despite declines, the species is still common and remains one of the most abundant species on Caribbean reefs. Its life history characteristics of large colony size and long life span have enabled it to remain relatively persistent despite slow growth and low recruitment rates, thus moderating vulnerability to extinction. However, the buffering capacity of these life history characteristics is expected to decrease as colonies shift to smaller size classes as has been observed in locations in its range. Its absolute population abundance has been estimated as at least tens of millions of colonies in both a portion of the U.S. Virgin Islands and the Dry Tortugas and is higher than the estimate from these two locations due to the occurrence of the species in many other areas throughout its range. Despite the large number of islands and environments that are included in the species' range, geographic distribution in the highly disturbed Caribbean exacerbates vulnerability to extinction over the foreseeable future because *O. franksi* is limited to an area with high, localized human impacts and predicted increasing threats. Its depth range of five to at least 50 m, possibly up to 90 m, moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower temperatures than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. *Orbicella franksi* occurs in most reef habitats, including both shallow and mesophotic reefs, which moderates vulnerability to extinction over the foreseeable future because the species occurs in numerous types of reef environments that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance, life history characteristics, and depth distribution, combined with spatial variability in ocean warming and acidification across the species' range, moderate vulnerability to extinction because the threats are non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *O. franksi* was proposed for listing as endangered because of: High vulnerability to ocean warming (E) disease (C), and ocean acidification (E); high vulnerability to sedimentation (A and E) and nutrient over-enrichment (A

and E); decreasing trend in abundance (E); low relative recruitment rate (E); moderate overall distribution (based on narrow geographic distribution and wide depth distribution (E); restriction to the Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *O. franksi* from endangered to threatened. We made this determination based on a more species-specific and holistic approach, including consideration of the buffering capacity of this species' spatial and demographic traits, and the best available information above on *O. franksi's* spatial structure, demography, threat susceptibilities, and management. This combination of factors indicates that *O. franksi* is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Orbicella franksi* is highly susceptible to ocean warming (ESA Factor E), disease (C), nutrients (A, E), ocean acidification (E), and sedimentation (A, E) and susceptible to trophic effects of fishing (A). These threats are expected to continue and increase into the future. In addition, the species is at heightened extinction risk due to inadequate existing regulatory mechanisms to address global threats (D);

(2) *Orbicella franksi* is geographically located in the highly disturbed Caribbean where localized human impacts are high and threats are predicted to increase as described in the Threats Evaluation section. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future;

(3) *Orbicella franksi* has experienced a decline in benthic cover over the past two decades; and

(4) *Orbicella franksi's* slow growth rate and low sexual recruitment limits its capacity for recovery from threat-induced mortality events throughout its range over the foreseeable future. Additionally, shifts to smaller size classes via fission and partial mortality of older, larger colonies, have reduced the buffering capacity of *O. franksi's* life history strategy.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range, and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *O. franksi* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *Orbicella franksi's* distribution within the Caribbean increases its risk of exposure to threats as described above, its known depth distribution is between 5 and 50 m, with occurrence by the species complex as deep as 90 m, and its habitat includes various shallow and mesophotic reef environments. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will experience highly variable thermal regimes and ocean chemistry on local and regional scales at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species;

(2) Although *O. franksi* has declined in percent cover and colony size, there is evidence that population abundance has remained stable in some locations over a decadal time scale; and

(3) *Orbicella franksi* has a common occurrence and remains one of the most dominant corals in the Caribbean. It has an absolute abundance of at least tens of millions of colonies based on estimates from two locations. Absolute abundance is higher than estimates from these locations since *it* occurs in many other locations throughout its range. This absolute abundance allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section and thus does not warrant listing as endangered at this time.

Range-wide, multitudes of conservation efforts are already broadly employed that are likely benefiting *O. franksi.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species' status to the point at which listing is not warranted.

Orbicella annularis

Introduction

The SRR and SIR provided the following information on *O. annularis*' morphology. *Orbicella annularis* colonies grow in columns that exhibit rapid and regular upward growth. In contrast to the other two *Orbicella* species, margins on the sides of columns are typically dead. Live colony surfaces usually lack ridges or bumps. The public comments did not provide new or supplemental information on *O. annularis*' morphology, and we did not find any new or supplemental information.

Spatial Information

The SRR and SIR provided the following information on the distribution, habitat and depth range of *O. annularis. Orbicella annularis* is common throughout the western Atlantic and greater Caribbean including the Flower Garden Banks but may be absent from Bermuda. Two personal communications were cited: one confirming its rarity in Bermuda, and the other stating *O. annularis* had not been seen in Bermuda. *Orbicella annularis* is reported from most reef environments in depths of 0.5 to 20 m. The *Orbicella* species complex is a common, often dominant component of Caribbean mesophotic reefs, suggesting the potential for deep refugia across a broader depth range, but *O. annularis* is generally described with a shallower distribution.

The public comments did not provide new or supplemental information on *O. annularis*' distribution, habitat, or depth range. Supplemental information we found includes the following. Veron (2014) confirmed the occurrence of *O. annularis* in nine out of his 11 ecoregions in the western Atlantic and greater Caribbean known to contain corals, but indicated one of these ecoregions (Bermuda) has published records of occurrence that need further

investigation. Locke (2013) indicated early records of *O. annularis* in Bermuda may be incorrect since this species was historically undifferentiated from *O. franksi* and *O. faveolata.* The two ecoregions in which it is not found are off the coasts of Brazil and the southeastern U.S. north of southern Florida (Veron, 2014).

Demographic Information

The SRR and SIR provided the following information on *O. annularis*' abundance and population trends. *Orbicella annularis* has been described as common overall. Demographic data collected in Puerto Rico over nine years straddling the 2005 bleaching event showed that population growth rates were stable in the pre-bleaching period (2001–2005) but declined one year after the bleaching event. Population growth rates declined even further two years after the bleaching event but returned to stasis the following year.

The public comments provided the following supplemental information on *O. annularis*' abundance and population trends. In the Florida Keys, abundance of *O. annularis* ranked 30 out of 47 coral species in 2005, 13 out of 43 in 2009, and 12 out of 40 in 2012. Extrapolated population estimates from stratified random samples were 5.6 million ± 2.7 million (SE) in 2005, 11.5 million ± 4.5 million (SE) in 2009, and 24.3 million ± 12.4 million (SE) in 2012. Size class distribution was somewhat variable between survey years, with a larger proportion of colonies in the smaller size classes in 2005 compared to 2009 and 2012 and a greater proportion of colonies in the largest size class (>90 cm) in 2012 compared to 2005 and 2009. Partial colony mortality was lowest less than 10 cm (as low as approximately 5 percent) up to approximately 70 percent in the larger size classes. In the Dry Tortugas, Florida, abundance of *O. annularis* ranked 41 out of 43 in 2006 and 31 out of 40 in 2008. The extrapolated population estimate was 0.5 million ± 0.3 million (SE) colonies in 2008. Differences in population estimates between years may be attributed to sampling effort rather than population trends (Miller *et al.,* 2013).

Supplemental information we found on *O. annularis*' abundance and population trends includes the following. In Utila, Honduras, *O. annularis* was present at 80 percent of sites surveyed between 1999 and 2000 and was the second most common coral species (Afzal *et al.,* 2001). In a survey of 31 sites in Dominica between 1999 and 2002, *O. annularis* was present at 20 percent of the sites at one to ten percent cover (Steiner, 2003).

Colony density varies by habitat and location, and range from less than 0.1 to greater than one colony per 10 m^2. In surveys of 1,176 sites in southeast Florida, the Dry Tortugas, and the Florida Keys between 2005 and 2010, density of *O. annularis* ranged between 0.09 and 0.84 colonies per 10 m^2 and was highest on mid-channel reefs followed by inshore reefs, offshore patch reefs, and fore-reefs (Burman *et al.,* 2012). Along the east coast of Florida, density was highest in areas south of Miami (0.34 colonies per 10 m^2) compared to Palm Beach and Broward Counties (0.04 colonies per 10 m^2, Burman *et al.,* 2012). In surveys between 2005 to 2007 along the Florida reef tract from Martin County to the lower Florida Keys, density of *O. annularis* was approximately 1.3 colonies per 10 m^2 (Wagner *et al.,* 2010). Off southwest Cuba on remote reefs, *O. annularis* density was 0.31 ± 0.46 (SD) per 10 m transect on 38 reef-crest sites and 1.58 ± 1.29 colonies per 10 m transect on 30 reef-front sites. Colonies with partial mortality were far more frequent than those with no partial mortality which only occurred in the size class less than 100 cm (Alcolado *et al.,* 2010).

Population trends are available from a number of studies. In a study of sites inside and outside a marine protected area in Belize, *O. annularis* cover declined significantly over a ten year period (1998/99 to 2008/09) (Huntington *et al.,* 2011). In a study of ten sites inside and outside of a marine reserve in the Exuma Cays, Bahamas, cover of *O. annularis* increased between 2004 and 2007 inside the protected area and decreased outside the protected area (Mumby and Harborne, 2010). Between 1996 and 2006, *O. annularis* declined in cover by 37 percent in permanent monitoring stations in the Florida Keys (Waddell and Clarke, 2008), and, cover of *O. annularis* in permanent monitoring stations between 1996 and 1998 on a reef in the upper Florida Keys declined 71 percent (Porter *et al.,* 2001).

Orbicella annularis is the third most abundant coral by percent cover in permanent monitoring stations in the U.S. Virgin Islands. A decline of 60 percent was observed between 2001 and 2012 primarily due to bleaching in 2005. However, most of the mortality was partial mortality, and colony density in monitoring stations did not change (Smith, 2013).

At nine sites off Mona and Desecheo Islands, Puerto Rico, no species extirpations were noted at any site over 10 years of monitoring between 1995 and 2008. However, *O. faveolata* and *O. annularis* sustained the largest losses with the number of colonies of *O. annularis* decreasing by 19 and 20 percent at Mona and Desecheo Islands, respectively. In 1998, eight percent of all corals at six sites surveyed off Mona Island were *O. annularis* colonies, dipping to approximately 6 percent in 2008. At Desecheo Island, 14 percent of all coral colonies were *O. annularis* in 2000 and 13 percent in 2008 (Bruckner and Hill, 2009).

Surveys of a degraded and a less degraded site in a marine protected area in Cartagena, Colombia, revealed that while large, old colonies of *O. annularis* were present, colonies had experienced high partial mortality that caused high fission rates and a dominance of small, non-reproductive ramets. Ramets that were non-reproductive or less fertile (less than 46 cm^2) accounted for 72 percent and 55 percent of the population at the surveyed sites, and only one percent and six percent of the ramets at the sites were large enough (200 cm^2) to be fully reproductive. In addition to the small ramet size, the lack of sexual recruitment led the authors to conclude that both populations were in decline, especially at the more degraded reef where mortality was higher and ramets were smaller, as individual colonies seemed to be growing old without being replaced (Alvarado-Chacon and Acosta, 2009).

In a survey of 185 sites in five countries (Bahamas, Bonaire, Cayman Islands, Puerto Rico, and St. Kitts and Nevis) in 2010 to 2011, size of *O. annularis* and *O. franksi* colonies was significantly less than *O. faveolata.* Total mean partial mortality of *O. annularis* colonies at all sites was 40 percent. Overall, the total area occupied by live *O. annularis* declined by a mean of 51 percent, and mean colony size declined from 1927 cm^2 to 939 cm^2. There was a 211 percent increase in small tissue remnants less than 500 cm^2, while the proportion of completely live large (1,500–30,000 cm^2) colonies declined. *Orbicella annularis* colonies in Puerto Rico were much larger with large amounts of dead sections. In contrast, colonies in Bonaire were also large with greater amounts of live tissue. The presence of dead sections was attributed primarily to outbreaks of white plague and yellow band disease, which emerged as corals began recovering from mass bleaching events. This was followed by increased predation and removal of live tissue by damselfish algal lawns (Bruckner, 2012a).

Hughes and Tanner (2000) documented the demographics of *O. annularis* in Jamaica from 1977 to 1993. At the beginning of the study, 86 colonies were present within monitored stations. The number of colonies increased 40 to 42 percent between 1986 and 1987 due to fission (occurring at the same time as a decline in cover) and subsequently declined steadily to 40 colonies by 1993. Rates of survival, population growth, and recruitment declined over time, and the size structure became increasingly dominated by smaller size classes (Hughes and Tanner, 2000). Mortality increased sharply between 1990 and 1993 due to the presence of smaller, more vulnerable colonies formed by partial mortality of larger colonies (Hughes, 1996). The persistence of large colonies had the greatest effect on population growth, and simulations indicated that the levels of recruitment needed to maintain population levels at 1977 levels increased sharply over time (Hughes and Tanner, 2000). Simulations with no sexual recruitment indicated that the population dynamics in the most recent period (1987 to 1993) forecasted a population of zero within approximately 25 years. Simulation using the population dynamics observed between 1982 to 1987 would result in a slower decline while the dynamics observed between 1977 and 1982 would result in population growth (Hughes and Tanner, 2000).

Cover of *O. annularis* at Yawzi Point, St. John, U.S. Virgin Islands declined from 41 percent in 1988 to approximately 12 percent by 2003 with a rapid decline beginning with the aftermath of Hurricane Hugo in 1989 and continuing between 1994 and 1999 during a time of two hurricanes (1995) and a year of unusually high sea temperature (1998), and remaining statistically unchanged between 1999 and 2003. Colony abundances declined from 47 to 20 colonies per m^2 between 1988 and 2003, due mostly to the death and fission of medium to large colonies ($\geq$151 cm^2). Meanwhile, the population size class structure shifted between 1988 and 2003 to a higher proportion of smaller colonies in 2003 (60 percent less than 50 cm^2 in 1988 versus 70 percent in 2003) and lower proportion of large colonies (6 percent greater than 250 cm^2 in 1988 versus 3 percent in 2003). The changes in population size structure indicated a population decline coincident with the period of apparent stable coral cover. Population modeling forecasts the 1988 size structure would not be reestablished by recruitment and a strong likelihood of extirpation of *O. annularis* at this site within 50 years (Edmunds and Elahi, 2007).

Orbicella annularis colonies were monitored between 2001 and 2009 at Culebra Island, Puerto Rico. The population was in demographic equilibrium (high rates of survival and stasis) before the 2005 bleaching event but suffered a significant decline in growth rate (mortality and shrinkage) for two consecutive years after the bleaching event. Partial tissue mortality due to bleaching caused dramatic colony fragmentation that resulted in a population made up almost entirely of small colonies by 2007 (97 percent were less than 50 cm^2). Three years after the bleaching event, the population stabilized at a number of colonies reduced by about half, with fewer medium to large size colonies and more smaller colonies (Hernández-Pacheco *et al.,* 2011).

All information on *O. annularis'* abundance and population trends can be summarized as follows. Historically, *O. annularis* was considered to be one of the most abundant species in the Caribbean (Weil and Knowlton, 1994). Percent cover has declined between 37 to 90 percent over the past several decades at reefs at Jamaica, Belize, Florida Keys, Bahamas, Bonaire, Cayman Islands, Curacao, Puerto Rico, U.S. Virgin Islands, and St. Kitts and Nevis. Based on population estimates, there are at least tens of millions of *O. annularis* colonies present in the Florida Keys and Dry Tortugas combined. Absolute abundance is higher than the estimate from these two locations given the presence of this species in many other locations throughout its range. *Orbicella annularis* remains common in occurrence. Abundance has decreased in some areas between 19 to 57 percent, and shifts to smaller size classes have occurred in locations such as Jamaica, Colombia, Bahamas, Bonaire, Cayman Islands, Puerto Rico, U.S. Virgin Islands, and St. Kitts and Nevis. At some reefs, a large proportion of the population is comprised of non-fertile or less-reproductive size classes. Several population projections indicate population decline in the future is likely at specific sites, and local extirpation is possible within 25 to 50 years at conditions of high mortality, low recruitment, and slow growth rates. We conclude that while substantial population decline has occurred in *O. annularis,* it is still common throughout the Caribbean and remains one of the dominant species numbering at least in the tens of millions of colonies. Additionally, as discussed in the genus section, we conclude that the buffering capacity of *O. annularis'* life history strategy that has allowed it to remain abundant has been reduced by the recent population declines and amounts of partial mortality, particularly in large colonies.

Other Biological Information

The SRR and SIR provided the following information on *O. annularis'* life history. *Orbicella annularis* is reported to have slightly smaller egg size and potentially smaller size/age at first reproduction that the other two species of the *Orbicella genus.*

The public comments did not provide new or supplemental information on the life history of *O. annularis.* Supplemental information we found on *O. annularis'* life history includes the following. The reported growth rate of *O. annularis* is 0.4 to 1.2 cm per year (Cruz-Piñón *et al.,* 2003; Tomascik, 1990). Darling *et al.* (2012) performed a biological trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Orbicella annularis* was classified as a ''stress-tolerant'' species, thus likely less vulnerable to environmental stress.

The SRR and SIR provided the following other biological information for *O. annularis.* Eight percent of *O. annularis* genotypes across three sites in Belize were clones. Low tissue biomass can render specific colonies of *O. annularis* susceptible to mortality from stress events, such as bleaching or disease. This suggests that differential mortality among individuals, species, and reefs from stress events such as bleaching or disease may be at least partially a function of differential colony biomass (indicating overall coral health) as opposed to genetic or physiologic differences among corals or their symbionts.

In a 2010 cold-water event that affected south Florida, mortality of *O. annularis* was higher than any other coral species in surveys from Martin County to the lower Florida Keys. Average partial mortality was 56 percent during the cold-water event compared to 0.3 percent from 2005 to 2009. Surveys at a Florida Keys inshore patch reef, which experienced temperatures less than 18 degrees C for 11 days, revealed *O. annularis* was one of the most susceptible coral species with all colonies experiencing total colony mortality.

The public comments did not provide new or supplemental biological information on *O. annularis.*

Supplemental biological information we found includes the following. Of 117 colonies of *O. annularis* observed to spawn at a reef site off Bocas del Toro, Panama, there were 21 distinct genotypes, meaning that 82 percent of the colonies were clones (Levitan *et al.,* 2011). Individuals within a genotype spawned more synchronously than individuals of different genotypes. Colonies nearby spawned more synchronously regardless of genotype, out to about 5 m. When colonies were farther away, spawning was random.

Of 137 *O. annularis* colonies sampled in Honduras, 118 were distinct genotypes, meaning that 14 percent of the colonies were clones. Over 90 percent of genotypes were represented by a single colony, and 8 percent of the genotypes were represented by two or three colonies. One genotype had 14 colonies. Distance between clones ranged between 0.15 m to 6.94 m (Foster *et al.,* 2007).

Genetic sampling of 698 *O. annularis* colonies from 18 reefs within five countries in the Caribbean (Belize, Bahamas, Columbia, Curacao, and Honduras) revealed 466 distinct genotypes (approximately 33 percent clones). Genotypic diversity varied across the species' range from genetically diverse populations in Colombia, where every colony was unique, to genetically depauperate populations in Belize and Curacao, where a few genetic clones dominated. The contribution of clones to the local abundance of *O. annularis* increased in areas with greater hurricane frequency. Sites with higher genotypic diversity were dominated by larger colonies, and sites that experienced more frequent hurricanes were composed of smaller colonies than sites with less frequent hurricanes (Foster *et al.,* 2013).

Tissue samples of 1,424 *O. annularis* colonies at 26 reefs in 16 regions of the Caribbean (Bahamas, Cuba, Dominican Republic, Puerto Rico, British Virgin Islands, Dominica, Barbados, Tobago, Venezuela, Netherlands Antilles, Colombia, Nicaragua, Jamaica, Cayman Islands, Belize, and Honduras) produced 943 distinct genotypes (34 percent clones). Three coarse population clusters of *O. annularis* were detected: eastern (Lesser Antilles, Venezuela, and Netherlands Antilles), western (Bahamas, Cuba, Belize, and Cayman Islands), and central (Jamaica, Honduras, Nicaragua, Colombia, Puerto Rico, British Virgin Islands, and Dominican Republic). No barrier to gene flow based on absolute geographic distance was apparent (Foster *et al.,* 2012).

In a study of symbiont composition of repeatedly sampled colonies of six species in the Bahamas and the Florida Keys in 1998 and 2000 to 2004, major changes in symbiont dominance with time were observed in *O. annularis* and *O. franksi* at certain reefs in the Florida Keys. Some colonies of *O. annularis* and *O. franksi* exhibited shifts in their associations attributed to recovery from the stresses of the 1997–1998 bleaching event. Most transitions in symbiont identity ended in 2002, three to five years after the 1997–98 bleaching event (Thornhill *et al.,* 2006).

All other biological information can be summarized as follows. Asexual fission and partial mortality can lead to multiple ramets. The percentage of unique genotypes is variable by location and is reported to range between 18 and 86 percent (14 to 82 percent are clones). Colonies in areas with higher disturbance from hurricanes tend to have more clonality. Genetic data indicate that there is some population structure in the eastern, central, and western Caribbean with population connectivity within areas but not across. Although *O. annularis* is still abundant, it may exhibit high clonality in some locations.

Susceptibility to Threats

The threat susceptibility information from the SRR and SIR was interpreted in the proposed rule for *O. annularis'* vulnerabilities to threats as follows: High vulnerability to ocean warming, disease, acidification, sedimentation, and nutrient enrichment; moderate vulnerability to the trophic effects of fishing; and low vulnerability to sea level rise, predation, and collection and trade.

The SRR and SIR provided the following information on the susceptibility of *O. annularis* to ocean warming. Simulation models using demographic data collected in Puerto Rico over nine years straddling the 2005 bleaching forecasted extinction of the population within 100 years at a bleaching frequency of once every five to ten years.

The public comments did not provide new or supplemental information on the susceptibility of *O. annularis* to ocean warming. Supplemental information we found on the susceptibility of *O. annularis* to ocean warming includes the following. Surveys from 19 locations throughout the Caribbean indicated the bleaching event of 1995–96 was most extensive in the central and western Caribbean but only slight in the Lesser Antilles and Bermuda. Mortality of *O. annularis* from bleaching ranged from 2 to 30 percent at eight locations six months after the onset of bleaching (Alcolado *et al.,* 2001).

Eight of 15 colonies of *O. annularis* monitored in Jamaica from 1994 to 1997 bleached in 1995. Bleaching affected polyp tissue depth, skeletal extension rate, reproduction, and density band formation, but the rate of recovery of each of these characteristics varied. Tissue depth recovered within 4 to 8 weeks after normal color returned, and growth rates returned to pre-bleaching levels once color and tissue depth returned. However, one year post bleaching, reproductive failure occurred in severely bleached colonies (bleached for 4 months and pale for an additional 3 months), and colonies that bleached mildly (bleached for 2 months with pale color for an additional 1 to 3 months) experienced reduced reproduction. Reproductive output of bleached colonies continued to be reduced two years after bleaching (Mendes and Woodley, 2002).

Stratified random surveys on back-reefs and fore-reefs between one and 30 m depth off Puerto Rico (Mona and Desecho Islands, La Parguera, Mayaguez, Boqueron, and Rincon) in 2005 and 2006 revealed severe bleaching in *O. annularis* with greater than 95 percent of colonies bleached (Waddell and Clarke, 2008). Surveys from 2005 to 2007 along the Florida reef tract from Martin County to the lower Florida Keys indicated that *O. annularis* had the seventh highest bleaching prevalence out of 30 species observed (Wagner *et al.,* 2010). During a 2009 bleaching event on Little Cayman, of the ten coral species that bleached, *O. annularis* had the second highest bleaching prevalence with approximately 45 percent of colonies bleached (van Hooidonk *et al.,* 2012).

Surveys at Culebra Island, Puerto Rico revealed extensive bleaching in 2005 with all of the *O. annularis* colonies in monitored transects bleached, and many of the surviving colonies remained pale in color after a year. Cover of *O. annularis* was reduced from 28 percent prior to the bleaching event in 2005 to 8 percent in 2009 (Hernández-Pacheco *et al.,* 2011).

In Barbados, the prevalence and abundance of the zooxanthellae *Symbiodinium trenchi* (D1a) increased in colonies of *O. annularis* in the weeks leading up to and during the 2005 bleaching event, and disproportionately dominated *O. annularis* colonies that did not bleach. In the 2-year period following the bleaching event, *S. trenchi* was displaced by other strains of *Symbiodinium* that were more competitive under less stressful conditions. The authors concluded that

it was unclear whether the rise and fall of *S. trenchi* was ecologically beneficial or whether its increased prevalence was an indicator of weakening coral health (LaJeunesse *et al.,* 2009).

Across the U.S. Virgin Islands, average bleaching of *O. annularis* was 66 percent, and paling was 16 percent, during the 2005 bleaching event. Disease prevalence of *O. annularis* was 5 percent after the 2005 bleaching. In the milder 2010 bleaching event, 58 percent of *O. annularis* colonies bleached, and 28 percent of *the* colonies paled. No *O. annularis* colonies suffered total mortality, but percent cover decreased from the 2.5 percent cover in 2005 before bleaching to about one percent in 2010. There was a reduction in the proportion of larger sized colonies and an increase in the proportion of smaller sized colonies due to fission of larger colonies. The authors concluded that the susceptibility to disease increased the impact of bleaching, making *O. annularis* less tolerant overall to ocean warming (Smith *et al.,* 2013b).

All sources of information are used to describe *O. annularis'* susceptibility to ocean warming as follows. *Orbicella annularis* is highly susceptible to bleaching with 45 to 100 percent of colonies observed to bleach. Reported mortality from bleaching ranges from two to 71 percent. Recovery after bleaching is slow with paled colonies observed for up to a year. Reproductive failure can occur a year after bleaching, and reduced reproduction has been observed two years post bleaching. There is indication that symbiont shuffling can occur prior to, during, and after bleaching events and result in bleaching resistance in individual colonies. We conclude that *O. annularis* is highly susceptible to ocean warming.

The SRR and SIR did not provide any species-specific information on the susceptibility of *O. annularis* to acidification, and the public comments did not provide new or supplemental information on its susceptibility to this threat. We did not find any new or supplemental information on the susceptibility of *O. annularis* to acidification. Although there is no species-specific information on the susceptibility of *O. annularis* to ocean acidification, genus information indicates the species complex has reduced growth and fertilization success under acidic conditions. Thus, we conclude *O. annularis* likely has high susceptibility to ocean acidification.

The SRR and SIR did not provide any species-specific information on the susceptibility of *O. annularis* to disease. The public comments did not provide new or supplemental information on the susceptibility of *O. annularis* to disease. Supplemental information we found on the susceptibility of *O. annularis* to disease confirms the information on the *Orbicella* species complex and includes the following. Surveys at five sites along the west coast of Dominica between 2000 and 2002 revealed *O. annularis* was one of the species most susceptible to disease. Of the 12 species infected by white plague in 2000, *O. annularis* ranked third highest in disease prevalence (14.1 percent of infected colonies were *O. annularis*). It ranked second in 2001 out of 14 species (20.3 percent) and third in 2002 out of 13 species (12.7 percent). Although only one colony experienced total colony mortality, *O. annularis* had the third highest amount of tissue loss in the three years combined (11,717 cm^2). Black band disease affected *O. annularis* in 2000 but not in any of the other survey years (Borger and Steiner, 2005).

In a 1998 outbreak of white plague in St. Lucia, three percent of *O. annularis* were affected, which was the lowest prevalence of disease of six species studied (Nugues, 2002). In surveys after the 2010 bleaching event and the passage of a hurricane, 93 percent of diseased colonies (111 of 119 colonies) surveyed in radial transects in Brewers Bay, U.S. Virgin Islands were *O. annularis* (Brandt *et al.,* 2013). Yellow band disease in *O. annularis* increased in prevalence between 1999 and 2004 on reefs near La Parguera and Desecheo and Mona Islands, Puerto Rico (Waddell, 2005).

Disease surveys conducted between August and December 1999 at 19 reef sites from six geographic areas across the wider Caribbean (Bermuda, Puerto Rico, Bonaire, Venezuela, Colombia, and Jamaica) revealed that *O. annularis* showed the highest incidence of disease at 5.5 to 12.6 percent across geographic locations. Yellow band disease showed higher incidences in Bonaire and Venezuela where a high proportion of recently dead ramets of *O. annularis* that most probably died from the disease were observed (Weil *et al.,* 2002).

In Curacao, colonies of *O. annularis* infected with yellow band disease lost 90 percent of their tissue between 1997 and 2005. Only the unaffected parts of colonies continued to grow, and only the smallest lesions healed. Partial mortality was higher in 2005 (average of 40 percent) than in 1998. Outbreaks of white plague occurred in 2001 and 2005 and infected *O. faveolata* and *O. annularis* with the highest frequency (Bruckner and Bruckner, 2006a).

All sources of information are used to describe *O. annularis'* susceptibility to disease as follows. Most studies report *O. annularis* as among the species with the highest disease prevalence. Disease can cause extensive loss in coral cover, high levels of partial colony mortality, and changes in the relative proportions of smaller and larger colonies, particularly when outbreaks occur after bleaching events. Thus, we conclude that *O. annularis* is highly susceptible to disease.

The SRR and SIR provided the following information on the susceptibility of *O. annularis* to the trophic effects of fishing. Interactions between *O. annularis* and four types of benthic algae (encrusting calcified red algae, fleshy brown macroalgae, upright calcareous green algae, and a mixed assemblage of turf algae) indicate that each alga exerts its own characteristic suite of effects on the coral holobiont, and that micro-scale dynamics have the potential to drive changes in reef community composition. Negative impacts spanned the range from micro-scale changes in microbial communities and oxygen drawdown to colony-scale effects such as damage to adjacent polyps and lowered fecundity of the adjacent colony. The public comments did not provide new or supplemental information on the susceptibility of *O. annularis* to the trophic effects of fishing, and we did not find any new or supplemental information.

All sources of information are used to describe *O. annularis'* susceptibility to the trophic effects of fishing as follows. Due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, competition with algae can adversely affect coral recruitment. In addition, competition with algae can lead to micro-scale to colony-level negative impacts to *O. annularis.* Thus, we conclude that *O. annularis* has some susceptibility to the trophic effects of fishing. The available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR did not provide species-specific information on the susceptibility of *O. annularis* to sedimentation, and the public comments did not provide new or supplemental information on its susceptibility to this threat. Supplemental information we found confirms the information on the susceptibility of the *Orbicella* species complex to sedimentation and includes the following. In St. Lucia, rates of partial mortality of *O. annularis* and *O. faveolata* were higher close to river

mouths where sediments were deposited than they were farther from the river mouths, indicating sensitivity of these two species to sedimentation (Nugues and Roberts, 2003). Additionally, at five study sites in Puerto Rico, the cover of *O. annularis* decreased significantly with a high content of terrigenous sediments (Torres and Morelock, 2002).

All sources of information are used to describe *O. annularis'* susceptibility to sedimentation as follows. Sedimentation can cause partial mortality and decreased coral cover of *O. annularis.* In addition, genus information indicates sedimentation negatively affects primary production, growth rates, calcification, colony size, and abundance. Therefore, we conclude that *O. annularis* has high susceptibility to sedimentation.

The SRR, SIR, and public comments do not provide information on the susceptibility of *O. annularis* to nutrient enrichment. Supplemental information we found on the susceptibility of *O. annularis* to nutrient enrichment includes the following. Field experiments indicate that nutrient enrichment significantly increases yellow band disease severity in *O. annularis* and *O. franksi* through increased tissue loss (Bruno *et al.,* 2003). In laboratory experiments, dissolved organic carbon caused significantly higher mortality of *O. annularis* after 30 days of exposure compared to controls while nutrients (phosphate, nitrate, and ammonia) did not (Kline *et al.,* 2006; Kuntz *et al.,* 2005). Dissolved organic carbon levels that resulted in significantly higher mortality compared to controls were 12.5 mg per L glucose, and 25 mg per L lactose, starch, galactose, and glucose, which were all levels reported for impacted reefs (Kline *et al.,* 2006; Kuntz *et al.,* 2005).

All sources of information are used to describe *O. annularis'* susceptibility to nutrient enrichment as follows. Elevated nutrients cause increased disease severity in *O. annularis.* Genus level information indicates elevated nutrients also cause reduced growth rates and lowered recruitment. Therefore, we conclude that *O. annularis* has high susceptibility to nutrients.

The SRR and SIR do not provide species-specific information on the susceptibility of *O. annularis* to predation. Likewise, the public comments do not provide information on the susceptibility of *O. annularis* to predation. Supplemental information we found on the susceptibility of *O. annularis* to predation includes the following. Predation by the corallivorous snail *C. abbreviata* was present on 2.5 percent of *O. annularis* colonies surveyed in the Florida Keys in 2012 (Miller *et al.,* 2013). Parrotfish consume *O. annularis* and *O. faveolata* more intensively than other coral species, but tissue regeneration capabilities appear to be high enough to counterbalance loss from predation (Mumby, 2009).

All sources of information are used to describe *O. annularis'* susceptibility to predation as follows. *Orbicella annularis* is affected by a number of predators, but losses appear to be minimal. We conclude that *O. annularis* has low susceptibility to predation.

The SRR and SIR did not provide information on the effects of sea level rise on *O. annularis.* The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *O. annularis'* susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *O. annularis* has some susceptibility to sea level rise, but the available information does not support a more precise description of susceptibility to this threat.

The SRR and SIR did not provide species-specific information on the susceptibility of *O. annularis* to collection and trade, and the public comments did not provide new or supplemental information on its susceptibility to this threat. Supplemental information we found confirms the information in the SRR and SIR that collection and trade is not a significant threat for the *Orbicella* species complex. Over the last decade, collection and trade of this species has been primarily for scientific research rather than commercial purposes. Annual gross exports for collection and trade of *O. annularis* between 2000 and 2012 averaged 1,178 specimens (data available at *http://trade.cites.org*). Thus, we conclude that *O. annularis* has a low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanism or conservation efforts for *O. annularis.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *O. annularis* occurs in nine Atlantic ecoregions that encompass 26 kingdom's and countries' EEZs. The 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Caribbean Territories and possibly Bermuda), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *O. annularis,* described first as a percentage of the above kingdoms and countries that utilize them to any degree, and second as the percentage of those kingdoms and countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *O. annularis* are reef fishing regulations and area management for protection and conservation. However, half of the reef fishing regulations are limited in scope and may not provide substantial protection for the species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *O. annularis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the extinction risk for *O. annularis* include very low productivity (growth and recruitment), documented dramatic declines in abundance, restriction to the degraded reefs of the wider Caribbean region, and preferential occurrence in shallow habitats (yielding potentially greater exposure to surface-based threats.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information,

described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *O. annularis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. The species has undergone major declines mostly due to warming-induced bleaching and disease. Several population projections indicate population decline in the future is likely at specific sites and that local extirpation is possible within 25 to 50 years at conditions of high mortality, low recruitment, and slow growth rates. There is evidence of synergistic effects of threats for this species including disease outbreaks following bleaching events and increased disease severity with nutrient enrichment. *Orbicella annularis* is highly susceptible to a number of threats, and cumulative effects of multiple threats have likely contributed to its decline and exacerbate vulnerability to extinction. Despite high declines, the species is still common and remains one of the most abundant species on Caribbean reefs. Its life history characteristics of large colony size and long life span have enabled it to remain relatively persistent despite slow growth and low recruitment rates, thus moderating vulnerability to extinction. However, the buffering capacity of these life history characteristics is expected to decrease as colonies shift to smaller size classes as has been observed in locations in its range. Its absolute population abundance has been estimated as at least tens of millions of colonies in the Florida Keys and Dry Tortugas combined and is higher than the estimate from these two locations due to the occurrence of the species in many other areas throughout its range. Despite the large number of islands and environments that are included in the species' range, geographic distribution in the highly disturbed Caribbean exacerbates vulnerability to extinction over the foreseeable future because *O. annularis* is limited to an area with high, localized human impacts and predicted increasing threats. *Orbicella annularis* occurs in most reef habitats 0.5 to 20 m in depth which moderates vulnerability to extinction over the foreseeable future because the species occurs in numerous types of reef environments that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance and life history characteristics combined with spatial variability in ocean warming and acidification across the species' range, moderate vulnerability to extinction because the threats are non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *O. annularis* was proposed for listing as endangered because of: High vulnerability to ocean warming (E) disease (C), and ocean acidification (E); high vulnerability to sedimentation (A and E) and nutrient over-enrichment (A and E); decreasing trend in abundance (E); low relative recruitment rate (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); restriction to the Caribbean; and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *O. annularis* from endangered to threatened. We made this determination based on a more species-specific and holistic approach, including consideration of the buffering capacity of this species' spatial and demographic traits, and the best available information above on *O. annularis'* spatial structure, demography, threat susceptibilities, and management. The combination of these factors indicates that *O. annularis* is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Orbicella annularis* is susceptible to ocean warming (ESA Factor E), disease (C), sedimentation (A, E), nutrients (A, E), and ocean acidification (E) and susceptible to trophic effects of fishing (A). These threats are expected to continue and increase into the future. In addition, the species is at heightened extinction risk due to inadequate existing regulatory mechanisms to address global threats (D);

(2) *Orbicella* is geographically located in the highly disturbed Caribbean where localized human impacts are high and threats are predicted to increase as described in the Threats Evaluation section. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future;

(3) *Orbicella annularis* has undergone declines in abundance and percent cover over the past two decades;

(4) *Orbicella annularis'* slow growth rate and low sexual recruitment limit its capacity for recovery from threat-induced mortality events throughout its range over the foreseeable future. Additionally, shifts to smaller size classes via fission and partial mortality of older, larger colonies, have reduced the buffering capacity of *O. annularis'* life history strategy; and

(5) Several population projections and simulations predict continued population declines and local extirpation at specific sites within the foreseeable future.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range, and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *O. annularis'* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *Orbicella annularis'* distribution within the Caribbean increases its risk of exposure to threats as described above, its habitat includes most reef environments in water depths ranging from 0.5 to 20 m. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments will experience highly variable thermal regimes and ocean chemistry on local and regional scales at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species;

(2) Although *O. annularis'* abundance has declined, it still has a common

occurrence and remains one of the most dominant corals in the Caribbean. Its absolute abundance is at least tens of millions of colonies based on estimates from two locations. Absolute abundance is higher than estimates from these locations since *it* occurs in many other locations throughout its range. This absolute abundance allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events; and

(3) Some evidence shows that symbiont shuffling can occur prior to, during, and after bleaching events and result in bleaching resistance in individual colonies. This indicates *O. annularis* may have some buffering capacity against warming-induced bleaching.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section and thus does not warrant listing as endangered at this time.

Range-wide, multitudes of conservation efforts are already broadly employed that are likely benefiting *O. annularis.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species' status to the point at which listing is not warranted.

Genus Acropora (Caribbean)

Acropora is the only genus considered in this rule that has species from both the Caribbean and the Indo-Pacific. Genus-level information for the Indo-Pacific species is described later under the section heading Genus *Acropora* (Indo-Pacific). Colonies in the Caribbean are all branching. There are over 300 nominal species in the genus *Acropora,* but in the Caribbean, there are only two species and one hybrid. *Acropora cervicornis* and *A. palmata* can interbreed to form the hybrid *A. prolifera* (Brainard *et al.,* 2011). *Acropora cervicornis* shows genetic evidence of introgression or back-crossing with the hybrid *A. prolifera* while *A. palmata* does not (Brainard *et al.,* 2011). The reason may be that *A. palmata* eggs are more resistant to fertilization in comparison to *A. cervicornis* eggs, as evidenced by an order of magnitude higher sperm needed to maximize conspecific fertilization, lower rates of heterospecific fertilization, and reduced viability after four hours (Fogarty *et al.,* 2012c).

Caribbean acroporiids are easily distinguishable and heavily studied. Therefore, this final rule does not provide an exhaustive discussion of the spatial, demographic, and threat vulnerabilities at the genus level. That information is described below for each species.

Acropora cervicornis

Introduction

Acropora cervicornis is characterized by antler-like colonies with straight or slightly curved, cylindrical branches. The diameter of branches ranges from 0.25 to 5 cm (Lirman *et al.,* 2010a), and linear branch growth rates have been reported to range between 3 and 11.5 cm per year (*Acropora* Biological Review Team, 2005). The species can exist as isolated branches, individual colonies up to about 1.5 m diameter, and thickets comprised of multiple colonies that are difficult to distinguish (*Acropora* Biological Review Team, 2005).

Spatial Information

Information on *A. cervicornis'* distribution, habitat, and depth range that we considered in the proposed rule includes the following. *Acropora cervicornis* is distributed throughout the Caribbean, in the southwestern Gulf of Mexico, and in the western Atlantic. The fossil record indicates that during the Holocene, *A. cervicornis* was present as far north as Palm Beach County in southeast Florida (Lighty *et al.,* 1978), which is also the northern extent of its current distribution (Goldberg, 1973).

Acropora cervicornis naturally occurs on spur and groove, bank reef, patch reef, and transitional reef habitats, as well as on limestone ridges, terraces, and hardbottom habitats (Cairns, 1982; Davis, 1982; Gilmore and Hall, 1976; Goldberg, 1973; Jaap, 1984; Miller *et al.,* 2008; Wheaton and Jaap, 1988). It commonly grows in water ranging from five to 20 m in depth and has rarely been found to 60 m (Davis, 1982; Jaap, 1984; Jaap *et al.,* 1989; Schuhmacher and Zibrowius, 1985; Wheaton and Jaap, 1988). At the northern extent of its range, it grows in deeper water (16 to 30 m; Goldberg, 1973). Historically, staghorn coral was one of the primary constructors of mid-depth (10 to 15 m) reef terraces in the western Caribbean, including Jamaica, the Cayman Islands, Belize, and some reefs along the eastern Yucatan peninsula (Adey, 1978). In the Florida Keys, *A. cervicornis* occurs in various habitats but is most prevalent on patch reefs as opposed to their former abundance in deeper fore-reef habitats (Miller *et al.,* 2008). There is no evidence of range constriction, though loss of *A. cervicornis* at the reef level has occurred (*Acropora* Biological Review Team, 2005).

The public comments did not provide new or supplemental information on *A. cervicornis'* habitat or depth range. The public comments provided the following supplemental information on the distribution of *A. cervicornis.* Precht and Aronson (2004) postulate that coincident with climate warming, *A. cervicornis* only recently re-occupied its historic range after contracting to south of Miami, Florida during the late Holocene. They based this idea on the presence of large thickets off Ft. Lauderdale, Florida which were discovered in 1998 and had not been reported in the 1970s or 1980s (Precht and Aronson, 2004). However, because the presence of *A. cervicornis* in Palm Beach County, north of Ft. Lauderdale, was reported in the early 1970s (though no thicket formation was reported; Goldberg, 1973), there is uncertainty associated with whether these thickets were present prior to their discovery or if they recently appeared coincident with warming.

We did not find any new or supplemental information on habitat or depth range. Supplemental information we found on *A. cervicornis'* distribution is consistent with information considered in the proposed rule and includes the following. Veron (2014) confirms the presence of *A. cervicornis* in seven out of a potential 11 ecoregions in the western Atlantic and greater Caribbean that are known to contain corals. The four ecoregions in which it is not found are the Flower Garden Banks and off the coasts of Bermuda, Brazil, and the southeast U.S. north of south Florida. The proportion of reefs with *A. cervicornis* present decreased dramatically after the Caribbean-wide mass mortality in the 1970s and 1980s, indicating the spatial structure of the species has been affected by extirpation from many localized areas throughout its range (Jackson *et al.,* 2014).

Demographic Information

Information on *A. cervicornis'* abundance and population trends that we considered in the proposed rule includes the following. *Acropora cervicornis* has been described as sometimes common (Veron, 2000) and uncommon (Carpenter *et al.,* 2008). *Acropora cervicornis* historically was one of the dominant species on most Caribbean reefs, forming large, monotypic thickets and giving rise to the nominal distinct zone in classical descriptions of Caribbean reef morphology (Goreau, 1959). Massive, Caribbean-wide mortality, apparently primarily from white band disease (Aronson and Precht, 2001), spread throughout the Caribbean in the mid-1970s to mid-1980s and precipitated widespread and radical changes in reef community structure (Brainard *et al.,* 2011). In addition, continuing coral mortality from periodic acute events such as hurricanes, disease outbreaks, and mass bleaching events has added to the decline of *A. cervicornis* (Brainard *et al.,* 2011). In locations where quantitative data are available (Florida, Jamaica, U.S. Virgin Islands, Belize), there was a reduction of approximately 92 to greater than 97 percent between the 1970s and early 2000s (*Acropora* Biological Review Team, 2005).

Fossil evidence from the Dominican Republic indicates that Holocene *A. cervicornis* was capable of thriving for thousands of years under highly variable temperature and salinity conditions and suggests that the recent decline in *A. cervicornis* is anomalous (Greer *et al.,* 2009). Additional fossil evidence from Belize indicates that the recent decline of *A. cervicornis* is without precedent during the late Holocene (Aronson and Precht, 2001). In contrast, two 500 year gaps in the fossil record, around 3 and 4.5 thousand years ago where dated *A. cervicornis* fragments were not observed in samples from the Florida Keys, suggests that the recent decline may not be without precedent (Shinn *et al.,* 2003). However, this study was based on radiocarbon dating of *A. cervicornis* fragments, for which the time of transport and deposition are not known, so there is uncertainty of whether these gaps represent the absence of *A. cervicornis* or variable storm depositional history (Shinn *et al.,* 2003).

Since the 2006 listing of *A. cervicornis* as threatened, continued population declines have occurred in some locations with certain populations of both species decreasing up to an additional 50 percent or more (Colella *et al.,* 2012; Lundgren and Hillis-Starr, 2008; Muller *et al.,* 2008; Rogers and Muller, 2012; Williams *et al.,* 2008).

Public comments provided the following supplemental information on *A. cervicornis'* abundance and population trends. There are some small pockets of remnant robust populations such as in southeast Florida (Vargas-Angel *et al.,* 2003), Honduras (Keck *et al.,* 2005; Riegl *et al.,* 2009), and Dominican Republic (Lirman *et al.,* 2010a). Additionally, Lidz and Zawada (2013) observed 400 colonies of *A. cervicornis* along 70.2 km of transects near Pulaski Shoal in the Dry Tortugas where the species had not been seen since the cold water die-off of the 1970s. Cover of *A. cervicornis* increased on a Jamaican reef from 0.6 percent in 1995 to 10.5 percent in 2004 (Idjadi *et al.,* 2006).

Riegl *et al.* (2009) monitored *A. cervicornis* in photo plots on the fringing reef near Roatan, Honduras from 1996 to 2005. *Acropora cervicornis* cover was 0.42 percent in 1996, declined to 0.14 percent in 1999 after the Caribbean bleaching event in 1998 and mortality from run-off associated with a Category 5 hurricane, and decreased further to 0.09 percent in 2005. *Acropora cervicornis* colony frequency decreased 71 percent between 1997 and 1999. In sharp contrast, offshore banks near Roatan had dense thickets of *A. cervicornis* with 31 percent cover in photo-quadrats in 2005 and appeared to survive the 1998 bleaching event and hurricane, most likely due to bathymetric separation from land and greater flushing. Modeling showed that under undisturbed conditions, retention of the dense *A. cervicornis* stands on the banks off Roatan is likely with a possible increased shift towards dominance by other coral species. However, the authors note that because their data and the literature seem to point to extrinsic factors as driving the decline of *A. cervicornis,* it is unclear what the future may hold for this dense population (Riegl *et al.,* 2009).

Miller *et al.* (2013) extrapolated population abundance of *A. cervicornis* in the Florida Keys and Dry Tortugas from stratified random samples across habitat types. Population estimates of *A. cervicornis* in the Florida Keys were 10.2 ± 4.6 (SE) million colonies in 2005, 6.9 ± 2.4 (SE) million colonies in 2007, and 10.0 ± 3.1 (SE) million colonies in 2012. In the Dry Tortugas population estimates were 0.4 ± 0.4 (SE) million colonies in 2006 and 3.5 ± 2.9 (SE) million colonies in 2008, though the authors note their sampling scheme in the Dry Tortugas was not optimized for *A. cervicornis.* Because these population estimates were based on random sampling, differences in abundance estimates between years may be more likely a function of sampling effort rather than population trends. In both the Florida Keys and Dry Tortugas, most of the population was dominated by small colonies less than 30 cm diameter. In the Florida Keys, partial mortality was highest in 2005, with up to 80 percent mortality observed, and lowest in 2007 with a maximum of 30 percent. In 2012, partial mortality ranged from 20 to 50 percent across most size classes.

Supplemental information we found on *A. cervicornis'* abundance and population trends includes the following. *Acropora cervicornis* was observed in 21 out of 301 stations between 2011 and 2013 in stratified random surveys designed to detect *Acropora* colonies along the south, southeast, southwest, and west coasts of Puerto Rico, and it was observed at an additional 16 sites outside of the surveyed area (García Sais *et al.,* 2013). The largest colony was 60 cm, and density ranged from 1 to 10 colonies per 15 m^2 (García Sais *et al.,* 2013).

While cover of *A. cervicornis* increased from 0.6 percent in 1995 to 10.5 percent in 2004 (Idjadi *et al.,* 2006) and 44 percent in 2005 on a Jamaican reef, it collapsed after the 2005 bleaching event and subsequent disease to less than 0.5 percent in 2006 (Quinn and Kojis 2008). A cold water die-off in the Florida Keys in January 2010 resulted in the complete mortality of all *A. cervicornis* colonies at 45 of the 74 reefs surveyed (61 percent), spanning the lower to upper Florida Keys (Schopmeyer *et al.,* 2012). Walker *et al.* (2012) report increasing size of two thickets (expansion of up to 7.5 times the original size of one of the thickets) monitored off southeast Florida and also noted that cover within monitored plots concurrently decreased by about 50 percent, highlighting the dynamic nature of *A. cervicornis* distribution via fragmentation and re-attachment.

New information we found on population trends includes the following. A report on the status and trends of Caribbean corals over the last century indicates that cover of *A. cervicornis* has remained relatively stable (though much reduced) throughout the region since the large mortality events of the 1970s and 1980s. The frequency of reefs at which *A. cervicornis* was described as the dominant coral has remained stable. The number of reefs with *A. cervicornis* present declined during the 1980s (from approximately 50 to 30 percent of reefs), remained relatively stable through the

1990s, and decreased to approximately 20 percent of the reefs 2000–2004, and approximately 10 percent 2005–2011 (Jackson *et al.,* 2014).

We summarize all sources of information on *A. cervicornis'* abundance and population trends as follows. Based on population estimates, there are at least tens of millions of colonies present in the Florida Keys and Dry Tortugas combined. Absolute abundance is higher than the estimate from these two locations given the presence of this species in many other locations throughout its range. The effective population size is smaller than indicated by abundance estimates due to the tendency for asexual reproduction. There is no evidence of range constriction or extirpation at the island level. However the species is absent at the reef level. Populations appear to consist mostly of isolated colonies or small groups of colonies compared to the vast thickets once prominent throughout its range, with thickets still a prominent feature at only a handful of known locations. Across the Caribbean, percent cover appears to have remained relatively stable since the population crash in the 1980s. Frequency of occurrence has decreased since the 1980s. There are examples of increasing trends in some locations (Dry Tortugas and southeast Florida), but not over larger spatial scales or longer time frames. Population model projections from Honduras at one of the only known-remaining thickets indicate the retention of this dense stand under undisturbed conditions. If refuge populations are able to persist, it is unclear whether they would be able to repopulate nearby reefs as observed sexual recruitment is low. Thus, we conclude that the species has undergone substantial population decline and decreases in the extent of occurrence throughout its range. Percent benthic cover and proportion of reefs where *A. cervicornis* is dominant have remained stable since the mid-1980s and since the listing of the species as threatened in 2006. We also conclude that population abundance is at least tens of millions of colonies, but likely to decrease in the future with increasing threats.

Other Biological Information

Information on *A. cervicornis'* life history that we considered in the proposed rule includes the following. *Acropora cervicornis* is a hermaphroditic broadcast spawning species. The spawning season occurs several nights after the full moon in July, August, or September, but may be split over the course of more than one lunar cycle (Szmant, 1986; Vargas-Angel *et al.,* 2006). The estimated size at sexual maturity is 17 cm branch length, and large colonies produce proportionally more gametes than small colonies (Soong and Lang, 1992). Basal and branch tip tissue is not fertile (Soong and Lang, 1992). Sexual recruitment rates are low, and this species is generally not observed in coral settlement studies. However, laboratory studies have found that certain species of crustose-coralline algae facilitate larval settlement and post-settlement survival (Ritson-Williams *et al.,* 2010).

Reproduction occurs primarily through asexual fragmentation that produces multiple colonies that are genetically identical (Tunnicliffe, 1981). The combination of branching morphology, asexual fragmentation, and fast growth rates can lead to persistence of large areas dominated by *A. cervicornis.*

The public comments did not provide new or supplemental information on *A. cervicornis'* life history. Supplemental information we found on life history includes the following. Darling *et al.* (2012) performed a biological trait-based analysis to categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Acropora cervicornis* was classified as a ''competitive'' species, thus likely more vulnerable to environmental stress.

All information on *A. cervicornis'* life history can be summarized as follows. The combination of rapid skeletal growth rates and frequent asexual reproduction by fragmentation can enable effective competition and can facilitate potential recovery from disturbances when environmental conditions permit. However, low sexual reproduction can lead to reduced genetic diversity and limits the capacity to repopulate sites.

Other biological information on *A. cervicornis* that we considered in the proposed rule includes the following. Vollmer and Palumbi (2007) examined 22 populations of *A. cervicornis* from nine regions in the Caribbean (Panama, Belize, Mexico, Florida, Bahamas, Turks and Caicos, Jamaica, Puerto Rico, and Curaçao) and concluded that populations greater than 500 km apart are genetically differentiated with low gene flow across the greater Caribbean. Fine-scale genetic differences have been detected at reefs separated by as little as 2 km, suggesting that gene flow in *A. cervicornis* may not occur at much smaller spatial scales (Garcia Reyes and Schizas, 2010; Vollmer and Palumbi, 2007). This fine-scale population structure was greater when considering genes of *A. palmata* introgressed in *A. cervicornis* due to back-crossing of the hybrid *A. prolifera* with *A. cervicornis* (Garcia Reyes and Schizas, 2010; Vollmer and Palumbi, 2007).

Populations in Florida and Honduras are genetically distinct from each other and other populations in the U.S. Virgin Islands, Puerto Rico, Bahamas, and Navassa (Baums *et al.,* 2010), indicating little to no larval connectivity. However, some potential connectivity between the U.S. Virgin Islands and Puerto Rico was detected and also between Navassa and the Bahamas (Baums *et al.,* 2010).

Florida populations of *A. cervicornis* have high levels of both genetic diversity and connectivity, with evidence suggesting the western Caribbean has historically been the source of genetic variation for Florida (Hemond and Vollmer, 2010). Colonies of *A. cervicornis* in Florida mostly harbored zooxanthellae Clade A, but colonies from inshore and mid-channel reefs, which experience higher sedimentation and temperature fluctuations than reefs further offshore, had a higher prominence of Clades C and D, revealing the influence of habitat on zooxanthellae associations (Baums *et al.,* 2010).

The public comments did not provide new or supplemental biological information on *A. cervicornis,* and we did not find any new or supplemental biological information. All information on *A. cervicornis'* biology can be summarized as follows. Connectivity over distances of greater than 500 km is limited, and there is evidence of restricted gene flow over much smaller spatial scales. Genetic diversity appears to be relatively high in some areas like the Florida Keys.

Susceptibility to Threats

Information on threat susceptibilities was interpreted in the proposed rule for *A. cervicornis'* vulnerabilities to threats as follows: High vulnerability to ocean warming, disease, acidification, sedimentation, and nutrient enrichment; moderate vulnerability to the trophic effects of fishing and predation; and low vulnerability to sea level rise and collection and trade.

Information on *A. cervicornis'* susceptibility to disease that we considered in the proposed rule includes the following. Disease is believed to be the primary cause of the region-wide decline of *A. cervicornis* beginning in the late 1970s (Aronson and Precht, 2001) and continues to have a large impact on the species. White band disease is generally associated

with the majority of disease-related mortalities, but several other diseases affect *A. cervicornis.* Ritchie and Smith (1995; 1998) described white band disease type II which is linked with a bacterial infection by *Vibrio carchariae* (Ritchie and Smith, 1998), also referred to as *V. charchariae* and *V. harveyi* (Gil-Agudelo *et al.,* 2006). Williams and Miller (2005) reported an outbreak of a transmissible disease that caused rapid tissue loss on *A. cervicornis* in the Florida Keys in 2003. The disease manifested as irregular, multifocal tissue lesions with apparently healthy tissue remaining in between, a description similar to *A. palmata* afflicted with white pox. Additionally ciliate infections have been reported by Croquer *et al.* (2006) at several locations in the Caribbean.

Few studies follow the progression of disease in individual colonies over time, but there are reports of instantaneous levels of disease at various locations. The *Acropora* Biological Review Team (2005) reported that in the 1997 to 2000 AGRRA surveys, at least 6 percent of *A. cervicornis* colonies were diseased, with greater prevalence documented from the Turks and Caicos (21 percent), Cayman Islands (20 percent), U.S. Virgin Islands (13 percent), and Cuba (8 percent). No disease was recorded on *A. cervicornis* in Jamaica, Mexico, Netherlands Antilles, Panama, and Venezuela during the 1997 to 2000 AGRRA surveys (*Acropora* Biological Review Team, 2005). Between 2001 and 2002, disease was detected at all monitored thickets off Ft. Lauderdale, Florida with mortality ranging from 0.1 to 7.5 percent per site and a mean of 1.8 percent of colony surface area affected (Vargas-Angel *et al.,* 2003). Evidence of white band disease was observed on 5.3 percent of *A. cervicornis* colonies in February 2010 at Cabezos del Cayo, Dominican Republic (Lirman *et al.,* 2010a). During a disease outbreak in the Florida Keys in 2003, 72 percent of the 20 tagged *A. cervicornis* colonies were infected; 28 percent of these suffered complete mortality while many more colonies ended up as remnants of live tissue (less than 10 percent of colony alive; Williams and Miller, 2005).

The public comments provided the following supplemental information on the susceptibility of *A. cervicornis* to disease. No disease was detected in stratified random surveys in the Florida Keys in 2007 (Miller *et al.,* 2013). Vollmer and Kline (2008) found that six percent of *A. cervicornis* genotypes (three out of 49) were resistant to white band disease during *in situ* transmission assays in Bocas del Toro, Panama.

Supplemental information we found on the susceptibility of *A. cervicornis* to disease includes the following. In Honduras, diseases were present in 32 percent of colonies (n = 181) monitored annually from 1996 to 2005 (Riegl *et al.,* 2009). Between zero and 30 percent of *A. cervicornis* colonies monitored in the middle Florida Keys were affected by disease from 2011 to 2012 (Lunz, 2013). About five percent were affected by rapid tissue loss during each quarterly monitoring period (Lunz, 2013).

All information on the susceptibility of *A. cervicornis* to disease can be summarized as follows. *Acropora cervicornis* is highly susceptible to disease as evidenced by the mass-mortality event in the 1970s and 1980s. Although disease is both spatially and temporally variable, about five to six percent of *A. cervicornis* colonies appear to be affected by disease at any one time, though incidence of disease has been reported to range from zero to 32 percent and up to 72 percent during an outbreak. There is indication that some colonies may be resistant to white band disease. *Acropora cervicornis* is also susceptible to several diseases including one that causes rapid tissue loss from multi-focal lesions. Because few studies track diseased colonies over time, determining the present-day colony and population level effects of disease is difficult. One study that monitored individual colonies during an outbreak found that disease can be a major cause of both partial and total colony mortality (Williams and Miller, 2005). Thus, we conclude that *A. cervicornis* is highly susceptible to disease.

Information on *A. cervicornis'* susceptibility to ocean warming that we considered in the proposed rule includes the following. *Acropora cervicornis* was one of the most heavily affected species during a 1987 to 1988 bleaching event in the Cayman Islands with 100 percent of colonies bleached on the deep reef terrace (18 to 29 m depth) and 83 percent bleached on the shallow reef terrace (Ghiold and Smith, 1990). In Puerto Rico, about 75 percent of *A. cervicornis* colonies bleached at 12 monitored sites during the 2005 Caribbean bleaching event (Waddell and Clarke, 2008). At Culebra Island, Puerto Rico approximately 90 percent of the *A. cervicornis* colonies had partial or total mortality during and after the 2005 bleaching event, and bleaching stress and mortality are believed to have resulted in the reproductive failure to subsequently spawn in 2006 (Waddell and Clarke, 2008).

Repeat sampling of colonies in the Florida Keys and Bahamas in 1998, and seasonally between March 2000 and August 2004, showed that colonies of *A. cervicornis* were stable with their associations with *Symbiodinium* type A3 but sometimes had mixed symbiosis with *Symbiodinium* type (B1) (Thornhill *et al.,* 2006). The associations with *Symbiodinium* type (B1) were always short-lived (gone by next sampling period) and did not appear to be correlated with seasonal fluctuations or to follow the 1997 to 1998 bleaching event (Thornhill *et al.,* 2006). Most of the mixed symbiosis events were limited to a single colony except for one sampling period in August 2001 when all colonies at one of the Bahamian sites had mixed symbionts.

The public comments did not provide new or supplemental information on the susceptibility of *A. cervicornis* to ocean warming. Supplemental information we found on the susceptibility of *A. cervicornis* to ocean warming includes the following. In Roatan, Honduras, Riegl *et al.* (2009) monitored *A. cervicornis* and found none were bleached fully during the 1998 bleaching event, with the fourth highest partial bleaching frequency, and the highest mortality of 22 species monitored. During the 2005 bleaching event with 17 species observed, only *A. cervicornis* and *A. palmata* bleached 100 percent (all colonies bleached completely white) at two reefs in Jamaica with 90 percent mortality at one site and 10 percent at the other (Quinn and Kojis, 2008).

Van Woesik *et al.* (2012) developed a coral resiliency index based on biological traits and processes to evaluate extinction risk due to bleaching. Evaluations were performed at the genus level with genera separated between the Caribbean and Indo-Pacific. They reported *A. cervicornis* as highly vulnerable to extinction due to bleaching.

All information on the susceptibility of *A. cervicornis* to ocean warming can be summarized as follows. *Acropora cervicornis* is highly susceptible to bleaching in comparison to other coral species, and mortality after bleaching events is variable. Algal symbionts did not shift in *A. cervicornis* after the 1998 bleaching event, indicating the ability of this species to acclimatize to rising temperatures may not occur through this mechanism. Data from Puerto Rico and Jamaica following the 2005 Caribbean bleaching event indicate that temperature anomalies can have a large impact on total and partial mortality and reproductive output. Thus, we conclude that *A. cervicornis* is highly susceptible to ocean warming.

Information on *A. cervicornis'* susceptibility to acidification that we considered in the proposed rule includes the following. Renegar and Riegl (2005) performed laboratory experiments to examine the effect of nutrients and carbon dioxide on *A. cervicornis* growth. They found significantly reduced growth under carbon dioxide levels of 700 to 800 μatm, predicted to occur this century, compared to controls. In addition, when elevated carbon dioxide was combined with increased nitrate and phosphate, growth rates were further reduced. The effect of combined nitrate, phosphate, and carbon dioxide appeared to be antagonistic at lower nutrient concentrations and additive at higher concentrations (compared to those nutrients paired with carbon dioxide separately). All corals in the combined nitrate, phosphate, and carbon dioxide treatment experienced total mortality, indicating the severe stress this combination induced.

The public comments did not provide new or supplemental information on the susceptibility of *A. cervicornis* to acidification. Supplemental information we found on the susceptibility of *A. cervicornis* to acidification includes the following. Enochs *et al.* (2014) examined the effects of carbon dioxide and light intensity on *A. cervicornis.* They found that carbon dioxide levels projected to occur by the end of the century from ocean acidification caused reduced calcification and skeletal density but no change in linear extension, surface area, or volume. High light intensity did not ameliorate reductions in calcification, and the authors concluded that the high light intensity necessary to reach saturation of photosynthesis and calcification in *A. cervicornis* may limit the effectiveness of this potentially protective mechanism.

All information on the susceptibility of *A. cervicornis* to acidification can be summarized as follows. *Acropora cervicornis* is susceptible to acidification through reduced growth, calcification, and skeletal density, and the effects of increased carbon dioxide combined with increased nutrients appear to be much worse than either stressor alone, and caused 100 percent mortality in some combination in one laboratory study. Therefore, we conclude that *A. cervicornis* is highly susceptible to acidification.

There is no species-specific information on the trophic effects of fishing on *A. cervicornis.* However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery, recruitment habitat is limited. Thus, we conclude that *A. cervicornis* has some susceptibility to the trophic effects of fishing due to its low recruitment rates. However, the available information does not support a more precise description of susceptibility to this threat.

All information on *A. cervicornis'* susceptibility to sedimentation that we considered in the proposed rule includes the following. Exposure to drilling mud reduced calcification rates and protein concentrations in *A. cervicornis,* and exposure to equivalent concentrations of kaolin produced no drop in proteins and a lower drop in calcification rate, indicating the toxic effects of drilling mud are not due solely to increases in turbidity (Kendall *et al.,* 1983).

Acropora cervicornis has poor capacity to remove coarser sediments (250–2000 μm) and only slightly more capacity for removing finer sediments (62–250 μm; Hubbard and Pocock, 1972). Water movement (turbulence) and gravity are probably more important in removing sediments from this species than its capabilities of sloughing sediments in still water (Porter, 1987). In field experiments in Puerto Rico, *A. cervicornis* was less sensitive to single applications (200 mg per cm^2, 400 mg per cm^2, and 800 mg per cm^2) of coarse sediment (mean grain size 0.5 mm) than *A. palmata* and *Orbicella annularis,* likely due to morphology that facilitated passive sediment removal, though some bleaching near the base of the colonies did occur (Rogers, 1983).

Lab experiments testing the effects of sedimentation and phosphate on *A. cervicornis* indicated that sediment-clearing rates declined with increased exposure from less than two hours to up to 24 hours after four weeks of treatment. Treatments resulted in degenerative changes to tissue, zooxanthellae, and gonad development and were more severe in sediment and sediment plus phosphate treatments in comparison to controls and phosphate alone (Hodel and Vargas-Angel, 2007).

Acropora cervicornis is sensitive to turbidity because it is highly reliant on sunlight for nutrition (Lewis, 1977; Porter, 1976). Rogers (1979) shaded a 20 m^2 area of reef as a partial simulation of conditions from turbidity and found that *A. cervicornis* was the first species to respond by bleaching. Three weeks after shading was initiated, most colonies of *A. cervicornis* were bleached. After shading was terminated at five weeks, at the sixth week, most branches were dead and covered with algae with growth tips deteriorating or grazed away, but a few branches recovered. After seven weeks, there were more algae on the branches and further disintegration of branch tips.

Fossil material collected from Bocas del Toro, Panama indicated that *A. cervicornis* declined in lagoonal areas prior to 1960, coincident with intensive land clearing, and continued to decline offshore after 1960, with community structure more tolerant of turbid conditions (Cramer *et al.*, 2012).

The public comments did not provide new or supplemental information on *A. cervicornis'* susceptibility to sedimentation, and we did not find any new or supplemental information. All information on the susceptibility of *A. cervicornis* to sedimentation can be summarized as follows. *Acropora cervicornis* is susceptible to sedimentation through its sensitivity to turbidity, and increased run-off from land clearing has resulted in mortality of this species. In addition, laboratory studies indicate the combination of sedimentation and nutrient enrichment appears to be worse than the effects of either of these two stressors alone. Thus, we conclude that *A. cervicornis* has high susceptibility to sedimentation.

Information on *A. cervicornis'* susceptibility to nutrient enrichment that we considered in the proposed rule includes the following. Renegar and Riegl (2005) performed laboratory experiments to examine the effect of nutrients and carbon dioxide on *A. cervicornis* growth. Under the nutrient treatments alone, *A. cervicornis* experienced significantly lower growth rates under the higher nitrate and higher phosphate treatments, though not under the lower levels, and the combined nitrate and phosphate treatment produced significantly lower growth under both the low and high levels. All corals in the combined nitrate, phosphate, and carbon dioxide treatment experienced total mortality, indicating the severe stress this combination induced.

Lab experiments testing the effects of sedimentation and phosphate on *A. cervicornis* indicated that degenerative changes to tissue, zooxanthellae, and gonad development were more severe in sediment plus phosphate treatments in comparison to controls and phosphate alone (Hodel and Vargas-Angel, 2007).

The public comments did not provide new or supplemental information on the susceptibility of *A. cervicornis* to nutrient enrichment, and we did not find any new or supplemental information on its susceptibility to this threat. All information on the susceptibility of *A. cervicornis* to nutrient enrichment can be summarized as follows. Elevated nutrients can cause decreased growth in *A. cervicornis.* The

combined effects of nutrients with other stressors such as elevated carbon dioxide and sedimentation appear to be worse than the effects of nutrients alone, and can cause colony mortality in some combinations. Thus, we conclude that *A. cervicornis* is highly susceptible to nutrient enrichment.

Information on *A. cervicornis'* susceptibility to predation that we considered in the proposed rule includes the following. Known predators of *A. cervicornis* include the corallivorous snail *Coralliophila abbreviata* and the polychaete fireworm *Hermodice carunculata.* Fireworms engulf growing branch tips and devour the live tissue; removal of tissue from growing branch tips of *A. cervicornis* may negatively affect colony growth. Corallivorous snails have also been shown to transmit a disease that causes rapid tissue loss in *A. cervicornis* (Williams and Miller, 2005). Several species of fish including, threespot damselfish *Stegastes planifrons* and yellowtail damselfish *Microspathodon chrysurus*, do not directly feed on coral but remove live tissue to cultivate algal gardens.

In all thickets monitored off Ft. Lauderdale, Florida between 2001 and 2002, densities of fireworms ranged between 18 and 86 individuals per hectare, with predation scars affecting less than 0.2 percent of the *A. cervicornis* cover (Vargas-Angel *et al.*, 2003). Within the survey quadrats, fireworm scar sizes ranged from 1.0 to 8.0 cm, and densities ranged from 0 to 30 per m^2 (Vargas-Angel *et al.*, 2003). Evidence of fireworm predation was observed on 20.3 percent of colonies in Cabezos del Cayo, Dominican Republic in 2010 (Lirman *et al.*, 2010a). Yellowtail damselfish and three-spot damselfish were present on *A. cervicornis* colonies at a density of 0.50 and 0.96 fish per m^2, respectively, in the Dry Tortugas National Park, near Garden Key, Florida in 2004 (Wilkes *et al.*, 2008).

The public comments provided the following supplemental information on the susceptibility of *A. cervicornis* to predation. In stratified random samples in the Florida Keys, damselfish algal gardens were detected on 1.9 percent of colonies in 2007 and 2.6 percent of colonies in 2012. Snail predation was detected on 1.3 percent of colonies in 2012 (Miller *et al.*, 2013).

Supplemental information we found on the susceptibility of *A. cervicornis* to predation includes the following. In Cabezos del Cayo, Dominican Republic, 30 percent of colonies occurred within established damselfish territories, and corallivorous snails were found on 11.3 percent of *A. cervicornis* colonies in 2010 (Lirman *et al.*, 2010a). In permanent monitoring plots in the middle Florida Keys between 2011 and 2012, about ten percent of fate-tracked *A. cervicornis* colonies were affected by fireworm predation, about five percent were affected by damselfish, and about five percent were affected by corallivorous snails (Lunz, 2013).

All information on the susceptibility of *A. cervicornis* to predation can be summarized as follows. Predators can have a negative impact on *A. cervicornis* through both tissue removal and the spread of disease. Predation pressure appears spatially variable. Removal of tissue from growing branch tips of *A. cervicornis* may negatively affect colony growth, but the impact is unknown as most studies do not report on the same colonies through time, inhibiting evaluation of the longer-term impact of these predators on individual colonies and populations. We conclude that *A. cervicornis* is highly susceptible to predation.

Information on *A. cervicornis'* susceptibility to collection and trade that we considered in the proposed rule includes the following. Over the last decade, collection and trade of this species has been low.

The public comments did not provide new or supplemental information on the susceptibility of *A. cervicornis* to collection and trade. Supplemental information we found includes the following. Over the last decade, collection and trade of this species has been primarily for scientific research rather than commercial purposes. Gross exports averaged approximately 2,500 pieces of coral per year between 2000 and 2012 (data available at *http://trade.cites.org*). We conclude that *A. cervicornis* has low susceptibility to collection and trade.

There is no species-specific information on the susceptibility of *A. cervicornis* to sea level rise. The SRR described sea level rise as an overall low to medium threat for all coral species. The public comments did not provide new or supplemental information on *A. cervicornis'* susceptibility to sea level rise, and we did not find any new or supplemental information. Thus, we conclude that *A. cervicornis* has some susceptibility to sea level rise, but the available information does not support a more precise description of susceptibility to this threat.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. cervicornis.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. We also incorporate here, the evaluation of threats to this species conducted in the 2005 status review. Records confirm that *A. cervicornis* occurs in seven Atlantic ecoregions that encompass 26 kingdom's and countries' EEZs. The 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Caribbean Territories), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *A. cervicornis,* described first as a percentage of the above kingdoms and countries that utilize them to any degree, and second as the percentages of those kingdoms and countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *A. cervicornis* are fishing regulations and area management for protection and conservation. However, half of the fishing regulations are limited in scope and may not provide substantial protection for the species. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *A. cervicornis.* The 2005 status review and 2006 listing concluded that existing regulatory mechanisms are inadequate to control both global and local threats, and are contributing to the threatened status of the species, and we incorporate that analysis here.

Additionally, the public comments suggested that we did not fully consider the effects that conservation efforts have on the status of *A. cervicornis.* Therefore, conservation efforts are

described as follows. Conservation efforts have been underway for *A. cervicornis* for a number of years. Of 60 *Acropora* restoration efforts identified in 14 Caribbean countries, 88 percent used *A. cervicornis* including efforts in Belize, Colombia, Curaçao, Dominican Republic, Guadalupe, Honduras, Jamaica, Mexico, Puerto Rico, Turks and Caicos, U.S. Virgin Islands, and the Florida Keys (Young *et al.*, 2012). The most popular method is to use coral nurseries to propagate *A. cervicornis* for restoration (Johnson *et al.*, 2011; Young *et al.*, 2012). Fast growth rates, branching morphology, and asexual reproduction through fragmentation make *A. cervicornis* an ideal candidate for active propagation. The use of coral nursery techniques has been shown to be effective and only temporarily affect wild donor colonies from which fragments are taken to initially stock nurseries (Lirman *et al.*, 2010b). Survivorship is high (greater than 70 percent) in nurseries during the first year, but mortality due to storms, temperature anomalies, predation, and water quality have been reported (Young *et al.*, 2012). Survival rates are variable after transplanting, ranging between 43 and 95 percent during the first year (Hollarsmith *et al.*, 2012; Young *et al.*, 2012). Mortality rates of non-nursery raised transplanted *A. cervicornis* after five years were similar to those of reference or wild colonies (Garrison and Ward, 2008).

In conclusion, there are many conservation efforts aimed at increasing abundance and diversity of *A. cervicornis* throughout the Caribbean. These efforts are important, but not enough to ensure conservation unless combined with efforts to reduce the underlying threats and causes of mortality (Young *et al.*, 2012). Thus, while conservation efforts will likely enhance recovery and conservation of *A. cervicornis* at small spatial scales, they are unlikely to affect the overall status of the species, given the global nature of threats.

Vulnerability to Extinction

In 2006, *A. cervicornis* was listed as threatened, *i.e.*, likely to become in danger of extinction within the next 30 years, due to: (1) Recent drastic declines in abundance of the species that have occurred throughout its geographic range and abundances at historic lows; (2) the potential constriction of broad geographic ranges due to local extirpations resulting from a single stochastic event (*e.g.*, hurricanes, new disease outbreak); (3) limited sexual recruitment in some areas and unknown levels in most; and (4) occurrence of the Allee effect (in which fertilization success declines greatly as adult density declines).

The species was not listed as endangered, *i.e.*, currently in danger of extinction, because: (1) It was showing limited, localized recovery; (2) range-wide, the rate of decline appeared to have stabilized and was comparatively slow as evidenced by persistence at reduced abundances for the past two decades; (3) it was buffered against major threats by the large number of colonies, large geographic range, and asexual reproduction; and (4) as shown by the geologic record, the species has persisted through climate cooling and heating fluctuation periods over millions of years, whereas other corals have gone extinct.

In 2012, *A. cervicornis* was proposed for listing as endangered because information available since the original 2006 listing as threatened suggested: (1) Population declines have continued to occur, with certain populations of both species decreasing up to an additional 50 percent or more since the time of listing; (2) there are documented instances of recruitment failure in some populations; (3) minimal levels of thermal stress (*e.g.*, 30 degrees C) have been shown to impair larval development, larval survivorship, and settlement success of *A. palmata;* (4) near-future levels of acidification have been demonstrated to impair fertilization, settlement success, and post-settlement growth rates in *A. palmata;* (5) on average 50 percent of the colonies are clones, meaning the effective number of genetic individuals is half the total population size; (6) the species' ranges are not known to have contracted, but with continued declines local extirpations are likely, resulting in a reduction of absolute range size. Furthermore, we took into account that the BRT identified restriction to the Caribbean as a spatial factor increasing extinction risk, though, among other things, exposure to high levels of human disturbance that result in pollution and breakage impacts. Also, while asexual reproduction (fragmentation) provides a source for new colonies (albeit clones) that can buffer natural demographic and environmental variability remains true, we believed that reliance on asexual reproduction is not sufficient to prevent extinction of the species. Last, the previous status review and listing determination underestimated the global climate change-associated impacts to *A. palmata* and *A. cervicornis,* based on our current knowledge of trends in emissions, likely warming scenarios, and ocean acidification. In particular, in the previous determination, we identified ocean acidification only as a factor that ''may be contributing'' to the status of two species, in comparison to our current understanding that ocean acidification is one of the three highest order threats affecting extinction risk for corals.

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. cervicornis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. The species has undergone substantial population decline and decreases in the extent of occurrence throughout its range due mostly to disease. Although localized mortality events have continued to occur, percent benthic cover and proportion of reefs where *A. cervicornis* is dominant have remained stable over its range since the mid-1980s. There is evidence of synergistic effects of threats for this species including worse effects of nutrients in combination with acidification and sedimentation. *Acropora cervicornis* is highly susceptible to a number of threats, and cumulative effects of multiple threats are likely to exacerbate vulnerability to extinction. Despite the large number of islands and environments that are included in the species' range, geographic distribution in the highly disturbed Caribbean exacerbates vulnerability to extinction over the foreseeable future because *A. cervicornis* is limited to an area with high, localized human impacts and predicted increasing threats. *Acropora cervicornis*

commonly occurs in water ranging from 5 to 20 m in depth, though occurs in deeper depths of 16–30 m at the northern extent of its range, and has been rarely found to 60 m in depth. It occurs in spur and groove, bank reef, patch reef, and transitional reef habitats, as well as on limestone ridges, terraces, and hardbottom habitats. This habitat heterogeneity moderates vulnerability to extinction over the foreseeable future because the species occurs in numerous types of reef environments that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute population abundance has been estimated as at least tens of millions of colonies in the Florida Keys and Dry Tortugas combined and is higher and is higher than the estimate from these two locations due to the occurrence of the species in many other areas throughout its range. *Acropora cervicornis* has low sexual recruitment rates, which exacerbates vulnerability to extinction due to decreased ability to recover from mortality events when all colonies at a site are extirpated. In contrast, its fast growth rates and propensity for formation of clones through asexual fragmentation enables it to expand between rare events of sexual recruitment and increases its potential for local recovery from mortality events, thus moderating vulnerability to extinction. Its abundance and life history characteristics, combined with spatial variability in ocean warming and acidification across the species' range, moderate vulnerability to extinction because the threats are non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. cervicornis* was proposed for listing as endangered because of: High vulnerability to ocean warming (E), ocean acidification (E) and disease (C); high vulnerability to sedimentation (A and E) and nutrient over-enrichment (A and E); uncommon abundance (E); decreasing trend in abundance (E); low relative recruitment rate (E); narrow overall distribution (E); restriction to the Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. cervicornis* from endangered to threatened. We made this determination based on a more species-specific and holistic approach, including consideration of the buffering capacity of this species' spatial and demographic traits, and the best available information above on *A. cervicornis'* spatial structure, demography, threat susceptibilities, and management. The combination of these factors indicates that *A. cervicornis* is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora cervicornis* is highly susceptible to ocean warming (ESA Factor E), disease (C), ocean acidification (E), sedimentation (A, E), nutrients (A, E), and predation (C) and susceptible to trophic effects of fishing (A), depensatory population effects from rapid, drastic declines and low sexual recruitment (E), and anthropogenic and natural abrasion and breakage (A, E). These threats are expected to continue and increase into the future. In addition, the species is at heightened extinction risk due to inadequate existing regulatory mechanisms to address both local and global threats (D);

(2) *Acropora cervicornis* is geographically located in the highly disturbed Caribbean where localized human impacts are high and threats are predicted to increase as described in the Threats Evaluation section. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Acropora cervicornis'* abundance is still a fraction of what it was before the mass mortality in the 1970s and 1980s, and its presence on reefs throughout its range has continued to decrease over the last decade.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. cervicornis'* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. cervicornis'* distribution within the Caribbean increases its risk of exposure to threats as described above, its habitat includes spur and groove, bank reef, patch reef, and transitional reef habitats, as well as limestone ridges, terraces, and hardbottom habitats in water depths ranging from 5 to 60 m. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will experience highly variable thermal regimes and ocean chemistry on local and regional scales at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections;

(2) *Acropora cervicornis'* absolute abundance is at least tens of millions of colonies based on estimates from two locations. Absolute abundance is higher than estimates from these locations since *A. cervicornis* occurs in many other locations throughout its range, including a few small pockets of robust remnant populations. This absolute abundance allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section;

(3) Recent information indicates that percent cover and proportions of Caribbean sites where *A. cervicornis* is dominant have stabilized;

(4) *Acropora cervicornis* shows evidence of limited population expansion in some portions of its range under some circumstances (*e.g.,* Dry Tortugas, southeast Florida); and

(5) *Acropora cervicornis* has fast growth rates and high capacity to produce clones through asexual fragmentation, which can aid in recovery from mortality events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time. Therefore, we withdraw our proposal to list *A. cervicornis* as endangered.

Progress has been made with *A. cervicornis*-specific conservation and restoration projects, albeit small-scale, and these projects are likely to increase in the future. Within some countries, *A. cervicornis*-specific conservation and restoration projects show promise for enhancing species recovery at very small spatial scales and for facilitating the persistence of the species in some areas in the face of continuing threats. Range-wide, a multitude of conservation efforts are already broadly employed specifically for *A. cervicornis.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation

efforts or conservation efforts planned in the future will result in affecting the species' status to the point at which listing is not warranted.

A. palmata

Introduction

Acropora palmata colonies have frond-like branches, which appear flattened to near round, and typically radiate out from a central trunk and angle upward. Branches are up to 50 cm wide and range in thickness from 4 to 5 cm. Individual colonies can grow to at least 2 m in height and 4 m in diameter (*Acropora* Biological Review Team, 2005). Colonies of *A. palmata* can grow in nearly mono-specific, dense stands and form an interlocking framework known as thickets.

Spatial Information

Information on *A. palmata's* distribution, habitat, and depth range that we considered in the proposed rule includes the following. *Acropora palmata* is distributed throughout the western Atlantic, Caribbean, and Gulf of Mexico. The northern extent of the range in the Atlantic is Broward County, Florida where it is relatively rare (only a few known colonies), but fossil *A. palmata* reef framework extends into Palm Beach County, Florida. There are two known colonies of *A. palmata,* which were discovered only recently in 2003 and 2005, at the Flower Garden Banks, located 161 km off the coast of Texas in the Gulf of Mexico (Zimmer *et al.,* 2006).

Acropora palmata often grows in thickets in fringing and barrier reefs (Jaap, 1984; Tomascik and Sander, 1987; Wheaton and Jaap, 1988) and formed extensive barrier-reef structures in Belize (Cairns, 1982), the greater and lesser Corn Islands, Nicaragua (Lighty *et al.,* 1982), and Roatan, Honduras, and built extensive fringing reef structures throughout much of the Caribbean (Adey, 1978). *Acropora palmata* commonly grows in turbulent water on the fore-reef, reef crest, and shallow spur-and-groove zone (Cairns, 1982; Miller *et al.,* 2008; Rogers *et al.,* 1982; Shinn, 1963) in water ranging from 1 to 5 m depth. Early studies termed the reef crest and adjacent seaward areas from the surface to five or six meters depth the ''palmata zone'' because of the domination by the species (Goreau, 1959; Shinn, 1963). Maximum depth of framework construction ranges from 3 to 12 m, and colonies generally do not form thickets below a depth of 5 m (Lighty *et al.,* 1982). Although *A. palmata's* predominant habitat is reef crests and shallow fore-reefs less than 12 m depth, it also occurs in back-reef environments and in depths up to 30 m.

Extensive stands of dead colonies throughout the range occurred after mass mortalities during the 1970s and 1980s (see Demographic Information Below). There is no evidence of overall range constriction from the mass mortalities, but local extirpations are likely (Jackson *et al.,* 2014), resulting in a reduction of absolute range size.

The public comments did not provide new or supplemental information on *A. palmata's* habitat or depth range but provided the following supplemental information on its distribution. Precht and Aronson (2004) suggested that the recent expansion of *A. palmata* to the Flower Garden Banks (Zimmer *et al.,* 2006) is possibly due to climate warming.

Supplemental information we found on *A. palmata's* distribution is consistent with prior information. Veron (2014) confirms the occurrence of *A. palmata* in eight of a potential 11 ecoregions in the western Atlantic and wider-Caribbean that are known to contain corals. The three ecoregions in which *A. palmata* is not found are off the coasts of Bermuda, Brazil, and the southeast U.S. north of south Florida. The presence of the species in the Flower Garden Banks may represent a recent re-occupation of its historic range since fossil evidence indicates this species occupied the Flower Garden Banks during the early Holocene but disappeared in the middle Holocene due to sea level rise and possibly cooling temperatures (Precht *et al.,* 2014). Finally, the spatial structure of the species has been affected by extirpation from many localized areas throughout its range (Jackson *et al.,* 2014).

Supplemental information we found on *A. palmata's* habitat and depth includes the following. Goreau (1959) described ten habitat zones on a Jamaican fringing reef from inshore to the deep slope, finding *A. palmata* in eight of the ten zones. *Acropora palmata* was very abundant in the reef crest zones, but also common in several other zones further inshore (the reef flat, rear, channel or lagoon, and inshore zones), and rare on the reef slope to 15 meters depth. Although *A. palmata* is currently much less common throughout its range than it was prior to the mid-1980s, it still occurs in multiple habitats and to depths of one to 30 m. For example, a 2005 study of Bonaire back-reefs found *A. palmata* at three of six sites, including within inshore and lagoon habitats, ranging from seven to 15 m depth. In 2003, aggregations of *A. palmata* were reported from patch reefs at 10 to 20 m depth within the lagoon of Serrano Bank (Sanchez and Pizarro, 2005).

Demographic Information

Information on *A. palmata's* abundance and population trends that we considered in the proposed rule includes the following. *Acropora palmata* has been described as usually common (Veron, 2000) and uncommon (Carpenter *et al.,* 2008). *Acropora palmata* was historically one of the dominant species on Caribbean reefs, forming large, monotypic thickets and giving rise to the nominal distinct zone in classical descriptions of Caribbean reef morphology (Goreau, 1959). Mass mortality, apparently from white-band disease (Aronson and Precht, 2001), spread throughout the Caribbean in the mid-1970s to mid-1980s and precipitated widespread and radical changes in reef community structure (Brainard *et al.,* 2011). This mass mortality occurred throughout the range of the species within all Caribbean countries and archipelagos, even on reefs and banks far from localized human influence (Aronson and Precht, 2001; Wilkinson, 2008). In addition, continuing coral mortality from periodic acute events such as hurricanes, disease outbreaks, and mass bleaching events added to the decline of *A. palmata* (Brainard *et al.,* 2011). In locations where historic quantitative data are available (Florida, Jamaica, U.S. Virgin Islands), there was a reduction of greater than 97 percent between the 1970s and early 2000s (*Acropora* Biological Review Team, 2005).

Since the 2006 listing of *A. palmata* as threatened, continued population declines have occurred in some locations with certain populations of *A. palmata* and *A. cervicornis* decreasing up to an additional 50 percent or more (Colella *et al.,* 2012; Lundgren and Hillis-Starr, 2008; Muller *et al.,* 2008; Rogers and Muller, 2012; Williams *et al.,* 2008). In addition, Williams *et al.* (2008) reported recruitment failure between 2004 and 2007 in the upper Florida Keys after a major hurricane season in 2005; less than five percent of the fragments produced recruited into the population.

The public comments provided the following supplemental information on *A. palmata's* abundance and population trends. Several studies describe *A. palmata* populations that are showing some signs of recovery or are in good condition including in the Turks and Caicos Islands (Schelten *et al.,* 2006), U.S. Virgin Islands (Grober-Dunsmore *et al.,* 2006; Mayor *et al.,* 2006; Rogers and Muller, 2012), Venezuela (Zubillaga *et*

al., 2008), and Belize (Macintyre and Toscano, 2007).

Extrapolated population estimates of *A. palmata* from stratified random samples across habitat types in the Florida Keys were 0.6 ± 0.5 million (SE) colonies in 2005, 1.0 ± 0.3 million (SE) colonies in 2007, and 0.5 ± 0.3 million colonies in 2012. Because these population estimates are based on random sampling, differences between years may be a function of sampling effort rather than an indication of population trends. Relative to the abundance of other corals in the Florida Keys region, *A. palmata* was among the least abundant, ranking among corals that are naturally rare in abundance. No colonies of *A. palmata* were observed in surveys of the Dry Tortugas in 2006 and 2008. The size class distribution of the Florida Keys population included both small and large individuals (> 260 cm), but after 2005 the majority of the colonies were smaller in size. These smallest corals (0 to 20 cm) had approximately zero to two percent partial mortality during all three survey years. Partial mortality across all other size classes was approximately 20 to 70 percent in 2005, 5 to 50 percent in 2007, and 15 to 90 percent in 2012 (Miller *et al.,* 2013).

Supplemental information we found on *A. palmata's* abundance includes the following. Relatively abundant *A. palmata* communities have been documented from various locations, including Cuba (Alcolado *et al.,* 2010; González-Díaz *et al.,* 2010), Colombia (Sanchez and Pizarro, 2005), Venezuela (Martínez and Rodríguez Quintal, 2012), Navassa (Bruckner, 2012b), Jamaica (Jackson *et al.,* 2014), and the U.S. Virgin Islands (Muller *et al.,* 2014). Density estimates from sites in Cuba range from 0.14 colonies per m^2 (Alcolado *et al.,* 2010) to 0.18 colonies per m^2 (González-Díaz *et al.,* 2010). Maximum *A. palmata* density at ten sites in St. John, U.S. Virgin Islands was 0.18 colonies per m^2 (Muller *et al.,* 2014).

Mayor *et al.* (2006) reported the abundance of *A. palmata* in Buck Island Reef National Monument, St. Croix, U.S. Virgin Islands. They surveyed 617 sites from May to June 2004 and extrapolated density observed per habitat type to total available habitat. Within an area of 795 ha, they estimated 97,232–134,371 (95% confidence limits) *A. palmata* colonies with any dimension of connected live tissue greater than one meter. Mean densities (colonies ≥ 1 m) were 0.019 colonies per m^2 in branching coral-dominated habitats and 0.013 colonies per m^2 in other hard bottom habitats.

Puerto Rico contains the greatest known extent of *A. palmata* in the U.S. Caribbean. Between 2006 and 2007, a survey of 431 random points in habitat suitable for *A. palmata* in six marine protected areas in Puerto Rico revealed a variable density of zero to 52 *A. palmata* colonies per 100 m^2 (0.52 colonies per m^2), with average density of 3.3 colonies per 100 m^2 (0.03 colonies per m^2). Total loss of *A. palmata* was evidenced in 13.6 percent of the random survey areas where only dead standing colonies were present (Schärer *et al.,* 2009).

In stratified random surveys along the south, southeast, southwest, and west coasts of Puerto Rico designed to locate *Acropora* colonies, *A. palmata* was observed at five out of 301 stations with sightings outside of the survey area at an additional two stations (García Sais *et al.,* 2013). *Acropora palmata* colonies were absent from survey sites along the southeast coast. Maximum density was 18 colonies per 15 m^2 (1.2 colonies per m^2), and maximum colony size was 2.3 m in diameter (García Sais *et al.,* 2013).

Zubillaga *et al.* (2005) report densities of 3.2 colonies of *A. palmata* per 10 m^2 (0.32 colonies per m^2) in Los Roques National Park, Venezuela. At ten sites surveyed in the national park in 2003 to 2004, density ranged from 0 to 3.4 colonies per 10 m^2 (0 to 0.34 colonies per m^2) with four of the sites showing only standing dead colonies (Zubillaga *et al.,* 2008). In the six sites with live colonies, small (0.1 to 50 cm^2) and medium-sized (50 to 4,550 cm^2) colonies predominated over larger-sized (4,550 to16,500 cm^2) colonies.

At Los Colorados reef in northwestern Cuba, a 2006 study at 12 reef crest sampling stations reported average *A. palmata* densities of 0.18 colonies per m^2, and that *A. palmata* made up 8.7 percent of the total live coral colonies at the study sites. The study also reported that the nearby Baracoa and Rincon de Guanabo reefs had similar *A. palmata* densities (González-Díaz *et al.,* 2010). The size of *A. palmata* colonies indicates some recruitment in Cuba, but not the proportions of sexual versus asexual recruits. In a 2005 study of 280 *A. palmata* colonies at four sites on the north coast of Cuba, 30.4 percent were less than 10 cm in diameter (González-Díaz *et al.,* 2008). In a 2006 study of approximately 1,100 *A. palmata* colonies at three sites on the north coast of Cuba, diameter and height size-classes were measured (<2, 3–5, 6–7, 8–10, 11–80, and >80 cm). For the three sites combined, there were approximately 25 to 100 colonies in each of the four smaller size classes (Perera-Pérez *et al.,* 2012).

Supplemental information we found on *A. palmata's* population trends includes the following. At eight of 11 sites in St. John, U.S. Virgin Islands, colonies of *A. palmata* increased in abundance, between 2001 and 2003, particularly in the smallest size class, with the number of colonies in the largest size class decreasing (Grober-Dunsmore *et al.,* 2006). Colonies of *A. palmata* monitored monthly between 2003 and 2009 in Haulover Bay on St. John, U.S. Virgin Islands suffered bleaching and mortality from disease but showed an increase in abundance and size at the end of the monitoring period (Rogers and Muller, 2012). The overall density of *A. palmata* colonies around St. John did not significantly differ between 2004 and 2010 with six out of the ten sites showing an increase in colony density. Size frequency distribution did not significantly change at seven of the 10 sites, with two sites showing an increased abundance of large-sized (> 51 cm) colonies (Muller *et al.,* 2014).

In Colombia, *A. palmata* was present at four of the 32 plots (three of the six reefs) monitored annually from 1998 to 2004. Coverage of *A. palmata* ranged from 0.8 to 2.4 percent. Over the eight-year period, the species was stable at two reefs and declined at the other reef, likely in response to a hurricane in 1999 (Rodriguez-Ramirez *et al.,* 2010). MacIntyre and Toscano (2007) report the return of ''numerous large colonies'' of *A. palmata* on the shallow fore-reef at the southern limit of Carrie Bow Cay, Belize though no quantitative data were presented.

Colonies monitored in the upper Florida Keys showed a greater than 50 percent loss of tissue as well as a decline in the number of colonies, and a decline in the dominance by large colonies between 2004 and 2010 (Vardi *et al.,* 2012; Williams and Miller, 2012). Elasticity analysis from a population model based on data from the Florida Keys has shown that the largest individuals have the greatest contribution to the rate of change in population size (Vardi *et al.,* 2012). Between 2010 and 2013 *A. palmata* in the middle and lower Florida Keys had mixed trends. Population densities remained relatively stable at two sites and decreased at two sites by 21 and 28 percent (Lunz, 2013).

Acropora palmata monitored in Curaçao between 2009 and 2011 decreased in abundance, increased in colony size, with stable tissue abundance following hurricane damage (Bright *et al.,* 2013). The authors explained that the apparently conflicting trends of increasing colony

size but similar tissue abundance likely resulted from the loss of small-sized colonies that skewed the distribution to larger size classes, rather than colony growth.

Simulation models using data from matrix models of *A. palmata* colonies from specific sites in Curaçao (2006–2011), the Florida Keys (2004–2011), Jamaica (2007–2010), Navassa (2006 and 2009), Puerto Rico (2007 and 2010), and the British Virgin Islands (2006 and 2007) indicate that most of these studied populations will continue to decline in size and extent by 2100 if background environmental conditions remain unchanged (Vardi, 2011). In contrast, the studied populations in Jamaica were projected to increase in abundance, and studied populations in Navassa were projected to remain stable. Studied populations in the British Virgin Islands were predicted to decrease slightly from their initial very low levels. Studied populations in Florida, Curaçao, and Puerto Rico were predicted to decline to zero by 2100. Because the study period did not include physical damage (storms), the population simulations in Jamaica, Navassa, and the British Virgin Islands may have contributed to the differing projected trends at sites in these locations.

New information we found on population trends includes the following. A report on the status and trends of Caribbean corals over the last century indicates that cover of *A. palmata* has remained relatively stable at approximately one percent throughout the region since the large mortality events of the 1970s and 1980s. The report also indicates that the number of reefs with *A. palmata* present steadily declined from the 1980s to 2000–2004, then remained stable between 2000–2004 and 2005–2011. *Acropora palmata* was present at about 20 percent of reefs surveyed in both the 5-year period of 2000–2004 and the 7-year period of 2005–2011. *Acropora palmata* was dominant on approximately five to ten percent of hundreds of reef sites surveyed throughout the Caribbean during the four periods of 1990–1994, 1995–1999, 2000–2004, and 2005–2011 (Jackson *et al.,* 2014).

All information on *A. palmata's* abundance and population trends is summarized as follows. Based on population estimates there are at least hundreds of thousands of *A. palmata* colonies present in both the Florida Keys and St. Croix, U.S. Virgin Islands. Absolute abundance is higher than estimates from these two locations given the presence of this species in many other locations throughout its range. The effective population size is smaller than indicated by abundance estimates due to the tendency for asexual reproduction. Across the Caribbean, percent cover appears to have remained relatively stable since the population crash in the 1980s. Frequency of occurrence has decreased since the 1980s, indicating potential decreases in the extent of occurrence and effects on the species' range. However, the proportions of Caribbean sites where *A. palmata* is present and dominant have recently stabilized. There are locations such as the U.S. Virgin Islands where populations of *A. palmata* appear stable or possibly increasing in abundance and some such as the Florida Keys where population number appears to be decreasing. In some cases when size class distribution is not reported, there is uncertainty of whether increases in abundance indicate growing populations or fragmentation of larger size classes into more small-sized colonies. From locations where size class distribution is reported, there is evidence of recruitment, but not the proportions of sexual versus asexual recruits. The best evidence of recovery would come from multi-year studies showing an increase in the overall amount of living tissue of this species, growth of existing colonies, and an increase in the number of small corals arising from sexual recruitment (Rogers and Muller, 2012). Simulation models predict by 2100 that *A. palmata* will become absent at specific sites in several locations (Florida, Curacao, and Puerto Rico), decrease at specific sites in the British Virgin Islands, remain stable at specific sites in Navassa, and increase at specific sites in Jamaica. These simulations are based on the assumption that conditions experienced during the monitoring period, ranging from one to seven years depending on location, would remain unchanged in the future. We conclude there has been a significant decline of *A. palmata* throughout its range, with recent population stability at low percent coverage. We also conclude that absolute abundance is at least hundreds of thousands of colonies, but likely to decrease in the future with increasing threats.

Other Biological Information

Information on *A. palmata's* life history that we considered in the proposed rule includes the following. Growth rates, measured as skeletal extension of the end of branches, range from 4 to 11 cm per year (*Acropora* Biological Review Team, 2005) but in Curaçao have been reported to be slower today than they were several decades ago (Brainard *et al.,* 2011).

Acropora palmata is a hermaphroditic broadcast spawning species that reproduces after the full moon of July, August, and/or September (*Acropora* Biological Review Team, 2005). The estimated size at sexual maturity is 1600 cm^2, and growing edges and encrusting base areas are not fertile (Soong and Lang, 1992). Larger colonies have higher fecundity per unit area, as do the upper branch surfaces (Soong and Lang, 1992). Although self-fertilization is possible, *A. palmata* is largely self-incompatible (Baums *et al.,* 2005a; Fogarty *et al.,* 2012b).

Reproduction occurs primarily through asexual fragmentation that produces multiple colonies that are genetically identical (Bak and Criens, 1982; Highsmith, 1982; Lirman, 2000; Miller *et al.,* 2007; Wallace, 1985). Storms can be an important mechanism to produce fragments to establish new colonies (Fong and Lirman, 1995). Fragmentation is an important mode of reproduction in many reef-building corals, especially for branching species such as *A. palmata* (Highsmith, 1982; Lirman, 2000; Wallace, 1985). However, in the Florida Keys where populations have declined, there have been reports of failure of asexual recruitment due to high fragment mortality after storms (Porter *et al.,* 2012; Williams and Miller, 2010; Williams *et al.,* 2008).

Sexual recruitment rates are low, and this species is generally not observed in coral settlement studies. Laboratory studies have found that certain species of crustose-coralline algae facilitate larval settlement and post-settlement survival (Ritson-Williams *et al.,* 2010). Rates of post-settlement mortality after nine months are high based on settlement experiments (Szmant and Miller, 2005).

The public comments did not provide new or supplemental information on *A. palmata's* life history. Supplemental information we found on *A. palmata's* life history includes the following. Split spawning (spawning over a two month period) has been reported from the Florida Keys (Fogarty *et al.,* 2012b). Laboratory experiments have shown that some individuals (*i.e.,* genotypes) are sexually incompatible (Baums *et al.,* 2013) and that the proportion of eggs fertilized increases with higher sperm concentration (Fogarty *et al.,* 2012b). Experiments using gametes collected in Florida had lower fertilization rates than those from Belize, possibly due to genotype incompatibilities (Fogarty *et al.,* 2012b).

Darling *et al.* (2012) performed a biological trait-based analysis to

categorize coral species into four life history strategies: Generalist, weedy, competitive, and stress-tolerant. The classifications were primarily separated by colony morphology, growth rate, and reproductive mode. *Acropora palmata* was classified as a ''competitive'' species, thus likely more vulnerable to environmental stress.

All information on *A. palmata's* life history can be summarized as follows. The combination of rapid skeletal growth rates and frequent asexual reproduction by fragmentation can enable effective competition within, and domination of, reef-building coral communities in high-energy environments such as reef crests. Rapid skeletal growth rates and frequent asexual reproduction by fragmentation facilitate potential recovery from disturbances when environmental conditions permit (Highsmith, 1982; Lirman, 2000). However, low sexual reproduction can lead to reduced genetic diversity and limits the capacity to repopulate sites.

Other biological information on *A. palmata* that we considered in the proposed rule includes the following. Genetic samples from 11 locations throughout the Caribbean indicate that *A. palmata* populations in the eastern Caribbean (St. Vincent and the Grenadines, U.S. Virgin Islands, Curaçao, and Bonaire) have had little or no genetic exchange with populations in the western Atlantic and western Caribbean (Bahamas, Florida, Mexico, Panama, Navassa, and Puerto Rico) (Baums *et al.,* 2005b). While Puerto Rico is more closely connected with the western Caribbean, it is an area of mixing with contributions from both regions (Baums *et al.,* 2005b). Models suggest that the Mona Passage between the Dominican Republic and Puerto Rico acts as a filter for larval dispersal and gene flow between the eastern Caribbean and western Caribbean (Baums *et al.,* 2006b).

The western Caribbean is characterized by genetically depauperate populations with lower densities (0.13 ± 0.08 colonies per m^2), while denser (0.30 ± 0.21 colonies per m^2), genotypically rich stands characterize the eastern Caribbean (Baums *et al.,* 2006a). Baums *et al.* (2006a) concluded that the western Caribbean had higher rates of asexual recruitment and that the eastern Caribbean had higher rates of sexual recruitment. They postulated these geographic differences in the contribution of reproductive modes to population structure may be related to habitat characteristics, possibly the amount of shelf area available.

Genotypic diversity is highly variable. At two sites in the Florida Keys, only one genotype per site was detected out of 20 colonies sampled at each site (Baums *et al.,* 2005b). In contrast, all 15 colonies sampled in Navassa had unique genotypes (Baums *et al.,* 2006a). Some sites have relatively high genotypic diversity such as in Los Roques, Venezuela (118 unique genotpyes out of 120 samples; Zubillaga *et al.,* 2008) and in Bonaire and Curacao (18 genotypes of 22 samples and 19 genotypes of 20 samples, respectively; Baums *et al.,* 2006a). In the Bahamas, about one third of the sampled colonies were unique genotypes, and in Panama between 24 and 65 percent of the sampled colonies had unique genotypes, depending on the site (Baums *et al.,* 2006a).

The public comments did not provide new or supplemental biological information on *A. palmata.* Supplemental biological information we found includes the following. A genetic study found significant population structure in Puerto Rico locations (Mona Island, Desecheo Island, La Parguerain, La Parguera) both between reefs and between locations; population structure in La Parguera suggests restriction of gene flow between some reefs in close proximity (Garcia Reyes and Schizas, 2010). A more-recent study provided additional detail on the genetic structure of *A. palmata* in Puerto Rico, as compared to Curacao, the Bahamas, and Guadeloupe that found unique genotypes in 75 percent of the samples with high genetic diversity (Mège *et al.,* 2014). The recent results support two separate populations of *A. palmata* in the eastern Caribbean and western Caribbean; however, there is less evidence for separation at Mona Passage, as found by Baums *et al.* (2006b).

All biological information on *A. palmata* can be summarized as follows. Genotypic diversity is variable across the range with some populations showing evidence of higher input from sexual recruitment versus others that rely more heavily on asexual recruitment for population maintenance. There are many areas with many unique genotypes. Connectivity and mixing appear limited across larger geographic scales with eastern Caribbean populations relatively isolated from western Caribbean populations, with evidence of population structure at a local scale in some locations.

Susceptibility to Threats

Information on threat susceptibilities was interpreted in the proposed rule for *A. palmata's* vulnerability to threats as follows: High vulnerability to ocean warming, disease, acidification, sedimentation, and nutrient enrichment; moderate vulnerability to the trophic effects of fishing and predation; and low vulnerability to sea level rise and collection and trade.

Information on *A. palmata's* susceptibility to disease that we considered in the proposed rule includes the following. Disease is believed to be the primary cause of the region-wide decline of *A. palmata* beginning in the late 1970s and continues to have a large effect on the species. White band disease was generally associated with the majority of disease-related mortalities in *A. palmata* from the 1970s to 1990s (Aronson and Precht, 2001). White pox has been described as having severe impacts on *A. palmata,* and most monitoring information after 2000 indicates that lesion patterns resembling white pox have higher prevalence than patterns resembling white band disease (*Acropora* Biological Review Team, 2005). In the Florida Keys, the causative agent of white pox was identified as a bacterium linked to human sewage and potential vectors/reservoirs such as corallivores (Patterson *et al.,* 2002; Sutherland *et al.,* 2011).

The effects of white pox appear to be exacerbated by higher temperatures. In Hawksnest Bay, U.S. Virgin Islands during the 2005 bleaching event, the prevalence of white pox had a positive linear relationship with temperature, with mortality increasing with bleaching, indicating a decreased resilience to disease when colonies were stressed (Muller *et al.,* 2008).

Disease is temporally and spatially variable and is often reported as an instantaneous measure of prevalence (percent of colonies affected by disease) that provides only a snapshot in time. For instance, in Puerto Rico disease affected an average of 6.7 percent of colonies from December 2006 to October 2007 (Schärer *et al.,* 2009). In St. Croix U.S. Virgin Islands, white band disease affected three percent of the colonies surveyed in Buck Island Reef National Monument between May and June 2004 (Mayor *et al.,* 2006).

Studies of permanently marked colonies, or monitoring plots, show longer-term trends of disease and mortality over time. From January 2003 to December 2009, 90 percent of the 69 monitored *A. palmata* colonies in Haulover Bay, St. John, U.S. Virgin Islands exhibited signs of disease, and the most significant cause of whole colony mortality (Rogers and Muller, 2012). Of colonies monitored in the

Florida Keys from 2004 to 2011, disease was the second highest cause of tissue mortality after physical damage from storms (33 percent of all mortality attributed to disease, Williams and Miller, 2012).

The public comments did not provide new or supplemental information on the susceptibility of *A. palmata* to disease, and we did not find any new or supplemental information. Information on the susceptibility of *A. palmata* to disease can be summarized as follows. *Acropora palmata* is highly susceptible to disease as evidenced by the mass-mortality event in the 1970s and 1980s. White pox seems to be more common today than white band disease. The effects of disease are spatially and temporally (both seasonally and inter-annually) variable. Results from longer-term monitoring studies in the U.S. Virgin Islands and the Florida Keys indicate that disease can be a major cause of both partial and total colony mortality. Thus, we conclude that *A. palmata* is highly susceptible to disease.

Information on *A. palmata's* susceptibility to ocean warming that we considered in the proposed rule includes the following. High temperatures can cause bleaching and mortality of *A. palmata.* In St. Croix, U.S. Virgin Islands, colonies differentially bleached in Buck Island National Monument during the 2005 Caribbean-wide mass bleaching event; colonies in the shallower back reef bleached earlier and suffered greater tissue loss than those located elsewhere (Lundgren and Hillis-Starr, 2008). Data from two sites in Jamaica, found 100 percent of *A. palmata* colonies bleached at both sites in 2005, with greater than 50 percent of the colonies suffering partial mortality (Quinn and Kojis, 2008). At one site, bleached colonies had complete mortality only occasionally, and 15 percent of bleached colonies died at the second site (Quinn and Kojis, 2008). In Trunk Bay and Saltpond, St. John, U.S. Virgin Islands, almost half of the colonies that bleached in 2005 suffered partial or complete mortality (44 percent of 27 colonies and 40 percent of 107 colonies, respectively, Rogers *et al.,* 2006). Negligible bleaching of *A. palmata* was observed during a 2006 bleaching event in Navassa that affected corals at deeper depths (between 18 and 37 m) more significantly than at shallower depths (<10 m), likely due to decreased water motion at the deeper sites (Miller *et al.,* 2011a). Repeated sampling of the same colonies in the Florida Keys and Bahamas in 1998 and seasonally between March 2000 and August 2004 showed that colonies of *A. palmata* did not change their association with *Symbiodinium* type A3 throughout the study period that included the 1997–98 bleaching event (Thornhill *et al.,* 2006).

High water temperatures also affect *A. palmata* reproduction. *Acropora palmata* embryos and larvae exhibited more developmental abnormalities, lower survivorship, and decreased settlement at 30 degrees and 31.5 degrees C compared to those at 28 degrees C (Randall and Szmant, 2009).

The public comments did not provide new or supplemental information on the susceptibility of *A. palmata* to ocean warming. Supplemental information we found includes the following. *Acropora palmata* larvae exhibited faster development and faster swimming speed at 30 and 31.5 degrees C compared to controls at 27 and 28 degrees C (Baums *et al.,* 2013). The authors suggested these changes could decrease average larval dispersal distances, and cause earlier larval settlement, thereby affecting gene flow among populations (Baums *et al.,* 2013).

A 14-year study was conducted at nine sites around Little Cayman from 1999 to 2012 of live coral cover, juvenile densities, and size structure of coral colonies to determine response to the 1998 bleaching event inside versus outside of marine protected areas. Over the first half of the study, bleaching and disease caused live cover to decrease from 26 percent to 14 percent in all corals, with full recovery seven years later with no differences inside versus outside of marine protected areas. The numbers of *A. palmata* colonies in regularly-observed size-classes did not decrease during this study, which the authors suggested may indicate resistance to bleaching and disease. The study concluded that the health of the coral assemblage and the similarity of responses inside and outside the marine protected area suggested that negligible anthropogenic disturbance at the local scale was a key factor underlying the observed resilience (Manfrino *et al.,* 2013).

Van Woesik *et al.* (2012) developed a coral resiliency index based on biological traits and processes to evaluate extinction risk due to bleaching. Evaluations were performed at the genus level, but genera were separated between the Caribbean and Indo-Pacific. They indicated that *A. palmata* is highly vulnerable to extinction.

All information on the susceptibility of *A. palmata* to ocean warming can be summarized as follows. High water temperatures affect *A. palmata* through bleaching, lowered resistance to disease, and effects on reproduction. Temperature-induced bleaching and mortality following bleaching are temporally and spatially variable. Bleaching associated with the high temperatures in 2005 had a large impact on *A. palmata* with 40 to 50 percent of bleached colonies suffering either partial or complete mortality in several locations. Algal symbionts did not shift in *A. palmata* after the 1998 bleaching event indicating the ability to adapt to rising temperatures may not occur through this mechanism. However, *Acropora palmata* showed evidence of resistance to bleaching from warmer temperatures in some portions of its range under some circumstances (Little Cayman). Through the effects on reproduction, high temperatures can potentially decrease larval supply and settlement success, decrease average larval dispersal distances, and cause earlier larval settlement, thereby affecting gene flow among populations. Therefore, we conclude that *A. palmata* is highly susceptible to ocean warming.

Information on *A. palmata's* susceptibility to acidification that we considered in the proposed rule includes the following. Ocean acidification has a negative impact on early life stages of *A. palmata.* Compared to controls at 400 µatm, carbon dioxide levels of 560 and 800 µatm, predicted to occur this century, reduced the rate of fertilization and settlement (combined 52 and 73 percent, respectively) and post-settlement growth (39 and 50 percent, respectively) of *A. palmata* in lab experiments, and impairment of fertilization was exacerbated at lower sperm concentrations (Albright *et al.,* 2010).

The public comments did not provide new or supplemental information on the susceptibility of *A. palmata* to acidification. Supplemental information we found on its susceptibility to this threat includes the following. No effects on the progression or timing of larval development, or embryo and larval size were detected at elevated carbon dioxide levels of 700 µatm or 1000 µatm (Medina-Rosas *et al.,* 2013).

All information on the susceptibility of *A. palmata* to acidification can be summarized as follows. Ocean acidification will likely impact fertilization, settlement success, and post-settlement growth of *A. palmata.* Therefore, we conclude that *A. palmata* is highly susceptible to acidification.

There is no species-specific information on the trophic effects of fishing on *A. palmata.* However, due to the level of reef fishing conducted in the Caribbean, coupled with *Diadema* die-off and lack of significant recovery,

recruitment habitat is limited. Therefore, the trophic effects of reef fishing adversely affects *A. palmata's* recruitment habitat. Thus, we conclude that *A. palmata* has some susceptibility to the trophic effects of reef fishing due to low natural recruitment rates. However, the available information does not support a more precise description of susceptibility to this threat.

Information on *A. palmata's* susceptibility to sedimentation that we considered in the proposed rule includes the following. The morphology of *A. palmata* contributes to its sensitivity to sedimentation as it is poorer at removing sediment compared to mounding corals such as *Orbicella annularis* and *Diploria strigosa* (Abdel-Salam *et al.,* 1988). Out of five species tested, *A. palmata* was the least tolerant of sediment exposure; single applications of 200 mg per cm^2 to colonies caused coral tissue death as sediments accumulated on the flattened, horizontal surfaces (Rogers, 1983). It is generally unable to remove coarser sediments and only weakly able to remove finer sediments (*Acropora* Biological Review Team, 2005). Water movement and gravity are probably more important in removing sediments from this species than their capabilities of sloughing sediments in stagnant water (*Acropora* Biological Review Team, 2005). Because *A. palmata* is highly dependent on sunlight for nutrition, it is also sensitive to suspended sediments that reduce water clarity (Porter, 1976).

The public comments did not provide new or supplemental information on *A. palmata's* susceptibility to sedimentation. Supplemental information we found on the susceptibility of *A. palmata* to sedimentation includes the following. In Vega Baja, Puerto Rico, *A. palmata* mortality increased to 52 percent concurrent with pollution and sedimentation associated with raw sewage and beach nourishment, respectively, between December 2008 and June 2009 (Hernandez-Delgado *et al.,* 2011). Mortality presented as patchy necrosis-like and white pox-like conditions that impacted local reefs following anthropogenic disturbances and was higher inside the shallow platform (52 to 69 percent) and closer to the source of pollution (81 to 97 percent) compared to the outer reef (34 to 37 percent; Hernandez-Delgado *et al.,* 2011).

All information on the susceptibility of *A. palmata* to sedimentation can be summarized as follows. *Acropora palmata* is sensitive to sedimentation due to its poor capability of removing sediment and its high reliance on clear water for nutrition, and sedimentation can cause tissue mortality. We conclude that *A. palmata* is highly susceptible to sedimentation.

Information on *A. palmata's* susceptibility to nutrient enrichment that we considered in the proposed rule includes the following. There are few studies of the effects of nutrients on *A. palmata.* Field experiments indicate that the mean net rate of uptake of nitrate by *A. palmata* exceeds that of ammonium by a factor of two and that *A. palmata* does not uptake nitrite (Bythell, 1990).

The public comments did not provide new or supplemental information on the susceptibility of *A. palmata* to nutrient enrichment. Supplemental information we found on the susceptibility to this threat includes the following. In Vega Baja, Puerto Rico, *A. palmata* mortality increased to 52 percent concurrent with pollution and sedimentation associated with raw sewage and beach nourishment, respectively, between December 2008 and June 2009 (Hernandez-Delgado *et al.,* 2011). Mortality presented as patchy necrosis-like and white pox-like conditions that impacted local reefs following anthropogenic disturbances and was higher inside the shallow platform (52 to 69 percent) and closer to the source of pollution (81 to 97 percent) compared to the outer reef (34 to 37 percent; Hernandez-Delgado *et al.,* 2011).

All information on the susceptibility of *A. palmata* to nutrient enrichment can be summarized as follows. *Acropora palmata* is sensitive to nutrients as evidenced by increased mortality after exposure to raw sewage. We conclude that *A. palmata* is highly susceptible to nutrient enrichment.

Information on *A. palmata's* susceptibility to predation that we considered in the proposed rule includes the following. There are several known predators of *A. palmata* including the corallivorous snail *Coralliophila abbreviata* (Baums *et al.,* 2003) and the polychaete worm *Hermodice carrunculata.* Incidental corallivores that affect *A. palmata* include several species of fish such as stoplight parrotfish *Sparisoma viride* and three-spot damselfish *Stegastes planifrons. Stegastes planifrons* does not directly feed on the coral but removes live tissue to cultivate algal gardens. Likewise, parrotfish are primarily herbivores and may be feeding on endolithic algae in coral tissue (Bruckner *et al.,* 2000). Monitoring in the Florida Keys indicates that parrotfish bites on *A. palmata* usually heal in a matter of weeks to months (*Acropora* Biological Review Team, 2005). Predators have been identified as potential vectors and reservoirs of disease (Sutherland *et al.* 2011).

The corallivorous snail *C. abbreviata* is the main predator, removing up to 16 cm^2 of tissue per day (Brawley and Adey 1982), and there is evidence that they concentrate on remnant *Acropora* populations following decline (*Acropora* Biological Review Team, 2005). Severity of predation is variable, and *Coralliophila* seem to be extremely rare or absent on *Acropora* spp. in certain areas such as the Dry Tortugas, Florida and Bocas del Toro, Panama (*Acropora* Biological Review Team, 2005). In St. John, U.S. Virgin Islands, snail predation affected a total of six percent of the colonies across 29 sites, but at individual sites, predation affected up to 60 percent of the colonies (Grober-Dunsmore *et al.,* 2006). In Los Roques, Venezuela snail predation was the most common cause of partial mortality (4 to 20 percent), and it affected 0.72 to 10.6 percent of the colonies (Zubillaga *et al.,* 2008). Surveys of 235 sites throughout the Florida Keys in 2007 revealed that about five percent of the *A. palmata* colonies assessed for condition were affected via predation by snails and damselfish (Miller *et al.,* 2008). In Puerto Rico, infestations of corallivorous snails were observed on three percent of all *A. palmata* colonies surveyed and ranged from 0.9 to 10.6 percent per site (Schärer *et al.,* 2009).

The public comments did not provide new or supplemental information on the susceptibility of *A. palmata* to predation. Supplemental information we found on the susceptibility of *A. palmata* to predation includes the following. Of the 50 percent tissue loss experienced during monitoring in the Florida Keys between 2004 and 2010, snail predation accounted for 15 percent after storm damage (42 percent) and disease (33 percent; Williams and Miller, 2012). The honeycomb cowfish *Acanthostracion polygonius* has been observed biting *A. palmata* and causing tissue lesions; it is unknown whether the fish is actively feeding on the coral tissue or if lesions are a by-product of its foraging mode (Williams and Bright, 2013). Lesions healed rapidly (less than six weeks) and did not contribute to significant losses of live tissue (Williams and Bright, 2013).

All information on the susceptibility of *A. palmata* to predation can be summarized as follows. Predators can have an impact on *A. palmata* both through tissue removal and the potential to spread disease. Predation pressure is spatially variable and almost non-existent in some locations. However, the

effects of predation can become more severe if colonies decrease in abundance and density, as predators focus on the remaining living colonies. Therefore, we conclude that *A. palmata* has high susceptibility to predation.

Information on *A. palmata's* susceptibility to sea level rise that we considered in the proposed rule includes the following. In-place colonies of *A. palmata* have been used in the geologic record for reconstructing Holocene sea level because this species only develops monospecific thickets in waters less than 5 m deep and is generally limited to depths of 10 m or less (Blanchon, 2005; Blanchon *et al.,* 2009). A sustained sea level rise of more than 14 mm per year is likely to displace *A. palmata* from its thicket-forming, framework-building depth range (≤5 m) into its remaining habitat range where a mixed framework is likely to develop (Brainard *et al.,* 2011). In the Yucatan region of Mexico during the warming that led to the last interglacial period, *A. palmata* was able to keep up with the first 3 m of rapid sea-level rise; continued sea-level rise led to the demise of the original fore-reef crests inhabited by *A. palmata,* the retreat of *A. palmata* to a more inland site, and back-stepping of the reef crest as sea level rose an additional 2 to 3 m (total of 6 m over an ecological time scale; Brainard *et al.,* 2011).

The public comments did not provide new or supplemental information on *A. palmata's* susceptibility to sea level rise, and we did not find any new or supplemental information. All information on the susceptibility of *A. palmata* to sea level rise can be summarized as follows. The fast growth rate of *A. palmata* could accommodate deeper water. We conclude that *A. palmata* has a low susceptibility to sea level rise.

Information on *A. palmata's* susceptibility to collection and trade that we considered in the proposed rule includes the following. Over the last decade, collection and trade of this species has been low. The public comments did not provide new or supplemental information on the susceptibility of *A. palmata* to collection and trade. Supplemental information we found includes the following. Gross exports averaged 2,120 pieces of coral per year between 2000 and 2012 and have primarily been for scientific purposes (data available at *http://trade.cites.org*). We conclude that *A. palmata* has low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we relied on information from the Final Management Report for evaluating the existing regulatory mechanisms for controlling threats to all corals. However, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. palmata.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. We also incorporate here, the evaluation of threats to this species conducted in the 2005 status review. Records confirm that *A. palmata* occurs in eight Atlantic ecoregions that encompass 26 kingdom's and countries' EEZs. The 26 kingdoms and countries are Antigua & Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, French Antilles, Grenada, Guatemala, Haiti, Kingdom of the Netherlands, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Trinidad and Tobago, United Kingdom (British Caribbean Territories), United States (including U.S. Caribbean Territories), and Venezuela. The regulatory mechanisms relevant to *A. palmata,* described first as a percentage of the above kingdoms and countries that utilize them to any degree, and second as the percentages of those kingdoms and countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 12 percent limited in scope), coral collection (50 percent with 27 percent limited in scope), pollution control (31 percent with 15 percent limited in scope), fishing regulations on reefs (73 percent with 50 percent limited in scope), managing areas for protection and conservation (88 percent with 31 percent limited in scope). The most common regulatory mechanisms in place for *A. palmata* are fishing regulations and area management for protection and conservation. However, half of the fishing regulations are limited in scope. General coral protection and collection laws, along with pollution control laws, are much less common regulatory mechanisms for the management of *A. palmata.* The 2005 status review and 2006 listing concluded that existing regulatory mechanisms are inadequate to control both global and local threats, and are contributing to the threatened status of the species, and we incorporate that analysis here.

Additionally, the public comments suggested that we did not fully consider the effects that conservation efforts have on the status of *A. palmata.* Therefore, conservation efforts are described as follows. Conservation efforts have been underway for *A. palmata* for a number of years. Of 60 *Acropora* restoration efforts identified in 14 Caribbean countries, 52 percent used *A. palmata,* including efforts in Belize, British Virgin Islands, Colombia, Curacao, Dominican Republic, Guadalupe, Jamaica, Mexico, Puerto Rico, Turks and Caicos, U.S. Virgin Islands, and Florida (Young *et al.,* 2012). SECORE, a conservation organization comprised of public aquariums, zoos, and researchers, holds annual workshops to accommodate sexual fertilization of *A. palmata* eggs collected from the wild, with the intent of rearing larvae for development of ex situ populations for conservation (Petersen *et al.,* 2008). However, to date, *A. palmata* colonies produced through in vitro fertilization have rarely been planted into the wild for restoration (but see Roik *et al.,* 2011; Szmant and Miller, 2005).

Restoration efforts involving *A. palmata* more typically re-attach fragments after physical disturbance such as storms or ship groundings (Bruckner and Bruckner, 2001; Garrison and Ward, 2008) or grow colonies in coral nurseries (Becker and Mueller, 2001; Bowden-Kerby and Carne, 2012; Johnson *et al.,* 2011) to outplant. Fast growth rates, branching morphology, and asexual reproduction through fragmentation make *A. palmata* an ideal candidate for active propagation, and there are a number of offshore nurseries that are producing corals for use in restoration and re-establishment of degraded populations. High survivorship (>70 percent) of coral fragments has been found within coral nurseries during the first year of propagation (Young *et al.,* 2012). Survival rates after transplanting are variable, ranging between 43 and 95 percent during the first year, and decreasing in some studies using non-nursery raised fragments to 0 to 20 percent after five years (Young *et al.,* 2012).

In conclusion, there are many conservation efforts aimed at increasing abundance and genetic diversity of *A. palmata* throughout the Caribbean. These efforts are important, but not enough to ensure conservation unless combined with efforts to reduce the underlying threats and causes of mortality (Young *et al.,* 2012). While conservation efforts will likely enhance recovery and conservation of *A. palmata* at small spatial scales, they are unlikely

to affect the status of the species, given the global nature of threats.

Vulnerability to Extinction

In 2006, *A. palmata* was listed as threatened, *i.e.,* likely to become in danger of extinction within the next 30 years, due to: (1) Recent drastic declines in abundance of the species that have occurred throughout its geographic range and abundances at historic lows; (2) the potential constriction of broad geographic ranges due to local extirpations resulting from a single stochastic event (*e.g.,* hurricanes, new disease outbreak); (3) limited sexual recruitment in some areas and unknown levels in most; and (4) occurrence of the Allee effect (in which fertilization success declines greatly as adult density declines).

The species was not listed as endangered, *i.e.,* currently in danger of extinction, because: (1) It was showing limited, localized recovery; (2) range-wide, the rate of decline appeared to have stabilized and was comparatively slow as evidenced by persistence at reduced abundances for the past two decades; (3) it was buffered against major threats by the large number of colonies, large geographic range, and asexual reproduction; and (4) as shown by the geologic record, the species has persisted through climate cooling and heating fluctuation periods over millions of years, whereas other corals have gone extinct.

In 2012, *A. palmata* was proposed for listing as endangered because information available since the original 2006 listing as threatened suggested: (1) Population declines have continued to occur, with certain populations of both species decreasing up to an additional 50 percent or more since the time of listing; (2) there are documented instances of recruitment failure in some populations; (3) minimal levels of thermal stress (*e.g.,* 30 degrees C) have been shown to impair larval development, larval survivorship, and settlement success of *A. palmata;* (4) near-future levels of acidification have been demonstrated to impair fertilization, settlement success, and post-settlement growth rates in *A. palmata;* (5) on average 50 percent of the colonies are clones, meaning the effective number of genetic individuals is half the total population size; (6) the species' ranges are not known to have contracted, but with continued declines local extirpations are likely, resulting in a reduction of absolute range size. Furthermore, we took into account that the BRT identified restriction to the Caribbean as a spatial factor increasing extinction risk, though, among other things, exposure to high levels of human disturbance that result in pollution and breakage impacts. Also, while asexual reproduction (fragmentation) provides a source for new colonies (albeit clones) that can buffer natural demographic and environmental variability remains true, we believed that reliance on asexual reproduction is not sufficient to prevent extinction of the species. Last, the previous status review and listing determination underestimated the global climate change-associated impacts to *A. palmata* and *A. cervicornis,* based on our current knowledge of trends in emissions, likely warming scenarios, and ocean acidification. In particular, in the previous determination, we identified ocean acidification only as a factor that ''may be contributing'' to the status of two species, in comparison to our current understanding that ocean acidification is one of the three highest order threats affecting extinction risk for corals.

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic traits, threat susceptibilities, and consideration of the baseline environment and future projections of threats. Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species' abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. palmata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. The species has undergone substantial population decline and decreases in the extent of occurrence throughout its range due mostly to disease. Although localized mortality events have continued to occur, percent benthic cover and proportion of reefs where *A. palmata* is dominant have remained stable over its range since the mid-1980s. There is evidence of synergistic effects of threats for this species including disease outbreaks following bleaching events. *Acropora palmata* is highly susceptible to a number of threats, and cumulative effects of multiple threats are likely to exacerbate vulnerability to extinction. Despite the large number of islands and environments that are included in the species' range, geographic distribution in the highly disturbed Caribbean exacerbates vulnerability to extinction over the foreseeable future because *A. palmata* is limited to an area with high localized human impacts and predicted increasing threats. *Acropora palmata* occurs in turbulent water on the back reef, fore reef, reef crest, and spur and groove zone in water ranging from 1 to 30 m in depth. This moderates vulnerability to extinction over the foreseeable future because the species occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute population abundance has been estimated as at least hundreds of thousands of colonies in both Florida and a portion of the U.S. Virgin Islands and is higher than the estimate from these two locations due to the occurrence of the species in many other areas throughout its range. *Acropora palmata* has low sexual recruitment rates, which exacerbates vulnerability to extinction due to decreased ability to recover from mortality events when all colonies at a site are extirpated. In contrast, its fast growth rates and propensity for formation of clones through asexual fragmentation enables it to expand between rare events of sexual recruitment and increases its potential for local recovery from mortality events, thus moderating vulnerability to extinction. Its abundance and life history characteristics, combined with spatial variability in ocean warming and acidification across the species' range, moderate vulnerability to extinction because the threats are non-uniform, and there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. palmata* was proposed for listing as endangered because of: High vulnerability to ocean warming (E), ocean acidification (E) and disease (C); high vulnerability to sedimentation (A and E) and nutrient over-enrichment (A and E); uncommon abundance (E); decreasing trend in abundance (E); low

relative recruitment rate (E); narrow overall distribution (E); restriction to the Caribbean (E); and inadequacy of regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. palmata* from endangered to threatened. We made this determination based on a more species-specific and holistic approach, including consideration of the buffering capacity of this species' spatial and demographic traits, and the best available information above on *A. palmata's* spatial structure, demography, threat susceptibilities, and management. The combination of these factors indicates that *A. palmata* is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora palmata* is highly susceptible to ocean warming (ESA Factor E), disease (C), ocean acidification (E), sedimentation (A, E), nutrients (A, E), and predation (C) and susceptible to trophic effects of fishing (A), depensatory population effects from rapid, drastic declines and low sexual recruitment (C), and anthropogenic and natural abrasion and breakage (A, E). These threats are expected to continue and increase into the future. In addition, the species is at heightened extinction risk due to inadequate existing regulatory mechanisms to address local and global threats (D);

(2) *Acropora palmata* is geographically located in the highly disturbed Caribbean, where localized human impacts are high and threats are predicted to increase as described in the Threats Evaluation section. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Acropora palmata*'s abundance is still a fraction of what it was before the mass mortality in the 1970s and 1980s, and recent population models forecast the extirpation of the species from some locations over the foreseeable future.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. palmata*'s spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. palmata*'s distribution in the Caribbean increases its risk of exposure to threats as described above, its habitat includes back reef environments and turbulent water on the fore reef, reef crest, shallow spur and groove zone. It is most commonly found in depths of one to 12 m but is also found in depths up to 30 m. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will experience highly variable thermal regimes and ocean chemistry on local and regional scales at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections;

(2) *Acropora palmata*'s absolute abundance is at least hundreds of thousands of colonies based on estimates from two locations in its range. Absolute abundance is higher than estimates from these locations since *A. palmata* occurs in many other locations throughout its range. This absolute abundance allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section;

(3) Recent information indicates that proportions of Caribbean sites where *A. palmata* is present and dominant have stabilized;

(4) *Acropora palmata* has fast growth rates and high capacity to produce clones through asexual fragmentation, which can aid in local recovery from mortality events; and

(5) *Acropora palmata* shows evidence of resistance to bleaching from warmer temperatures in some portions of its range under some circumstances (*e.g.* Little Cayman).

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section and thus does not warrant listing as endangered at this time. Therefore, we withdraw our proposal to list *A. palmata* as endangered.

Progress has been made with *A. palmata*-specific conservation and restoration projects, albeit small-scale, and these projects are likely to increase in the future. Within some countries, *A. palmata*-specific conservation and restoration projects show promise for enhancing species recovery at very small spatial scales and facilitating the persistence of the species in some areas in the face of continuing threats. Range-wide, a multitude of conservation efforts are already broadly employed specifically for *A. palmata.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species' status to the point at which listing is not warranted.

Indo-Pacific Species Determinations

Absolute abundance is approximated at a coarse scale in the Demographic Information sections for most of the Indo-Pacific species, based on a comparison of corrected data from Richards *et al.* (2008) and the distribution and abundance results from Veron (2014). Mean global census sizes for four species in this final rule (*Acropora jacquelineae, A. lokani, A. speciosa,* and *A. tenella*) are provided in Richards *et al.* (2008). An error in the global census size formula (Richards *et al.* 2008, Supplementary Information file Methods_S1) resulted in 1,000-fold under-estimates of global census size in Richards *et al.* (2008) for these four species, as confirmed by NMFS with the author in 2013. Richards *et al.*'s (2008) corrected census results were compared with Veron's ecoregion distribution and semi-quantitative abundance results to derive coarse approximations of absolute abundance. For each species, the resulting absolute abundance is described as either ''at least millions of colonies,'' or ''at least tens of millions of colonies'' (NMFS, 2014). Although this comparison produces only very general approximations of abundance, large scale estimates are sufficient for considering whether population size provides buffering capacity within the context of our listing determinations.

Genus Millepora

Genus Introduction

The SRR and SIR provided no genus-level introduction information for *Millepora.* However, they did provide the following information on reproduction in the genus. *Millepora* species are hydrozoans, thus their life history cycle includes a medusae stage, a free-swimming, bell-shaped form (''jellyfish'') that produces gametes. Reproduction is seasonal. The adult coral colonies produce tiny medusae, which release gametes within a few days after being released from the colony. Medusae are in separate sexes,

and the milleporid medusae of some species live for only a few hours. The gametes of some milleporids can become mature in 20 to 30 days, more rapidly than for many scleractinians. Hydrozoan corals of the genus *Millepora* are the only reef-building corals with medusae as part of their life history. Branching and columnar forms of *Millepora* are subject to fragmentation and may use this mechanism to reproduce asexually; unlike scleractinian corals, the survival of *Millepora* fragments may not be size-dependent.

There is only one genus in the Family Milleporidae, the genus *Millepora.* About 16 species of *Millepora* are currently considered valid. While all coral species in this final rule are ''cnidarians'' (Phylum Cnidaria), *Millepora* are ''hydrozoans'' (Class Hydrozoa, which includes jellyfish), whereas all other species in this rule are ''scleractinians'' (Class Anthozoa, Order Scleractinia). Like other reef-building corals, *Millepora* species contain zooxanthellae, produce calcium carbonate skeletons, may grow fast, and are thus major contributors to the physical structure of coral reefs. Unlike other reef-building corals, the surfaces of *Millepora* colonies are covered with tiny polyps that look like hairs, containing stinging cells to capture prey. Most species can sting humans with the same stinging cells, hence the common name ''fire corals.'' Colonies of *Millepora* species are encrusting, branching, foliose (leafy), or combinations of these forms. The biology and ecology of *Millepora* are reviewed in Lewis (2006).

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Millepora.* The genus *Millepora* has been called a bleaching ''loser.'' *Millepora* species are ranked as the most susceptible to bleaching in response to high seawater temperatures of any of the 40 genera or other categories of hermatypic corals in the Great Barrier Reef. The genus has been reported to be highly susceptible to bleaching in the western Indian Ocean and appears to have experienced local extirpations in the tropical eastern Pacific. Low bleaching occurred in *Millepora* in Moorea during the 1991 event, but elevated temperatures can also kill *Millepora* even in the absence of bleaching. At elevated temperatures, *Millepora dichotoma* showed decreased zooxanthellae density, changes in chlorophyll concentrations, and decreased calcification. *Millepora* species are among the first to bleach and die in response to high temperature events, but they also seem to have a high capacity for quickly recovering by recruiting new colonies.

Millepora have been observed with a greater than 20 percent prevalence of skeleton-eroding-band disease in the Red Sea. There are reports of black-band disease on *Millepora* on the Great Barrier Reef and white plague in Florida. Few other reports exist for the Pacific, and Caribbean congeners have been observed with a small number of diseases.

Millepora species are known to be preyed on by the crown-of-thorns seastar *Acanthaster planci,* although they are less preferred prey than acroporids and perhaps most scleractinians. *Millepora* species are also preyed on by the polychaete *Hermodice carunculata,* the nudibranch mollusk *Phyllidia,* and filefish of the genera *Alutera* and *Cantherhines.*

Although *Millepora* species tend to favor relatively clear water with low rates of sedimentation, they were reported to be among the last 17 out of 42 genera to drop out along a gradient of increasing rate of sedimentation. *Millepora* also showed increased relative abundance and colony size on sediment impacted reefs in Kenya. Though little is known about effects of nutrients on Pacific *Millepora,* Caribbean congeners were found to decrease in percent cover on eutrophic reefs in Barbados.

The genus *Millepora* has been involved in international trade from Indonesia, Solomon Islands, and Fiji with reported exports between 200 and 3000 pieces per year in the years 2000–2008. Reported exports from Vietnam, Malaysia, and Tonga were less than 1000 pieces per year in the same time period.

Public comments did not provide any information on the genus *Millepora*. We gathered supplemental information on the susceptibilities of *Millepora* species to some threats, including the following. High bleaching and mortality in *Millepora* species has been reported in response to warming events. All *Millepora* colonies on reef flats of two islands in the Thousand Islands of Indonesia died in the 1983 El Nino mass bleaching (Brown and Suharsono, 1990). In contrast, *Millepora* colonies showed no evidence of bleaching in Moorea, French Polynesia in the 1991 bleaching event other than occasional mild paling (Gleason, 1993). In Palau in 2000, some mortality was seen among *Millepora* colonies (Bruno *et al.,* 2001). Almost all *Millepora* colonies in study sites outside of marine protected areas in Kenya were killed by mass bleaching in 1998, but in protected sites there was actually an increase in *Millepora* colonies (McClanahan *et al.,* 2001). *Millepora* colonies had a bleaching index of 23.06 for eight countries in the western Indian Ocean in 1998–2005, which was 12th highest of the 45 genera recorded, and 56 percent of the highest value (McClanahan *et al.,* 2007a). *Millepora* had the highest bleaching level of any genus in Australia, and a moderately high level in Kenya in 1998 (Pandolfi *et al.,* 2011). *Millepora* colonies in Okinawa, Japan, experienced sharp drops in populations following the 1998 and 2010 mass bleaching episodes (Hongo and Yamano, 2013). At Mauritius in a bleaching event in 2004, *Millepora* had a bleaching index of 35, the second highest of the 32 genera recorded (McClanahan *et al.,* 2005a). *Millepora* colonies had the highest level of bleaching among the corals of the Socotra islands of Yemen, just outside the Red Sea, in 1998 (DeVantier *et al.,* 2005).

While *Millepora* species are among the most susceptible of all reef-building corals to warming-induced bleaching, they also often recover more quickly than scleractinians, opportunistically over-growing bleached colonies. Such relatively rapid recovery by *Millepora* species from bleaching events has been observed in both the Indo-Pacific and Caribbean, and is facilitated by short colony life and ready regeneration of fragments (Lewis, 2006). At a forereef site in the Marquesas Islands, French Polynesia, *Millepora platyphyllia* overgrew dead scleractinian colonies to form a large monospecific stand (Andréfouët *et al.,* 2014). At a back-reef site on Ofu Island, American Samoa, following a bleaching event in 2002 that killed almost all *Millepora dichotoma,* colonies appeared and became fairly common within a few years (Doug Fenner, personal comm.). Following both the 1982–83 and 1997–98 warming events, *Millepora intricata* was extirpated from shallow water in the eastern Pacific, but showed recovery within several years, likely because of recolonization from deep water (Smith *et al.,* in press). In contrast, a long-term study showed that three *Millepora* species were ''long-term losers'' (*i.e.,* populations decreased to zero, and remained there) following mass bleaching events in Japan in 1998 and 2010, while two other species of *Millepora* were ''neither winners nor losers'' (*i.e.,* changes in their populations were not significant) (van Woesik *et al.,* 2011).

Millepora colonies in the Great Barrier Reef had low susceptibility to Skeletal Eroding Band (the most prevalent

disease on the GBR), with a prevalence of 0.4 percent out of 4,068 colonies surveyed (Page and Willis, 2007).

Several recent studies compare vulnerabilities across genera or species for a large number of reef-building coral species, and the results of these studies are summarized below with regard to *Millepora.* Foden *et al.* (2013) developed a framework for evaluating the vulnerability of corals (and birds and amphibians) to extinction due to climate change. They categorized all of the six species of *Millepora,* which they reported on as having a low vulnerability to climate change. A field study that tracked the responses of 46 reef-building coral species in southern Japan from 1997 to 2010 through two bleaching events in 1998 and 2001 rated three *Millepora* species as neither winners nor losers, and two *Millepora* species as long term losers. Three of the *Millepora* species were branching and all three branching species were ''long term losers,'' one species is encrusting and one produces plates, and those two species were neither long term winners or losers (van Woesik *et al.,* 2011). There is no information available on the effects of any other threat for *Millepora* species.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information we can make the following inferences about the susceptibilities of an unstudied *Millepora* species to ocean warming, disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, or collection and trade. The large majority of studies report that *Millepora* species are highly susceptible to thermal stress and bleaching, but vulnerability may be moderated by the capacity for rapid recovery in some species. An unstudied species of *Millepora* such as *M. tuberosa* can be predicted in a bleaching event to not be a ''winner'' in the long term, but it cannot be predicted whether they will be a long term loser, or neither a winner or loser. Thus, an unstudied species of *Millepora* is likely to be highly susceptible to ocean warming. Based on the above information, an unstudied species of *Millepora* is likely to have some susceptibility to disease, sedimentation, nutrients, and predation.

The SRR rated ocean acidification as ''medium-high'' importance, the third most important threat to corals overall, because of the likely effects of decreasing ocean pH on coral calcification and reproduction. Thus, an unstudied *Millepora* species is likely to have some susceptibility to ocean acidification. The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Millepora* species is likely to have some susceptibility to the trophic effects of fishing. The SRR rated sea-level rise as ''low-medium'' importance to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, most likely to sediment-tolerant assemblages and slower growing species. Because *Millepora* are not generally sediment-tolerant and are faster growing species, an unstudied *Millepora* species is likely to have some susceptibility to sea-level rise. The SRR rated ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall, and this threat is addressed at both the genus and species levels in the SRR. Because *Millepora* species are widely collected and traded, an unstudied *Millepora* species is likely to have some susceptibility to collection and trade.

In conclusion, an unstudied *Millepora* species is likely to be highly susceptible to ocean warming (*i.e.,* thermal stress, leading to warming-induced bleaching), and to have some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Millepora foveolata

Introduction

The SRR and SIR provided the following information on *M. foveoloata*'s morphology and taxonomy. Colonies of *Millepora foveolata* form thin encrusting laminae that adhere closely to the underlying substrata. *Millepora foveolata* is sometimes confused with the similarly encrusting *Millepora exaesa.*

The public comments did not provide any new or supplemental information on *M. foveoloata*'s morphology and taxonomy. However, we gathered supplemental information on *M. foveoloata* that indicates a very high level of species identification uncertainty, because its distinctive features are very small and difficult to learn. In addition, no pictures of live colonies have been published of this species. Corals of the World (Veron, 2000) does not include non-scleractinians such *Millepora* species, making it very difficult to obtain reliable reference material. Many coral experts also ignore *Millepora* species, but even those that are interested in them have little opportunity to hone identification skills because the species is quite rare and not often encountered on surveys. Thus, even though *M. foveolata* is considered a valid species, and there are no known taxonomic uncertainty issues, the species is so difficult to identify in the field that there is very little reliable information available for this species (Fenner, 2014b). Thus, a high proportion of the information on *M. foveolata*'s distribution and abundance information in the SRR or SIR is likely based on inaccurate field identifications, thus we do not consider this information to be sufficiently reliable, and are unable to provide a reliable species description for *M. foveolata* in this final rule.

Listing Determination

In the proposed rule, *M. foveolata* was proposed for listing as endangered because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

Based on the lack of information on *M. foveolata*'s distribution, abundance, and threat vulnerabilities due to this species' identification uncertainty, we believe there is not sufficient evidence to support a listing determination of threatened or endangered. Therefore, we find that listing is not warranted at this time.

Millepora tuberosa

Introduction

The SRR and SIR provided the following information on *M. tuberosa*'s morphology and taxonomy. *Millepora tuberosa's* colony morphology consists of thin (about 1 mm at encrusting peripheral margins) to moderately thick (3 cm or more in the central regions of larger colonies) encrusting laminae that closely adhere to the underlying substrata. They are always encrusting

and so do not make vertical plates or branches, although they can be nodular or lumpy, especially when they encrust rubble. *Millepora tuberosa* is often found as small colonies (5 to 30 cm diameter) but can be greater than one meter in diameter. The SIR reports that several authors have commented that people could inadvertently misidentify *M. tuberosa* colonies as crustose coralline algae, and the SIR reports it can look similar to *Psammocora nierstrazi* if they have similar color. There is some taxonomic uncertainty, as *M. tuberosa* has been synonymized with *Millepora exaesa* in one review. The problem may be that the skeletons are quite similar, but the living colonies appear quite different, mainly in color; *M. tuberosa* is a wine color, unlike other *Millepora* species.

The public comments and information we gathered did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, which confirmed that *M. tuberosa* has moderate taxonomic uncertainty, but is easily identified. *Millepora tuberosa* is distinctive and not difficult to identify by experts, thus the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *M. tuberosa's* distribution, habitat, and depth range. *Millepora tuberosa* is known from Mauritius, Taiwan, Mariana Islands, Caroline Islands, American Samoa, and New Caledonia. The species occurs in a broad range of habitats on the reef slope, reef crest, and back-reef, including but not limited to lower reef crests, upper reef slopes, and lagoons, from 1 to at least 12 m depth.

Public comments and information we gathered provided new or supplemental information on *M. tuberosa*'s distribution. One public comment stated *M. tuberosa* has been reported from a variety of sources suggesting that its range extends from that shown in the proposed rule westward to Madagascar, indicating a broader distribution than shown in the proposed rule. We gathered supplemental information, including results from surveys carried out from 2005 to 2014 in New Caledonia, American Samoa, the Northern Mariana Islands, Nauru, Tonga, and the Chagos Islands, that confirmed the occurrence of *M. tuberosa* in the first three areas but did not find it in the latter three areas (D. Fenner, personal comm.). Many experts, including Veron, do not record the presence of *Millepora* species, thus the small number of reliable observations for this species likely indicates under-reporting rather than a reflection of its actual distribution or overall abundance. However, surveys by *Millepora* experts have not found the species at all coral reef sites surveyed within the areas encompassed by its known locations. Thus we conclude that the available information suggests a patchy range bounded by east Africa, Taiwan, Mariana Islands, Caroline Islands, American Samoa, and New Caledonia, and that the species' range makes up approximately one third to one half of the coral reef areas within the Indo-Pacific.

Demographic Information

The SRR and SIR provided the following information on *M. tuberosa*'s abundance. The SRR stated that the species is most often reported as occasional, but in Guam it is predominant in an area of lagoonal reef south of Agat Boat Harbor. The SIR cited several sources of information not available in the SRR, and concluded that the species' abundance should be considered common.

The public comments did not provide any new or supplemental information on *M. tuberosa*'s abundance. We gathered supplemental information, including abundance results from surveys conducted in New Caledonia, American Samoa, and the Northern Mariana Islands between 2005 and 2013. In New Caledonia, 87 sites were surveyed from 2006 to 2009, and only a single colony of *M tuberosa* was found. At 67 sites surveyed in American Samoa from 2005 to 2010, *M. tuberosa* was found at 18 sites (of the sites, 31 were on Tutuila, and the species was found at 13 of them). At 22 sites surveyed in the Northern Mariana Islands in 2013, *M. tuberosa* was found at three sites (D. Fenner, personal comm.). At sites where *M. tuberosa* has been actively surveyed (*i.e.,* by coral abundance monitoring programs that includes *Millepora* experts), the available information shows wide variability in the species' abundance, from dominant or common (Guam) to uncommon (Tutuila, Northern Mariana Islands) to rare (New Caledonia). Based on the available information, we conclude that *M. tuberosa*'s overall abundance is common or uncommon overall, but locally rare.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *M. tuberosa,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 59 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 22 percent (Carpenter *et al.,* 2008). This estimated decline is approximately 50 percent higher than most other Indo-Pacific species included in the Carpenter paper, apparently because of the combined restricted geographic and depth ranges. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *M. tuberosa* probably occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The public comments and information we gathered did not provide additional biological information on *M. tuberosa.*

Susceptibility to Threats

The SRR and SIR provided species-specific information on the susceptibility of *M. tuberosa* to sedimentation, predation, and secondary effects of heavy fishing pressure. The relatively high abundance of this species on Guam suggests it is resistant to those threats. Genus-level information is provided for the effects on *Millepora* of ocean warming, disease, predation, land-based sources of pollution (*i.e.,* sedimentation, nutrients, toxins, and salinity), and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *M. tuberosa.* The threat susceptibility and exposure information from the SRR and SIR was interpreted in the proposed rule for *M. tuberosa*'s vulnerabilities to threats as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, acidification, trophic effects of fishing, nutrients, and

low vulnerabilities to predation, sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *M. tuberosa*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Millepora tuberosa* has been rated as moderately or highly susceptible to bleaching but not coral disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Some colonies in American Samoa and Guam have been observed to have a discolored yellow area around part of the perimeter, which appeared to be a non-lethal disease (not all colonies had it, and no mortality was seen. No other disease was seen (Fenner, 2014a). There is no other species-specific information for the exposure or susceptibility of *M. tuberosa* to any threat. Based on information provided in the genus description above, *M. tuberosa* is likely to be highly susceptible to ocean warming, and has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on regulatory mechanisms or conservation efforts for *M. tuberosa*. Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis.

Veron's updated report on the listed coral species and their occurrence in various ecoregions (Veron, 2014) did not include *M. tuberosa*. To determine what countries the species occurs in we used the SRR, IUCN Red List of Threatened Species, and other sources where the species has been confirmed (Fenner, 2011) and conclude that the species occurs in a minimum of six countries' EEZs. Those six countries are the Federated States of Micronesia, France (New Caledonia), Mauritius, Palau, Taiwan, and the United States (CNMI, Guam, American Samoa). As noted in the Spatial Information paragraph above, it is likely the species occurs in a number of other countries, but we cannot determine which ones at this time, thus this management analysis is limited to the six countries where the species has been confirmed.

The regulatory mechanisms available to *M. tuberosa,* described first as a percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms are limited in scope, are as follows: General coral protection (33 percent with none limited in scope), coral collection (67 percent with 17 limited in scope), pollution control (33 percent with 17 percent limited in scope), fishing regulations on reefs (100 percent with 17 percent limited in scope), managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *M. tuberosa* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat utilized. General coral protection and pollution control laws are much less common regulatory mechanisms for the management of *M. tuberosa*.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate, based on genus-level information, is the primary threat of extinction for *M. tuberosa,* which was compounded by the disjunct geographic range. The SRR also stated that factors that potentially reduce the extinction risk are that *M. tuberosa* might be more common than previously observed, and that like other *Millepora* species, it likely has a high capacity for recovering from bleaching.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. tuberosa,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution, based on the available information, includes patchy areas from the western Indian Ocean across the western and central Pacific, as far east as American Samoa. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from zero to at least 12 meters. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes lower reef crests, upper reef slopes, and lagoons, which moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. While the species is locally rare, its overall abundance is common or uncommon. Thus, its overall abundance, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *M. tuberosa* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); narrow overall

distribution (based on narrow geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *M. tuberosa* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *M. tuberosa*'s spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Millepora tuberosa*'s distribution stretches across the Indian Ocean and most of the Pacific Ocean and is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Millepora tuberosa*'s abundance is described as common or uncommon overall which, in terms of relative abundance of corals and in combination with the size of its range, indicates this species likely numbers in the tens or hundreds of millions of colonies, at least. This provides buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses significant buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that *M. tuberosa*'s extinction risk may increase in the future if global threats continue and worsen in severity, likely resulting in the continued decline of this species into the future. As the species experiences reduced abundance or range constriction of a certain magnitude, its ability to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *M. tuberosa* is not warranted for listing at this time under any of the listing factors.

Genus Seriatopora

Genus Introduction

The family Pocilloporidae includes three genera: *Pocillopora, Seriatopora,* and *Stylophora. Seriatopora* contains six species, all occurring in the Indo-Pacific (Veron, 2000). *Seriatopora* species have branching colonies. The SRR and SIR provided no genus-level introductory information on *Seriatopora.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Seriatopora.* Species in the genus *Seriatopora* are highly susceptible to bleaching across regions, including Micronesia the GBR, and the western Indian Ocean. The genus *Seriatopora* is known to be susceptible to predation by snails and the crown-of-thorns seastar, *Acanthaster planci.* The genus *Seriatopora* has been heavily traded, primarily from Fiji and Indonesia (and occasionally the Philippines and Taiwan). Many records are at the genus level; trade was heavy in the mid-1980s (exceeding 134,000 pieces in 1987). *Seriatopora hystrix* is the most heavily exploited species, although *Seriatopora caliendrum* is also exported.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Seriatopora.* We gathered supplemental information, which provided the following. There are several reports of high bleaching and mortality in *Seriatopora* species in response to warming events. In response to the 1998 warming event, *Seriatopora* colonies in Palau had high levels of bleaching with high mortality (Bruno *et al.,* 2001). In response to the same warming event, over half of *Seriatopora* colonies in study sites within Kenyan marine protected areas were killed by mass bleaching (McClanahan *et al.,* 2001). A large study of the bleaching responses of over 100 coral species on the GBR to the 1998 bleaching event included one *Seriatopora* species, *Seriatopora hystrix.* For this species, approximately 40 percent of the observed colonies were bleached, resulting in *S. hystrix* being more affected than most of the Pocilloporidae and Acroporidae species in the study, and one of the 20 most affected species in the entire study (Done *et al.,* 2003b).

In response to a 2008 bleaching event in Papua New Guinea, two Pocilloporidae species (including *S. hystrix*) and 14 Acroporidae species were monitored, and each species' relative susceptibility to bleaching was evaluated in relationship to the other species in the study. Nine of the 16 species, including *S. hystrix,* had moderate susceptibility to bleaching, while five species were rated as severe or high susceptibilities, and two as low. Of the 139 *S. hystrix* colonies monitored in the study, 126 bleached (Bonin, 2012). In response to a 2004 warming event in Mauritius, the genus *Seriatopora* was the most bleached of the 32 genera recorded (McClanahan *et al.,* 2005b). In eight countries in the western Indian Ocean in 1998–2005, the *Seriatopora* genus had a bleaching index of 32, the fourth highest of the 45 genera recorded, and 75 percent of the highest value (McClanahan *et al.,* 2007a).

McClanahan *et al.* (2007a) calculated a relative extinction risk score based on bleaching for genera of corals in the western Indian Ocean. The index of extinction risk was proportional to the degree of bleaching and inversely proportional to the abundance and number of reefs on which a taxon was found. The index of extinction risk for *Seriatopora* was the eighth highest out of 47 genera, with a score of 0.46 based on a scale of zero to one, with one being the score of the highest extinction risk.

With regard to disease, two reports from the GBR provide contrasting information regarding the susceptibilities of *Seriatopora* species to various coral diseases. One study found that Black Band Disease was nearly absent on colonies of *Seriatopora* species (Page and Willis, 2006). In contrast, colonies of *Seriatopora* species

had high susceptibility to Skeletal Eroding Band, with a prevalence of 5.8 percent. Skeletal Eroding Band is the most prevalent disease on the GBR (Page and Willis, 2007). *Seriatopora* in Indonesia was reported to have no diseases (Haapkyla *et al.,* 2007). There is no information available on the effects of any other threat for *Seriatopora* species.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Seriatopora* species to ocean warming, disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance to corals. These were rated as the three most important threats to reef-building corals overall. All studies on thermal stress in *Seriatopora* report high levels of bleaching in response to warming events. Thus, we conclude that *Seriatopora* likely has high susceptibility to ocean warming. Studies reported that one disease did not infect *Seriatopora,* but another did at high prevalence, and no diseases infected it in Indonesia. Thus, we conclude that *Seriatopora* has some susceptibility to disease. Although there is no other genus-level or species-specific information on the susceptibilities of *Seriatopora* species to ocean acidification, the SRR rated it as ''medium-high'' importance to corals. Thus, we conclude that an unstudied *Seriatopora* species has some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, we conclude that an unstudied *Seriatopora* species has some susceptibility to the trophic effects of fishing.

Although there is no genus-level or species-specific information on the susceptibilities of *Seriatopora* species to sedimentation or nutrients, the SRR rated both threats as ''low-medium'' importance to corals. Thus, we conclude that an unstudied *Seriatopora* species has some susceptibility to these threats. Sea-level rise was also rated as ''low-medium'' importance to corals. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Seriatopora* species is likely to have some susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. *Seriatopora* is preyed on by both snails and crown-of-thorns starfish. Thus we conclude that *Seriatopora* has some susceptibility to predation. *Seriatopora* is heavily traded, thus we conclude that *Seriatopora* has some susceptibility to collection and trade.

In conclusion, an unstudied *Seriatopora* species is likely to be highly susceptible to ocean warming, and to have some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Seriatopora aculeata

Introduction

The SRR and SIR provided the following information on *S. aculeata*'s morphology and taxonomy. Morphology was described as thick, short, tapered branches, usually in fused clumps. The taxonomy was described as somewhat uncertain, because genetic studies have not corresponded well with morphology for *S. aculeata* and other species of *Seriatopora*. Similar species, *Seriatopora stellata* and *S. hystrix,* can have similar branching structures in shallow, exposed reef flats.

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there is a moderate level of taxonomic uncertainty for *S. aculeata,* and that there is a moderate level of species identification uncertainty for this species. Veron (Veron, 2014) states that *S. aculeata* is sometimes confused with *S. stellata,* but Veron (Veron, 2000; Veron, 2014) continues to consider it a valid species, and we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *S. aculeata*'s distribution, habitat, and depth range. *Seriatopora aculeata* is distributed from Australia, Fiji, Indonesia, Japan, Papua New Guinea, and Madagascar to the Marshall Islands. The SRR and SIR described *S. aculeata*'s habitat as shallow reef environments, and its depth range as three to 40 meters. The SIR reported it in Guam and the Northern Marianas.

The public comments and information we gathered provided supplemental information on the distribution and habitat of *S. aculeata.* One public comment stated that in Guam, the few specimens of *S. aculeata* observed since 2004 were found in areas with high rates of sedimentation. Thus, based on all the available information, *S. aculeata*'s habitat can be summarized as follows: The species occurs in a broad range of habitats on the reef slope and back-reef, including but not limited to upper reef slopes, mid-slope terraces, lower reef slopes, reef flats, and lagoons. Supplemental information provided the following. Veron (2014) provides an updated, much more detailed range map for this species than the maps used in the SRR. Veron reports that *S. aculeata* is confirmed in 19 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional seven.

Demographic Information

The SRR and SIR provided the following information on *S. aculeata*'s abundance. *Seriatopora aculeata* has been reported as uncommon.

The public comments did not provide any new or supplemental information on *S. aculeata*'s abundance, but the supplemental information provided the following. Veron (2014) reports that *S. aculeata* occupied 10.3 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.70 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common,'' and overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *S. aculeata,* the overall decline in abundance (''Percent Population Reduction'') was estimated

at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *S. aculeata* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *S. aculeata*'s life history. Little is known of *S. aculeata*'s life history. The much more common species, *S. hystrix,* is a simultaneous hermaphrodite that reproduces sexually via brooded larvae. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *S. aculeata*'s threats, the SRR and SIR provided genus-level information for the effects on *Seriatopora* of o ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *S. aculeata,* except for a single export record from Indonesia for four pieces of the species in 2008. We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *S. aculeata*'s vulnerabilities as follows. High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, nutrients, and predation; and low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments provided some supplemental information on *S. aculeata*'s threat susceptibilities. One comment stated that the depth range for *S. aculeata* on the reef slopes of Guam are coincident with those of the crown-of-thorns starfish, both of which are below 5 to 7 meters depth, exposing *S. aculeata* to predation. *Seriatopora aculeata* has been rated as not moderately or highly susceptible to bleaching and disease, but this rating is not based on species-specific data (Carpenter *et al.* 2008). There is no supplemental species-specific information for the susceptibility of *S. aculeata* to any threat. Based on information provided in the *Seriatopora* genus description above, *S. aculeata* is likely to be highly susceptible to ocean warming, and is likely to have some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *S. aculeata* to the threats.

Regulatory Mechanisms.

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *S. aculeata*. Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *S. aculeata* occurs in 19 Indo-Pacific ecoregions that encompass 10 countries' EEZs. The 10 countries are Federated States of Micronesia, France (French Pacific Island Territories), Indonesia, Japan, Palau, Papua New Guinea, Philippines, Solomon Islands, Timor-Leste, and the United States (CNMI, Guam, PRIAs). The regulatory mechanisms available to *S. aculeata,* described first as a percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms are limited in scope, are as follows: General coral protection (40 percent with none limited in scope), coral collection (70 percent with 20 percent limited in scope), pollution control (30 percent with 20 percent limited in scope), fishing regulations on reefs (100 percent with none limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *S. aculeata* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also heavily utilized for the species. General coral protection and pollution control laws are less common regulatory mechanisms for the management of *S. aculeata*.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the primary factor that increases the potential extinction risk is its high bleaching susceptibility. The genus *Seriatopora* is heavily traded, but not often identified to species. Heavy use in the aquarium trade implies the potential for local extirpation for this usually uncommon species.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *S. aculeata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is limited to parts of the Coral Triangle and the western equatorial Pacific Ocean. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range of 40 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. The species

occurs in a broad range of habitats on the reef slope and back-reef, including but not limited to upper reef slopes, mid-slope terraces, lower reef slopes, reef flats, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. There is not enough information about its abundance to determine if it moderates or exacerbates extinction. It is common and has at least millions of colonies, but the great majority of the population is within an area expected to be severely impacted by threats over the foreseeable future. While depth distribution and habitat variability moderate vulnerability to extinction, the combination of its geographic distribution and high susceptibility to ocean warming are likely to be more influential to the status of this species over the foreseeable future, because of the projected severity of ocean warming throughout the species' range in the foreseeable future, and its high susceptibility to this threat.

Listing Determination

In the proposed rule, using the determination tool formula approach, *S. aculeata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we maintain the listing determination for *S. aculeata* as threatened. Based on the best available information provided above on *S. aculeata*'s spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Seriatopora aculeata* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C) ocean acidification (E), trophic effects of fishing (A), nutrients (A, E), and collection and trade (B). In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D); and

(2) *Seriatopora aculeata*'s distribution is constrained to the Coral Triangle and western equatorial Pacific, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the western equatorial Pacific that suggest future ocean warming events may be more severe than average in this part of the world. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *S. aculeata*'s spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While half of *S. aculeata*s' range is within the Coral Triangle which increases its extinction risk as described above, its habitat includes various shallow reef environments down to 40 meters. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, at local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat sub-section and Threats Evaluation section. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species;

(2) *Seriatopora aculeata* occurs down to at least 40 m so its depth range will provide some refugia from threats because deeper areas of its range will usually have lower irradiance than surface water, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs; and

(3) *Seriatopora aculeata's* absolute abundance is at least millions of colonies, which allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *S. aculeata.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Genus Acropora, Indo-Pacific

Genus Introduction

The SRR and SIR provided an introduction to Indo-Pacific *Acropora,* covering geological history, taxonomy, life history, and threat susceptibilities of the genus as a whole. *Acropora* colonies are usually branching, bushy, or plate-like, rarely encrusting or submassive. *Acropora* is by far the largest genus of corals with over 150 species, and dominates many reefs, making *Acropora* the most important single genus of corals in the world. Almost all species of *Acropora* are in the Indo-Pacific.

Genus Susceptibility to Threats

The SRR and SIR provided the following information on genus-level threat susceptibilities for Indo-Pacific *Acropora. Acropora* are widely reported to be more sensitive to bleaching in response to high temperatures than other coral genera. Some studies report branching species of *Acropora* to bleach more than table species, but other studies do not find this. Bleaching mortality in *Acropora* can be very severe. Larval connectivity and survival of partially-dead colonies are probably

important in population recovery. Bleaching of *Acropora* has been followed by disease outbreaks and by reduced fecundity for a year or two. Fertilization and larval stages of *Acropora* are particularly sensitive to high temperatures.

Ocean acidification decreases the rate of calcification in *Acropora.* For one species of *Acropora* in the Caribbean, decreases in growth rates on reefs over decades has been attributed to acidification. Acidification negatively affects a variety of stages of reproduction in *Acropora.*

Acropora are vulnerable to most of the diseases that infect coral, and are more commonly affected by acute and lethal diseases (''white diseases'' or tissue loss) than other corals. Such lethal diseases have been the major cause of the loss of most *Acropora* in the Caribbean. The reduction of coral populations by disease leads to negative synergisms, as it reduces *Acropora* reproductive output and can lead to recruitment failure, making population recovery very difficult.

Acropora are preferred prey for most predators that prey on coral, including the crown-of-thorns starfish, a variety of snails including *Drupella,* butterflyfish, and fireworms. Individual territorial butterflyfish can take 400–700 bites per hour, and butterflyfish densities can be 50–70 per 1000m^2, demonstrating possible intense predation on *Acropora. Acropora* have low carbon and protein content in their tissues so a low nutrient value, yet are still preferred prey. This suggests that instead of investing in chemical defenses against predation, *Acropora* invests its energy in rapid growth. However, when coral populations are greatly reduced, the predatory pressure is increased on colonies, and can exert a positive-feedback effect (Allee Effect or depensation) that makes populations unstable and can lead to collapse or lack of recovery.

In general, *Acropora* species are relatively more susceptible to the effects of sedimentation than many other reef-building corals. Though certain growth forms (*e.g.,* cylindrical branches) may be more effective at passive sediment rejection than others, *Acropora* are generally not adept at actively removing sediment. *Acropora* have also shown particular sensitivity to shading, an effect of turbid waters resulting from sedimentation. In addition, adult colonies of *Acropora* have reportedly shown impacts from sedimentation especially during reproduction.

Acropora species are also relatively more susceptible to the effects of nutrients, especially with regard to reproduction and recruitment. Elevated nutrients have been shown to reduce fertilization success, survival, and settlement of *Acropora* larvae. Further, iron-rich ''red'' soils typical of tropical islands, as well as other chemicals in run-off, interfere with synchronization of spawning among colonies, egg-sperm recognition and interactions, fertilization, and embryo development.

Acropora species are heavily collected and widely traded internationally. Trade quotas and reports are typically listed only at the genus level, making any species-specific inferences with regard to this threat very difficult.

The public comments did not provide any supplemental information on genus-level threat susceptibilities for Indo-Pacific *Acropora.* However, we gathered supplemental information, which provides the following genus-level information on threat susceptibilities of Indo-Pacific *Acropora* for ocean warming, disease, ocean acidification, and predation. With regard to susceptibility to ocean warming, Fisk and Done (1985) report bleaching patterns on a site on the Great Barrier Reef in 1982 to 1983. Most species of *Acropora* in shallow water had significant mortality, but *Acropora hyacinthus* did not. Mortality varied by species and site. Brown and Suharsono (1990) reported that the 1983 El Niño caused a mass bleaching event in the Thousand Islands, Indonesia. The mass bleaching event killed all *Acropora* (22 species) in the transects on the reef flats of two islands (Brown and Suharsono, 1990). Gleason (1993) reported that *Acropora* was the second most affected genus by bleaching (*Montastraea* was the most affected) in Moorea, French Polynesia in 1991, and that it had the greatest mortality. McClanahan *et al.* (2001) report that almost all *Acropora* in study sites in Kenya were killed by mass bleaching in 1998. Kayanne *et al.* (2002) reported that in 1998 in the Ryukyu Islands of Japan, branching *Acropora* was susceptible to bleaching and mortality was high. The branching species in this study were primarily *A. formosa* (= *A. muricata*) and also *A. pulchra* and *A. palifera* (= *Isopora palifera*). Hughes *et al.* (2003) reported that 11 *Acropora* species ranged from 0 to 100 percent affected by bleaching in Raiatea, French Polynesia, in 2002. Done *et al.* (2003b) reported that 46 *Acropora* species ranged from 0 to 44 percent affected by bleaching on the Great Barrier Reef in 2003.

Based on a bleaching index scaled from 0 to 100 (with 0 as no bleaching and 100 as complete bleaching), McClanahan *et al.* (2004) reported that during mass bleaching in 1998, *Acropora* had a higher index in Kenya (80) than in Australia (40); temperatures were higher in Kenya. *Acropora* in Mauritius had an index of 39, the fifth highest of the 32 genera recorded, following a 2004 bleaching event (McClanahan *et al.,* 2005a). *Acropora* had an index of 28.9 for eight countries in the western Indian Ocean in 1998–2005, which was fifth highest of the 45 genera recorded (McClanahan *et al.,* 2007a). The abundance of *Acropora* after 1998 in the western Indian Ocean decreased strongly in proportion to the number of degree heating weeks in 1998 (McClanahan *et al.,* 2007b). Based on a bleaching index scaled from 0 to 250 (with 0 as no bleaching and 250 as complete bleaching), Pandolfi *et al.* (2011) report that *Acropora* bleached heavily in Kenya and moderately in Australia in 1998, with scores of 225 and 120, respectively. *Acropora* had a moderate percentage of bleaching on Howland and Baker islands in the U.S. Pacific in early 2010, with 28.7 percent bleached on Baker and 47.7 percent on Howland. *Acropora* was the fifth most-bleached genus out of 14 genera, and was 60 percent as bleached as the most bleached genus (Vargas-Angel *et al.,* 2011).

During a mass-bleaching event in Western Australia in 2010–2011, *Acropora* had the highest mortality with 100 percent mortality of colonies larger than 10 cm diameter in size, and *Montipora* the second highest mortality, while massive and encrusting corals, such as *Porites* and faviids, had much higher survival rates. Colonies less than 10 cm diameter were not killed (Depczynski *et al.,* 2012). *Acropora* in the turbid waters off Okinawa, Japan, experienced sharp drops in populations following the 1998 and 2010 mass bleaching episodes (Hongo and Yamano, 2013). Sutthacheep *et al.* (2013) report that all colonies of one species of *Acropora* were completely bleached at Laem Set at Samui Island in the western Gulf of Thailand in 1998 and 80 percent of the colonies of the other reef-building coral species were as well. In 2010, 80 percent colonies of one species were completely bleached and all colonies of the other species were partly bleached. After the 1998 bleaching event, 72 percent of colonies had complete mortality, and after the 2010 event, all bleached colonies had complete mortality.

Bleaching does not always result in mortality, thus it is important to consider bleaching-induced mortality and bleaching rates from a single event, as well as the recovery of a population over time to a bleaching event. In Kenya

in 1998, mortality in *Acropora* was sixth highest of the 18 genera, and 55 percent of the genus with the most mortality (McClanahan, 2004). Three species of *Acropora* were long-term winners following mass bleaching events in Japan (decreasing from 3.4 percent cover to 0 percent then increasing to 3.5 percent; decreasing from 0.2 percent to 0 percent and then increasing to 3.2 percent; decreasing from 1.2 percent cover to 0 percent and then increasing to 0.7 percent), and one species was neither a winner or a loser (van Woesik *et al.,* 2011). Bridge *et al.* (2013a) report that *Acropora* mortality after bleaching was higher than for all corals as a whole. Total coral mortality at 0 to 2 m depth was 70 percent, while it was 90 percent for *Acropora,* and at 3 to 4 m depth it was 20 percent for all corals but 60 percent for *Acropora* (Bridge *et al.,* 2013a).

Species or genera that readily bleach but recover quickly are relatively resilient to warming-induced bleaching. For example, the genus *Acropora* received a +1 resilience score based on trait and process scores assigned to the genus (van Woesik *et al.,* 2012). Traits and processes were chosen which were thought to confer resilience to climate change. Resilience scores of 16 Indo-Pacific genera that were evaluated varied between +7 and −5. Scores below 0 were correlated with a high extinction probability (van Woesik *et al.,* 2012). McClanahan *et al.* (2007a) calculated a relative extinction risk score based on bleaching for genera of corals in the western Indian Ocean. The index of extinction risk was proportional to the degree of bleaching and inversely proportional to the abundance and number of reefs on which a taxon was found. The index of extinction risk for *Acropora* was the ninth lowest out of 47 genera, with a score of 0.11 based on a scale of 0 to 1, with 1 being the score of the highest extinction risk (McClanahan *et al.,* 2007a).

Diseases have been reported to be more common in *Acropora* than in other corals in some areas of the Indo-Pacific, such as the Northwest Hawaiian Islands (Aeby, 2006) and American Samoa (Fenner *et al.,* 2008). However, in the Philippines, *Porites* was the dominant host with almost all disease observed in that genus, and only rarely observed on *Acropora* (Raymundo *et al.,* 2005). In New Caledonia, *Turbinaria* had the highest disease prevalence of any genus with 2.5% infected, while *Acropora* was tied with *Montipora* for the least disease among the 12 most common genera affected, with less than 0.1% infected (Tribollet *et al.,* 2011). On the Great Barrier Reef, Pocilloporidae and Acroporidae have the highest prevalence of families, and diseases have been recorded on at least 23 species of *Acropora* (Willis *et al.,* 2004). Black band disease on the Great Barrier Reef is concentrated in staghorn *Acropora* species with 76 diseased colonies counted in one study, and *Acropora* species with other colony morphologies (tables, bushy, corymbose, digitate, bottlebrush) had far fewer diseased colonies (Page and Willis, 2006). In American Samoa, French Frigate Shoals (Hawaii) and Johnston Atoll, two species of table *Acropora* (*A. hyacinthus* and *A. cytherea*) had larger numbers of colonies (13 each) with growth anomalies in transects than any of 10 other taxa, and much higher than one other table coral (*A.* clathrata, with one; Work *et al.,* 2008). In Indonesia, bushy *Acropora* had the highest prevalence (8%) of disease of any taxon (out of 35 taxa), while corymbose *Acropora* was the eighth highest taxon and second highest *Acropora* group with 0.5 percent disease, and all other *Acropora* groups (tabulate, bottlebrush, digitate, and staghorn) had 0 percent disease (Haapkyla *et al.,* 2007).

Ocean acidification can have a variety of effects on Indo-Pacific *Acropora* species. While increased CO_2 does not appear to affect the survival of unidentified *Acropora* larvae, postsettlement skeletal growth of the polyps of unidentified *Acropora* species (Suwa *et al.,* 2010) and *A. digitifera* (Inoue *et al.,* 2011) are impaired. In addition, increased CO_2 impairs the rate of zooxanthellae acquisition in the polyps of *A. digitifera* (Inoue *et al.,* 2011) and *A. millepora* (Kaniewska *et al.,* 2012). In Caribbean *Acropora* species, fertilization and settlement are impaired by increased CO_2 (Albright *et al.,* 2010). Elevated CO_2 also induces bleaching in *Acropora,* even more so than temperature increases (Anthony *et al.,* 2008). Carbon dioxide enrichment to 600 to 790 ppm enhanced maximum photosynthetic rates in *A. formosa* (Crawley *et al.,* 2010), but elevated CO_2 levels had no effect on photosynthesis or respiration in *A. eurystoma* (Schneider and Erez, 2006). A study of the effects of near-term ocean acidification and elevated seawater temperature on the physiology of *A. aspera* suggested that gene expression of key metabolic proteins is impacted by the synergistic effects of near term ocean acidification (*i.e.,* the conditions expected to result from 50–90 ppm CO_2 above current atmospheric levels) and ocean warming (Ogawa *et al.,* 2013a). Physical factors may moderate impacts of acidification, as shown by a study of *A. hyacinthus,* which found that natural daily oscillations in CO_2 may reduce the locally negative effects of increasing ocean acidification (Comeau *et al.,* 2014). Moderate increases in CO_2 may enhance *Acropora* growth and calcification rates in some species, however, at higher CO_2 levels, growth and calcification rates drop to zero. More consistently across species, elevated CO_2 tends to decrease *Acropora* growth and calcification rates (Anthony *et al.,* 2008; Chauvin *et al.,* 2011; Purkis *et al.,* 2011; Schneider and Erez, 2006; Suggett *et al.,* 2013). *Acropora* species appear to be more susceptible to acidification than most other genera, as demonstrated by the lack of *Acropora* species in coral communities existing in naturally low pH waters (Fabricius *et al.,* 2011).

With regard to predation, De'ath and Moran (1998) reported that *Acropora* was the most preferred prey of crown-of-thorns starfish out of the 10 most common genera on 15 reefs in the Great Barrier Reef (preferred 14:1 over *Porites,* the least preferred genus). Pratchett (2001) reported that in a choice experiment, crown-of-thorns starfish always ate *Acropora* colonies before eating colonies of other genera. This was true of all four of the *Acropora* species tested. When a crown-of-thorns starfish has finished eating preferred species, it moves to eating less preferred species, and thus in an outbreak, almost all species may be eaten (Pratchett *et al.,* 2001). The snail *Drupella rugosa* preferred to eat *Acropora pruinosa* over *Montipora informis,* one agaricid and four faviid corals in laboratory tests in Hong Kong (Morton *et al.,* 2002).

The public comments did not provide any supplemental information on genus-level threat susceptibilities for Indo-Pacific *Acropora.* We gathered the supplemental information above, which provides genus-level information on threat susceptibilities of Indo-Pacific *Acropora* for ocean warming, disease, ocean acidification, and predation. We did not gather any supplemental information on the other threats (*i.e.,* sedimentation, nutrients, trophic effects of fishing, sea-level rise, or collection and trade).

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we make the following inferences regarding the susceptibilities of an unstudied *Acropora* species to ocean warming, disease, ocean acidification, predation, sedimentation, nutrients, trophic effects of fishing, sea-level rise, and collection

and trade. Nearly all the studies cited on thermal stress in *Acropora* report high levels of bleaching in response to warming events. Thus, it is possible to predict that an unstudied *Acropora* species is likely to be highly susceptible to warming-induced bleaching, as long as some considerations are kept in mind: (1) Despite high overall susceptibility within the genus to warming-induced bleaching, there can be high variability between species and habitats (Done *et al.,* 2003b); (2) colonies that bleach do not necessarily die (in general, *Acropora* species have higher post-bleaching mortality than corals as a whole, but there is high variability in response throughout the genus); (3) recovery from bleaching provides the mechanism for acclimatization; and (4) while most *Acropora* species readily bleach in response to warming events, most also have the capacity to reestablish local populations relatively quickly through their rapid growth and asexual reproduction capacity.

The studies cited above suggest that diseases are generally more common in *Acropora* than other coral genera, although there are numerous documented exceptions, depending on location. These studies also demonstrate high variability in disease susceptibility across *Acropora* species, depending on growth form, with wide divergence of disease susceptibilities among colony morphological groups under the same conditions. Thus, it is possible to predict that an unstudied *Acropora* species is likely to have some susceptibility to disease.

The studies cited above on ocean acidification in *Acropora* report impacts on skeletal growth rates. Thus, it is possible to predict that an unstudied *Acropora* species is likely to have some susceptibility to ocean acidification in terms of impacts on skeletal growth. The studies cited above on predation in *Acropora* report that predators such as crown-of-thorns starfish and *Drupella* snails prefer to eat *Acropora* over other genera. Thus, it is possible to predict that an unstudied *Acropora* species is likely to have some susceptibility to predation. Most studies summarized in the SRR on the effects of land-based sources of pollution suggest that an unstudied *Acropora* species is likely to have some susceptibility to sedimentation and nutrient enrichment.

The SRR rated the trophic effects of fishing as ''medium'' importance, and it was the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Accordingly, an unstudied *Acropora* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sea-level rise as ''low-medium'' importance to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may provide new coral habitats by submergence of hard substrates; however sea-level rise is also likely to increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, most likely to sediment-tolerant assemblages and slower-growing species. Because *Acropora* are not generally sediment-tolerant and are faster growing species, an unstudied *Acropora* species is likely to have some susceptibility to sea-level rise.

The SRR rated ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall, and this threat was addressed at both the genus and species levels in the SRR. Because *Acropora* species are some of the most popular coral species to collect and trade, an unstudied *Acropora* species is likely to have some susceptibility to collection and trade.

In conclusion, an unstudied *Acropora* species is likely to be highly susceptible to ocean warming and to have some susceptibility to disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade.

Acropora aculeus

Introduction

The SRR and SIR provided the following information on *A. aculeus'* morphology and taxonomy. Morphology was described as small bushy colonies with flat tops, and taxonomy was described as having no taxonomic issues but being similar in appearance to *A. latistella.*

The public comments and information we gathered provided information on the morphology or taxonomy of *A. aculeus.* One public comment stated that specimens collected in the Mariana Islands and identified by coral expert Richard H. Randall as *A. aculeus* appear to be different than colonies described as *A. aculeus* in references used in the SRR. Also, one public comment stated that specimens collected in American Samoa and identified by the American Samoa Department of Marine and Water Resources as *A. jacquelineae* appear to be *A. aculeus,* thereby illustrating the species identification uncertainties associated with this species. In addition, we gathered supplemental information, including Veron (2014), which states that this species is distinctive. Thus, while the public comments and supplemental information provided some information on the taxonomy of *A. aculeus,* we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. aculeus'* distribution, habitat, and depth range: *Acropora aculeus* is distributed from East Africa to the Pitcairn Islands in the eastern Pacific. The SRR and SIR reported the species as having the 15th largest range of 114 *Acropora* species in a large study. Its predominant habitat is shallow lagoons, and it is also found in other habitats protected from direct wave action on back-reefs and reef slopes, and its depth range is low tide to at least 20 m.

The public comments did not provide any new or supplemental information on *A. aculeus'* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 68 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 16. Wallace (1999b) reports its occurrence in 24 of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions. Richards (2009) calculated the geographic range of *A. aculeus* at over 100 million km^2. The public comments and information we gathered provided nothing additional on *A. aculeus'* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. aculeus'* abundance. *Acropora aculeus* has been reported as generally common and locally abundant, especially in the central Indo-Pacific, and that it is particularly abundant in shallow lagoons and common in most habitats where it is protected from direct wave action.

The public comments did not provide any new or supplemental information on *A. aculeus'* abundance. We gathered supplemental information, including

Richards (2009) and Richards *et al.* (2013b), which concluded that this species is globally widespread, locally widespread, and locally common. Based on these results, the authors concluded that *A. aculeus* is among the most abundant *Acropora* species, and also among those *Acropora* species that are most likely to persist in the future. They placed 12 species in this category out of 85 species of *Acropora.* Veron (2014) reports that *A. aculeus* occupied 32.1 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.55 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was described as ''usually common in the central Indo-Pacific, uncommon elsewhere.'' Veron did not infer abundance trend results from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. aculeus,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparisons sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred and are occurring from a combination of global and local threats. Given that *A. aculeus* occurs in many areas affected by these broad changes, and that it is likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. aculeus'* life history. *Acropora aculeus* is a hermaphroditic spawner that is a participant in mass broadcast spawning in some localities. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *A. aculeus'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. aculeus.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. aculeus'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, acidification, trophic effects of fishing, nutrient over-enrichment, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments provided some supplemental information on *A. aculeus'* threat susceptibilities. One comment stated that *A. aculeus* is more susceptible to predation than indicated in the proposed rule because of the overlap in the depth ranges of this species with crown of thorns starfish. In addition, we gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora aculeus* has been rated as moderately or highly susceptible to bleaching, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Done *et al.* (2003b) report 20 percent of *A. aculeus* colonies were affected by bleaching on the GBR in 2002, and the species ranked 31st in proportion of coral colonies on the GBR that were bleached and killed out of 52 studied *Acropora* species. That is, 30 of the 52 species bleached more than *A. aculeus,* and 21 bleached less. Bonin (2012) reported that *A. aculeus* had a ''high'' susceptibility to bleaching in Kimbe Bay, Papua New Guinea on a scale of ''severe,'' ''high,'' ''moderate,'' and ''lowest.'' *Acropora aculeus* was fourth highest out of 16 species, with 50 percent of colonies either severely bleached or dead. The most severely affected species had 74 percent of colonies either severely bleached or dead (Bonin, 2012).

Acropora aculeus has been rated as moderately or highly susceptible to disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Page and Willis (2007) reported that Skeletal Eroding Band has been found in *A. aculeus.* Skeletal Eroding Band is the most prevalent disease on the Great Barrier Reef. They also reported that corymbose *Acropora* had moderate susceptibility to Skeletal Eroding Band in the Great Barrier Reef, with a prevalence of 2.4 percent (Page and Willis, 2007). No other species-specific information is available for the susceptibility of *A. aculeus* to any other threat.

Based on information from other *Acropora* species provided in the genus description above, *A. aculeus* may be susceptible to the effects of ocean acidification on skeletal growth. Genus-level information also suggests that *A. aculeus* is susceptible to trophic effects of fishing, sedimentation, nutrients, predation, sea-level rise, and collection and trade. Thus, based on the available species-specific and genus information summarized above, *A. aculeus* is likely highly susceptible to ocean warming, and also likely has some susceptibilities to disease, acidification, trophic effects of fishing, sedimentation, nutrients, predation, sea-level rise, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. aculeus* to the threats.

Regulatory Mechanisms

In the proposed rule we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. aculeus.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *A. aculeus* occurs in 68 Indo-Pacific ecoregions that encompass 39 countries' EEZs. The 39 countries are Australia, Bangladesh, Brunei, China, Comoros Islands, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (including Andaman and Nicobar Islands), Indonesia, Japan, Kenya, Kiribati, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Mozambique, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Seychelles, Solomon Islands, South Africa, Sri Lanka, Taiwan, Tanzania, Thailand, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory and Pitcairn Islands), United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, and

Vietnam. The regulatory mechanisms relevant to *A. aculeus,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (28 percent with 8 percent limited in scope), coral collection (56 percent with 31 percent limited in scope), pollution control (38 percent with 10 percent limited in scope), fishing regulations on reefs (95 percent with 26 percent limited in scope), and managing areas for protection and conservation (97 percent with 8 percent limited in scope). The most common regulatory mechanisms in place for *A. aculeus* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat common for the species, but 31 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are much less common regulatory mechanisms for the management of *A. aculeus.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. aculeus.* It listed factors that reduce *A. aculeus'* threat of extinction including its geographic range, depth range, abundance, and variable habitats.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. aculeus,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from low tide to at least 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its predominant habitat is shallow lagoons, and it is found in other habitats protected from direct wave action on back-reefs and reef slopes. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. aculeus* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. aculeus* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. aculeus'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora aculeus'* distribution across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future);

(2) *Acropora aculeus'* total absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and

worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. aculeus* is not warranted for listing at this time under any of the listing factors.

Acropora acuminata

Introduction

The SRR and SIR provided the following information on *A. acuminata's* morphology and taxonomy. Morphology was described as typically forming a tabular base of fused horizontal branches that turn upward and taper to points, and the taxonomy was described as having no taxonomic issues, but colonies turn black when dried.

The public comments and information we gathered provided information on the morphology or taxonomy of *A. acuminata.* One public comment letter stated that specimens of *A. acuminata* in the Mariana Islands may be a different species or a distinct sub-species, based on colony morphology. We gathered supplemental information, including Veron (2014), which states that this species is distinctive. While the public comments and supplemental information provided some information on the morphology and taxonomy of *A. acuminata,* it is sufficiently distinctive to be identified by experts, thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. acuminata's* distribution, habitat, and depth range. *Acropora acuminata's* distribution is from the Red Sea to the Pitcairn Islands in the eastern Pacific, covering 110 million km^2, the 5th largest range of 114 *Acropora* species in a large study. In general, its habitat is upper reef slopes and mid-slope terraces and shelves in turbid or clear water at 15–20 m of depth. In Guam, its habitat is deeper reef flat areas and channel slopes.

The public comments and information we gathered provided information on the distribution and habitat of *A. acuminata.* One public comment letter stated that *A. acuminata* in the Mariana Islands appears to be restricted to reef flats and upper reef slopes in protected to semi-protected areas. Thus, based on all the available information, *A. acuminata's* habitat can be summarized as follows: Its predominant habitat is upper reef slopes and mid-slope terraces and shelves in turbid or clear water, and it also occurs in back-reef habitats including reef flats and channels. Its depth range is approximately two to 20 m depth. We gathered supplemental information, including Veron (2014), which reports that *A. acuminata* is confirmed in 60 of his 133 Indo-Pacific ecoregions and is strongly predicted to be found in an additional 12. Wallace (1999b) reports its occurrence in 23 of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions.

Demographic Information

The SRR and SIR provided the following information on *A. acuminata's* abundance. *Acropora acuminata* has been reported to occasionally live in extensive clumps with dimensions of several meters, and it can be very common in the center of its range (*e.g.,* Indonesia), but it can be uncommon in the outer parts of its range. The public comments and information we gathered provided information on the abundance of *A. acuminata.* A public comment letter stated that *A. acuminata* in the Mariana Islands is uncommon to rare. We gathered supplemental information, including Richards (2009) and Richards *et al.* (2013b), which conclude from their data that this species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of persistence. They placed 39 species in this category out of 85 species of *Acropora.* Veron (2014) reports that *A. acuminata* occupied 4.7 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.21 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''sometimes common.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. acuminata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. acuminata* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. acuminata's* life history. Like most of its congeners, *A. acuminata* is a broadcast spawner. However, some degree of reproductive isolation probably occurs in some locations because the species does not spawn synchronously with the majority of its congeners. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *A. acuminata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also stated that *Acropora acuminata* is the only *Acropora* known to not be preferred as prey by the crown-of-thorns starfish, thus susceptibility to predation appears to be low. The SRR and SIR did not

provide any other species-specific information on the effects of these threats on *A. acuminata.* The threat susceptibility and exposure information from the SRR and SIR was interpreted in the proposed rule for *A. acuminata's* vulnerabilities to threats: High vulnerability to ocean warming; moderate vulnerability to disease, acidification, trophic effects of reef fishing, and nutrient over-enrichment; and low vulnerability to sedimentation, sea-level rise, predation, and collection and trade.

Public comments did not provide any information on *A. acuminata's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora acuminata* has been rated as moderately or highly susceptible to bleaching and coral disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Based on information from other *Acropora* species provided in the genus description above, *A. acuminata* likely has high susceptibility ocean warming, and also has some susceptibilities to coral disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. Thus, based on the available species-specific and genus information summarized above, *A. acuminata* is likely highly susceptible to ocean warming, likely has some susceptibilities to disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, and collection and trade, and also has low susceptibility to predation.

Regulatory Mechanisms

In the proposed rule we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. acuminata.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *A. acuminata* occurs in 60 Indo-Pacific ecoregions that encompass 42 countries' EEZs. The 42 countries are Australia, Brunei, China, Comoros Islands, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Japan, Jordan, Kiribati, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, Nauru, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sri Lanka, Sudan, Taiwan, Thailand, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory, Pitcairn Islands), United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms available to *A. acuminata,* described first as a percentage of the above countries that utilize them to any degree, and second as the percentages of those countries whose regulatory mechanisms may be limited in scope, are general coral protection (29 percent with 7 percent limited in scope), coral collection (60 percent with 29 percent limited in scope), pollution control (45 percent with 7 percent limited in scope), fishing regulations on reefs (90 percent with 21 percent limited in scope), and managing areas for protection and conservation (93 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. acuminata* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 29 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. acuminata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. acuminata.* It listed factors that reduce the threat of extinction including the very wide geographic range, the broad depth range, the fact that it is often common and sometimes abundant, and the somewhat broad range of suitable habitats for *A. acuminata.*

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. acuminata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from 15 to at least 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes multiple habitat types on both the reef slope and back reef. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. In addition, turbidity can mitigate against the effects of high irradiance by blocking it from the water column in turbid environments. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and ocean acidification across the species' range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula, *A. acuminata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide

abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. acuminata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. acuminata's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora acuminata*'s distribution across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species' range. As explained in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species' range within the foreseeable future;

(2) *Acropora acuminata*'s total absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all the individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. acuminata* is not warranted for listing at this time under any of the listing factors.

Acropora aspera

Introduction

The SRR and SIR provided the following information on *A. aspera*'s morphology and taxonomy. The morphology was described as arborescent or bushy clumps which may have largely vertical branches, and the taxonomy was described as having no taxonomic issues.

The public comments did not provide supplemental information on morphology. We gathered supplemental information, including van Oppen *et al.* (2001), which found that *A. aspera* is the only genetically distinct member of the *A. aspera* group of *Acropora* species, a group of morphologically similar species that hybridize at least occasionally. Other supplemental information we gathered was Veron (2014), which states that *A. aspera* is distinctive, thus we conclude it is sufficiently distinctive to be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. aspera*'s distribution, habitat, and depth range. *Acropora aspera* is distributed from the Red Sea to the Samoan Islands. The species has a relatively broad range, the 46th largest range of 114 *Acropora* species in a large study. It occurs in a broad range of habitats and its depth range as low tide to at least 10 m.

The public comments did not provide supplemental information on *A. aspera*'s distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 68 of his 133 Indo-Pacific ecoregions, and is strongly predicted to be found in an additional 17. Wallace (1999b) reports its occurrence in 21 of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions, and Richards (2009) calculated the geographic range of *A. aspera* at 70 million km^2. Wallace (1999b) describes its habitat as ''intertidal/shallow subtidal,'' and in much of its range the species is confined to reef flats. Thus, based on all the available information, *A. aspera's* habitat can be summarized as follows: The species occurs in a broad range of habitats on the reef slope and back-reef, including but not limited to lower reef crests, upper reef slopes, reef flats, and lagoons. Its depth range is approximately low tide to 20 m depth.

Demographic Information

The SRR and SIR provided the following information on *A. aspera*'s abundance. *Acropora aspera* has been reported as sometimes locally common and it can occasionally live in extensive clumps with dimensions of several meters.

The public comments and information we gathered provided information on the abundance of *A. aspera.* One public comment letter stated that *A. aspera* is relatively limited in abundance in Guam compared to co-occurring arborescent species such as *Acropora pulchra* and *Acropora muricata.* We gathered supplemental information, including Veron (2014), which reports that *A. aspera* occupied 7.5 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.76 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was described as ''sometimes common.'' Veron did not infer trends in abundance from these data. *Acropora aspera* is a reef flat species, and reef flats have a larger global area than reef slopes (Vecsei, 2004). This information is relevant because most coral abundance surveys are carried out only on reef slopes, and thus may significantly underestimate the abundance of species such as *A. aspera* that are more common

on reef-flats than reef slopes. In American Samoa, *A. aspera* forms clumps on reef flats many meters across, as much as about 100 m some places (D. Fenner, personal comm.). Richards (2009) and Richards *et al.* (2013b) conclude from their data that this species is globally widespread, locally restricted, and locally common, and thus in one of the categories of highest abundance with the predicted consequence of persistence. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. aspera,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences of species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. aspera* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. aspera*'s life history. *Acropora aspera* is a hermaphroditic spawner. While it is a participant in mass broadcast spawning in some localities, asynchronous gamete development on the Great Barrier Reef and New Caledonia may provide a degree of reproductive isolation, although *A. aspera* has been shown to hybridize with other acroporids. Gamete development in *A. aspera* may be aborted in years with storm impacts. Asexual reproduction can account for the majority of *A. aspera* population structure in certain areas and can lead to local dominance.

The public comments provided no supplemental biological information. We gathered the following information. In a study of biological traits of coral species, Darling *et al.* (2012) found that all of over 30 *Acropora* species studied were classified as ''competitive'' species which were considered to be less tolerant of environmental stress and disturbance than those species that were classified as ''stress-tolerant,'' ''generalist,'' or ''weedy'', because of documented shifts in coral communities from ''competitive'' to the other categories. *Acropora aspera* was one of the *Acropora* species studied, and was classified as ''competitive'' as were all other *Acropora* species.

Susceptibility to Threats

To describe *A. aspera*'s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. aspera.* The threat exposure and susceptibility information from the SRR and SIR was interpreted in the proposed rule for *A. aspera's* vulnerabilities to threats as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide supplemental information on *A. aspera*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora aspera* was rated as moderately or highly susceptible to bleaching and disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Done *et al.* (2003b) reported that 33 percent of *A. aspera*'s colonies on the GBR were affected by bleaching in 2002, and the species ranked 9th in proportion of coral colonies that were bleached out of 52 studied *Acropora* species. That is, eight of the 52 species bleached more than *A. aspera,* and 43 bleached less.

Acropora aspera experiences sub-acute black-band disease (UNEP, 2010), as well as ciliate infections (Antonius and Lipscomb, 2000). Page and Willis (2007) reported that Skeletal Eroding Band has been found in *A. aspera.* They also reported that bushy *Acropora* had high susceptibility to Skeletal Eroding Band on the GBR, with a prevalence of 3.1 percent. Skeletal Eroding Band is the most prevalent disease on the GBR. A study of the effects of near-term ocean acidification and elevated seawater temperature on the physiology of *A. aspera* suggested that gene expression of key metabolic proteins is impacted by the synergistic effects of near term ocean acidification (*i.e.,* the conditions expected to result from 50 to 90 ppm CO_2 above current atmospheric levels) and ocean warming (Ogawa *et al.,* 2013b). *Acropora aspera* is a preferred prey of crown-of-thorns seastar (Sonoda and Paul, 1993). With regard to sedimentation, *A. aspera* was found to be relatively tolerant of silty, turbid water in the South China Sea (Latypov and Dautova, 2005). No other species-specific information is available for the susceptibility of *A. aspera* to any other threat.

Based on the available genus-level and species-specific information, *A. aspera* is likely highly susceptible to ocean warming, and it also likely has some susceptibilities to disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. aspera* to the threats.

Regulatory Mechanisms

In the proposed rule we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. aspera.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *Acropora aspera* occurs in 68 Indo-Pacific ecoregions that encompass 44 countries' EEZs. The 44 countries are Australia (including Cocos-Keeling Islands), Bahrain, Brunei, Cambodia, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (including Andaman and Nicobar Islands), Indonesia, Iran, Japan, Kiribati, Kuwait, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, New Zealand (Tokelau), Niue, Oman, Palau, Papua New Guinea, Philippines, Qatar, Samoa, Saudi Arabia, Seychelles, Singapore, Solomon Islands, Sri Lanka, Taiwan, Thailand, Timor-Leste, Tonga, Tuvalu, United Arab Emirates, United Kingdom (British Indian Ocean Territory), United

States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms available to *A. aspera,* described first as a percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms are limited in scope, are as follows: General coral protection (32 percent with 9 percent limited in scope), coral collection (52 percent with 25 percent limited in scope), pollution control (43 percent with 7 percent limited in scope), fishing regulations on reefs (91 percent with 23 percent limited in scope), and managing areas for protection and conservation (89 percent with 9 percent limited in scope). The most common regulatory mechanisms in place for *A. aspera* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 25 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. aspera.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. aspera.* It listed factors that reduce the threat of extinction including the wide geographic range, the fact that it is often common and sometimes abundant, and the somewhat broad range of suitable habitats for *A. aspera.*

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. aspera,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from low tide to at least 10 meters. Assuming that the species' depth distribution is limited to 10 meters, this exacerbates vulnerability to extinction over the foreseeable future because shallow areas are more likely to be affected by warming-induced bleaching and disease than deeper areas. Its habitat includes lower reef crests, upper reef slopes, reef flats, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. aspera* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); narrow overall distribution (based on moderate geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. aspera* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. aspera'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora aspera*'s distribution is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora aspera*'s absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species'

exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. aculeus* is not warranted for listing at this time under any of the listing factors.

Acropora dendrum

Introduction

The SRR and SIR provided the following information on *A. dendrum*'s morphology and taxonomy. The morphology was described as plates 0.5 to1 m diameter, with widely spaced vertical branchlets, and taxonomy was described as having no taxonomic issues. However, *A. dendrum* is ''poorly characterized and may indeed be a 'phantom' species, being made up from specimens that cannot be allocated to other species.'' However, the BRT treats it as a nominal species. They stated that it is most similar to *Heteropora appressa* and *A. microclados*.

The public comments did not provide supplemental information on morphology or taxonomy. We gathered supplemental information, which confirmed that while there is some taxonomic uncertainty for *A. dendrum,* it is recognized as valid by experts (Veron, 2000; Veron, 2014; Wallace, 1999b). Veron (2014) states that *A. dendrum* is distinctive, thus we conclude it is sufficiently distinctive to be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. dendrum*'s distribution, habitat, and depth range. *Acropora dendrum* is distributed from the north-central Indian Ocean to Fiji, and from Japan to the Great Barrier Reef. The species' predominant habitat is upper reef slopes and mid-slope terraces, and its depth range is 5 to 20 m. Upper reef slopes and mid-slope terraces extend seaward from the reef crest toward the open ocean, forming one of the most common and widespread coral reef habitats. They vary in gradient from gentle to steep, and include a great deal of physical complexity, including ridges, furrows, walls, caves, and other structures, collectively providing highly diverse coral habitats.

The public comments did not provide supplemental information on *A. dendrum*'s distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 32 of his 133 Indo-Pacific ecoregions, and is strongly predicted to be found in an additional 20. Wallace (1999b) reports its occurrence in nine of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions, and Richards (2009) reported the species as having the 48th smallest range of 114 *Acropora* species in a large study and calculated the geographic range at over 20 million km^2. *Acropora dendrum* occurs on exposed reef fronts where *Acropora* diversity is high (Veron and Wallace, 1984). The public comments and information we gathered provided nothing additional on *A. dendrum*'s habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. dendrum*'s abundance. *Acropora dendrum* has been reported as uncommon or rare.

The public comments did not provide supplemental information on *A. dendrum*'s abundance. We gathered supplemental information, which indicates that there are no locations recorded where *A. dendrum* is common or even more abundant than a rare species (Wallace, 1999b). Veron (2014) provides a much more detailed range map for this species than the maps used in the SRR, and reports that *A. dendrum* occupied 2.0 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.11 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''rare.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. dendrum,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences of species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. dendrum* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. dendrum*'s life history. Like most of its congeners, *A. dendrum* is a hermaphroditic spawner (Mezaki *et al.,* 2007; Wallace, 1985) with lecithotrophic (yolk-sac) larvae (Baird *et al.,* 2009). The public comments and information we gathered provided no supplemental biological information.

Susceptibility to Threats

To describe *A. dendrum*'s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. dendrum*. We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. dendrum*'s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide supplemental information on *A. dendrum*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora dendrum* has

been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Based on information from other *Acropora* species provided in the genus description above, *A. dendrum* is likely to be highly susceptible to ocean warming, and also has some susceptibilities to disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. dendrum* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. dendrum*. Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. *Acropora dendrum* has confirmed records of occurrence in 32 Indo-Pacific ecoregions that encompass 14 countries' EEZs. The 14 countries are Australia, Brunei, China, France (French Pacific Island Territories), Indonesia, Japan, Malaysia, Myanmar, Papua New Guinea, Philippines, Solomon Islands, Thailand, Vanuatu, and Vietnam. The regulatory mechanisms available to *A. dendrum,* described first as a percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms are limited in scope, are as follows: General coral protection (36 percent with seven percent limited in scope), coral collection (57 percent with 29 percent limited in scope), pollution control (43 percent with 21 percent limited in scope), fishing regulations on reefs (100 percent with 21 percent limited in scope), and managing areas for protection and conservation (93 percent with none limited in scope). The most common regulatory mechanisms in place for *A. dendrum* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 29 percent of those laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. dendrum*.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. dendrum*. It listed factors that reduce the threat of extinction, including the fairly wide geographic range, the depth range, and the somewhat broad range of suitable habitats.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. dendrum,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic range extends from western Malaysia to Vanuatu, and southern Japan to the GBR. On one hand, this moderates vulnerability to extinction because the high latitude areas in the northern and southern portions of its range are projected to have less than average warming over the foreseeable future, thus populations in these areas will be less exposed to severe warming conditions. On the other hand, the species' geographic distribution exacerbates vulnerability to extinction because much of it lies within the western equatorial Pacific, an area projected to have the highest seawater temperatures in the foreseeable future. Its depth range is from 5 to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes and mid-slope terraces. This moderates vulnerability to extinction over the foreseeable future because upper reef slopes and mid-slope terraces are physically diverse and widespread, thus the species occurs in reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. dendrum* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); rare generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. dendrum* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. dendrum's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora dendrum*'s distribution is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the central Pacific and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to

any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora dendrum*'s absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) As with other *Acropora* species, it is a broadcast spawner and fast grower, enhancing recovery potential from mortality events.

Notwithstanding projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. dendrum* is not warranted for listing at this time under any of the listing factors.

Acropora donei

Introduction

The SRR and SIR provided the following information on *A. donei*'s morphology and taxonomy. Morphology was described as table-like, up to 2 m diameter, with branchlets that are horizontal near the edge but upturned in the middle, and taxonomy was described as having no taxonomic issues, but being similar in appearance to *A. yongei*.

The public comments did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, which indicated that there is some taxonomic uncertainty with this species, but that it is recognized as valid by experts (Fukami *et al.,* 2004; Veron, 2000). Veron (2014) states that *A. donei* is distinctive, thus we conclude it is sufficiently distinctive to be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. donei*'s distribution, habitat, and depth range. *Acropora donei* is distributed from the northern Indian Ocean to the central Indo-Pacific, and from Australia to Japan. They reported that it had the 44th largest range of 114 *Acropora* species examined. The species' habitat is upper reef slopes and mid-slope terraces. It may be restricted habitats where *Acropora* diversity is high, but this includes a large proportion of the Indo-Pacific's reef slopes. Its depth range is 5 to 20 m.

The public comments did not provide any new or supplemental information on *A. donei*'s distribution. We gathered supplemental information, including Veron (2014), which provides an updated, much more detailed range map for this species than the maps used in the SRR. Veron reports that *A. donei* is confirmed in 50 of his 133 Indo-Pacific ecoregions, and is strongly predicted to be found in an additional 17. Wallace (1999b) reports its occurrence in 20 of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions. *Acropora donei* has a relatively broad range overall, estimated at 75 million km^2 (Richards, 2009). The public comments and information we gathered provided nothing additional on *A. donei*'s habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. donei*'s abundance. *Acropora donei* has been reported to be uncommon. Richards (2009) concluded that *A. donei* is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction. The public comments and information we gathered provided information on *A. donei*'s abundance. One public comment stated that a recently published paper (Kayanne *et al.,* 2012) reported that *A. donei* was among the second most abundant group of corals on Okinotorishima, Japan, and was classified as ''common'' (paper was provided with the comment). We gathered supplemental information, which reports that *A. donei* is a common species on Indonesian reefs and reefs of the South China Sea and Japan (Wallace and Wolstenholme, 1998). Veron (2014) reports that *A. donei* occupied 4.7 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.16 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. donei,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. donei* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. donei*'s life history. *Acropora donei* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *A. donei*'s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. donei*. We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. donei*'s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. donei*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora donei* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Based on information from other *Acropora* species provided in the genus description above, *A. donei* is likely highly susceptible to ocean warming, and likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. donei* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. donei*. Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. donei* occurs in 68 Indo-Pacific ecoregions that encompass 34 countries' EEZs. The 34 countries are Australia, Brunei, China, Comoros Islands, Djibouti, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Japan, Kiribati, Madagascar, Malaysia, Maldives, Marshall Islands, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Solomon Islands, Sri Lanka, Taiwan, Thailand, Tonga, Tuvalu, United States (American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms relevant to *A. donei,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (32 percent with 6 percent limited in scope), coral collection (59 percent with 29 percent limited in scope), pollution control (44 percent with 9 percent limited in scope), fishing regulations on reefs (97 percent with 15 percent limited in scope), and managing areas for protection and conservation (94 percent with 3 percent limited in scope). The most common regulatory mechanisms in place for *A. donei* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 29 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. donei*.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora genus* is the primary known threat of extinction for *A. donei*. It listed factors that reduce the threat of extinction including the moderate geographic and depth ranges.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. donei,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from five to at least 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes and mid-slope terraces. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula, *A. donei* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate

depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. donei* from threatened to not warranted. We made this decision based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. donei's* spatial structure, demography, threat susceptibilities, and management none of the five ESA factors, alone or in combination, are causing this species to be endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora donei*'s distribution across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future);

(2) *Acropora donei*'s total absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. donei* is not warranted for listing at this time under any of the listing factors.

Acropora globiceps

Introduction

The SRR and SIR provided the following information on *A. globiceps'* morphology and taxonomy. Morphology was described as digitate and usually small, and taxonomy was described as having no taxonomic issues, but radial corallites were reported similar to *Acropora secale* and *Acropora retusa*. It appears similar to *Acropora gemmifera,* but in strong wave action is similar to *Acropora monticulosa*.

The public comments did not provide any new or supplemental information on morphology and taxonomy. We gathered supplemental information, including Wallace (1999b), which states that *A. globiceps'* branch thickness and colony shape is similar to that of *Acropora humilis,* and its branch shape and radial corallite morphology is similar to that of *Acropora samoensis*. It appears that this species has often been mistaken for *A. humilis* (Fenner, 2014b). Veron (2014) states that *A. globiceps* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. globiceps'* distribution, habitat, and depth range. *Acropora globiceps* is distributed from the oceanic west Pacific to the central Pacific as far east as the Pitcairn Islands. The species has the 27th smallest range of 114 *Acropora* species in a large study. The species occurs on upper reef slopes, reef flats, and adjacent habitats in depths ranging from 0 to 8 m.

The public comments did not provide any new or supplemental information on *A. globiceps'* distribution. We gathered supplemental information, including Veron (2014), which reports that *A. globiceps* is confirmed in 22 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 16. Wallace (1999b) reports its occurrence in seven of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions. Wallace's (1999b) map shows it from a smaller area than Veron (Veron, 2000; Veron, 2014). Based on the Wallace (1999b) range, *A. globiceps* has a relatively small range, estimated at 5 million km^2 (Richards, 2009). The public comments and information we gathered provided nothing additional on *A. globiceps'* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. globiceps'* abundance. *Acropora globiceps* has been reported as common (Veron, 2000). The public comments did not provide any new or supplemental information on *A. globiceps'* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. globiceps* occupied 3.2 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.95 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''sometimes common.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. globiceps,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent (Carpenter et al., 2008). However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences

to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. globiceps* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. globiceps'* life history. *Acropora globiceps* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide additional biological information.

Susceptibility to Threats

To describe *A. globiceps'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, and nutrients. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. globiceps*. The exposure and susceptibility threat information from the SRR and SIR was interpreted in the proposed rule for *A. globiceps'* vulnerabilities to threats as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. globiceps'* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora globiceps* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Based on information from other *Acropora* species provided in the genus description above, *A. globiceps* is likely highly susceptible to ocean warming, and also likely has some susceptibilities to disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. globiceps* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. globiceps*. Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. globiceps* occurs in 22 Indo-Pacific ecoregions that encompass 19 countries' EEZs. The 19 countries are Australia, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Japan, New Zealand (Cook Islands, Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, United Kingdom (Pitcairn Islands), United States (CNMI, Guam, American Samoa), and Vietnam. The regulatory mechanisms relevant to *A. globiceps,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (32 percent with none limited in scope), coral collection (74 percent with 37 percent limited in scope), pollution control (42 percent with 16 percent limited in scope), fishing regulations on reefs (100 percent with 11 percent limited in scope), and managing areas for protection and conservation (100 percent with 5 percent limited in scope). The most common regulatory mechanisms in place for *A. globiceps* are reef fishing regulations, area management for protection and conservation, and coral collection laws. However, 37 percent of coral collection laws are limited in scope and may not provide substantial protection. Pollution control laws are also somewhat utilized for the species. General coral protection laws are much less common regulatory mechanisms for the management of *A. globiceps*.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. globiceps,* but the narrow depth range also increases the risk of extinction. It listed factors that reduce the threat of extinction including common abundance and persistence in intertidal habitats.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. globiceps,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes the Coral Triangle, but also includes many coral reef ecoregions in the western and central Pacific Ocean, as far east as the Pitcairn Islands. Some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the central Pacific, so portions of the population in these areas will be less exposed to severe conditions. On the other hand, the Coral Triangle area is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. As such, its geographic distribution has the ability to both moderate and exacerbate vulnerability to extinction. Its depth range of zero to 8 meters exacerbates vulnerability to extinction over the foreseeable future because a large proportion of the population is restricted to shallow areas. Shallow reef areas can be physically diverse, but are often subjected to frequent changes in environmental conditions, extremes, high irradiance, and simultaneous effects from multiple stressors, both local and global in nature. Its habitat includes upper reef slopes, reef flats, and adjacent habitats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous

types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. globiceps* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); narrow overall distribution (based on moderate geographic distribution and narrow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we maintain the listing determination for *A. globiceps*. Based on the best available information provided above on *A. globicep*'s spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora globiceps* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of fishing (A, E), nutrients (A, E), and predation (C). These threats are expected to continue and increase into the future. In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D); and

(2) *Acropora globiceps* occurs primarily in depths of zero to eight meters which can be considered a shallow depth range compared to the overall depth of occurrence for reef building corals in general. Shallow reef areas are often subjected to highly variable environmental conditions, extremes, high irradiance, and simultaneous effects from multiple stressors, both local and global in nature. A limited depth range reduces the absolute area in which the species may occur throughout its geographic range and indicates that a large proportion of the population is likely to be exposed to threats that are worse in shallow habitats, such as simultaneously elevated irradiance and seawater temperatures, as well as localized impacts.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. globiceps'* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. globiceps'* distribution includes the Coral Triangle area, it also includes many ecoregions throughout the central Pacific from Japan down to New Caledonia and as far east as the Pitcairn Islands. This distribution includes some areas within its range that are projected to have less than average warming and acidification over the foreseeable future, including the central Pacific, so portions of the population in these areas will be less exposed to severe conditions.

(2) *Acropora globiceps'* absolute abundance is at least tens of millions of colonies which allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. globiceps*. However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora horrida

Introduction

The SRR and SIR provided the following information on *A. horrida*'s morphology and taxonomy. Morphology was described as usually open branched, becoming bushy on upper reef slopes and in shallow lagoons. No taxonomic issues were raised, but *A. horrida* was stated to be similar to *Acropora tortuosa,* and *Acropora vaughani*.

The public comments did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014), which states that *A. horrida* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. horrida*'s distribution, habitat, and depth range. *Acropora horrida* is distributed from the Red Sea to French Polynesia. The species has a very broad range overall, having the 14th largest range of 114 *Acropora* species examined. It is found in numerous reef slope and back-reef habitats with turbid water, including but not limited to, upper reef slopes, mid-slope terraces, lagoons, and adjacent habitats. The SRR described its depth range as 5 to 20 m.

The public comments did not provide any new or supplemental information on *A. horrida*'s distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 61 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 22. Wallace (1999b) reports its occurrence in 24 of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions. Richards (2009) calculated the geographic range of *A. horrida* at over 100 million km^2. Wallace (1999b) reports the depths from which *A. horrida* specimens were collected ranged from 17 to 39 m.

Demographic Information

The SRR and SIR provided the following information on *A. horrida*'s abundance. *Acropora horrida* has been

reported as usually uncommon. This is a species that is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction. The public comments did not provide any new or supplemental information on *A. horrida*'s abundance. We gathered supplemental information, including Veron (2014), which reports that *A. horrida* occupied 8.9 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.70 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. horrida,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. horrida* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. horrida*'s life history. *Acropora horrida* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. Mean egg size for *A. horrida* has been recorded as 0.64 mm and mean polyp fecundity has been recorded as 9.0 eggs per polyp. This species did synchronize its spawning with other *Acropora* species on the central GBR during the major multispecies spawning events in early summer 1981–1983.

Public comments provided no additional biological information. We gathered the following supplemental information on the life history of *A. horrida*. Darling *et al.* (2012) found that all of over 30 *Acropora* species studied were classified as ''competitive'' species which were considered to be less tolerant of environmental stress and disturbance than those species that were classified as ''stress-tolerant,'' ''generalist,'' or ''weedy,'' because of documented shifts in coral communities from ''competitive'' to the other categories. *Acropora horrida* was one of the *Acropora* species studied.

Susceptibility to Threats

To describe *A. horrida'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR also provided the following species-specific information on *A. horrida*'s threats. With regard to ocean warming, *A. horrida* is thought to have been locally extirpated in the Arabian Gulf after the 1996 and 1998 bleaching events, but the species is considered less susceptible to bleaching than other *Acropora* spp. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. horrida*. We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. horrida*'s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. lokani*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora horrida* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Done *et al.* (2003b) reported that 20 percent of *A. horrida* colonies on the Great Barrier Reef were affected by bleaching in 2002, and the species ranked 29th in proportion of coral colonies that were bleached and killed out of 52 studied *Acropora* species. That is, 28 of the 52 species bleached more than *A. horrida,* and 23 bleached less.

No other species-specific information is available for the susceptibility of *A. horrida* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. horrida* may be susceptible to the effects of disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. Thus, based on the available species-specific and genus information summarized above, *A. horrida* is likely highly susceptible to ocean warming, and also likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, predation, sedimentation, nutrients, sea-level rise, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. horrida* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. horrida.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. horrida* occurs in 61 Indo-Pacific ecoregions that encompass 45 countries' EEZs. The 45 countries are Australia, Bahrain, China, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Iran, Israel, Japan, Jordan, Kenya, Kiribati, Kuwait, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Mozambique, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Qatar, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sudan, Taiwan, Tanzania, Thailand, Tonga, Tuvalu, United Arab Emirates, United Kingdom (British Indian Ocean Territory), United States (American Samoa, PRIAs), Vietnam, and Yemen. The regulatory mechanisms relevant to *A. horrida,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those

countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (24 percent with 2 percent limited in scope), coral collection (58 percent with 24 percent limited in scope), pollution control (44 percent with 7 percent limited in scope), fishing regulations on reefs (87 percent with 24 percent limited in scope), and managing areas for protection and conservation (87 percent with 11 percent limited in scope). The most common regulatory mechanisms in place for *A. horrida* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 24 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. horrida.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. horrida.* It listed factors that reduce the threat of extinction including the very wide geographic range, with large local distributions, and tolerance for turbid water.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. horrida,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from five to 39 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes numerous reef slope and back-reef habitats with turbid water, including but not limited to, upper reef slopes, mid-slope terraces, lagoons, and adjacent habitats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. In addition, turbidity can mitigate the effects of high irradiance by blocking it from the water column. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. horrida* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. horrida* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. horrida's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora horrida's* distribution from the Red Sea across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora horrida's* total absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species

exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. horrida* is not warranted for listing at this time under any of the listing factors.

Acropora jacquelineae

Introduction

The SRR and SIR provided the following information on *A. jacquelineae's* morphology and taxonomy. The morphology was described as flat plates up to 1 m in diameter. Viewed from above, plates are covered with a mass of fine delicately-curved axial corallites giving an almost moss-like appearance. Evidence from genetics indicates it is not a hybrid, and so the SRR considered it a valid species.

The public comments and information we gathered provided supplemental information on the morphology or taxonomy of *A. jacquelineae.* One public comment stated that specimens collected in American Samoa and identified by the American Samoa Department of Marine and Water Resources as *A. jacquelineae* appear to be *A. aculeus,* thereby illustrating the species identification uncertainties associated with this species. We gathered supplemental information, including Veron (2014), which states that *A. jacquelineae* is distinctive when compared with other species but not on its own. We conclude the species can be identified by experts (Fenner, 2014b). Thus, we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. jacquelineae's* distribution, habitat, and depth range. *Acropora jacquelineae* is distributed within the Coral Triangle including Papua New Guinea, and is reported from American Samoa. The species has a limited range overall, the 22nd smallest range of 114 *Acropora* species. It is found in numerous subtidal reef slope and back-reef habitats, including but not limited to, lower reef slopes, walls and ledges, mid-slopes, and upper reef slopes protected from wave action, and its depth range is 10 to 35 m.

The public comments did not provide any new or supplemental information on *A. jacquelineae's* distribution, habitat, or depth range. We gathered supplemental information on its distribution, including Veron (2014), which reports that *A. jacquelineae* is confirmed in 12 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional five. Wallace (1999b) reports its occurrence in seven of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range of this species at 2 million km², which was 1.8 percent of the size of the largest range for any species.

Demographic Information

The SRR and SIR provided the following information on *A. jacquelineae's* abundance. *Acropora jacquelineae* has been reported as uncommon.

The public comments did not provide any new or supplemental information on *A. jacquelineae's* abundance. We gathered supplemental information, including Richards (2009) and Richards *et al.* (2013b), which conclude from their data that *A. jacquelineae* is globally restricted, locally restricted, and locally rare, and thus in the rarest category of *Acropora* with the predicted consequence of global extinction. They placed 15 species in this category out of 85 species of *Acropora.* Bonin (2012) reported that *A. jacquelineae* was the 19th most abundant species of *Acropora* in Kimbe Bay, Papua New Guinea, with about 18 percent of the abundance of the most abundant species of *Acropora.* Veron (2014) reports that *A. jacquelineae* occupied 1.6 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.44 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data.

Richards *et al.* (2008) reported that *A. jacquelineae* had the 14th lowest population of the 15 rare *Acropora* species they studied. Richards *et al.* (2008) gave the total world population of this species as 31,599 +/-17,358 colonies, and the effective population size (*i.e.,* a mathematical estimate of the size of the breeding population) as 3,476 colonies. The calculation of the total world population of this species was flawed, since the area of 1 km² was given as 1,000 m² (Richards *et al.,* 2008: Appendix 1), when it is actually 1,000,000 m². Thus, the correct population estimate is 1,000 times greater than stated, or a total population size of 31,599,000 colonies, and an effective population size of 3,476,000 colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. jacquelineae,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. jacquelineae* occurs in many areas affected by these broad changes, and has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. jacquelineae's* life history. *Acropora jacquelineae* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. jacquelineae's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not

provide any species-specific information on the effects of these threats on *A. jacquelineae.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. jacquelineae's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerability to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. jacquelineae's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora jacquelineae* has been rated as moderately or highly susceptible to bleaching and disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). There is no species-specific information for the exposure or susceptibility of *A. jacquelineae* to any threat. Thus, based on the available genus information summarized above, *A. jacquelineae* is likely highly susceptible to ocean warming, and also likely has some susceptibility to disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. jacquelineae* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. jacquelineae.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. jacquelineae* occurs in 12 Indo-Pacific ecoregions that encompass five countries' EEZs. The five countries are Federated States of Micronesia, Indonesia, Papua New Guinea, Solomon Islands, and Timor-Leste. The regulatory mechanisms relevant to *A. jacquelineae,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (20 percent with none limited in scope), coral collection (40 percent with none limited in scope), pollution control (20 percent with 20 percent limited in scope), fishing regulations on reefs (100 percent with none limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *A. jacquelineae* are reef fishing regulations and area management for protection and conservation. General coral protection, coral collection, and pollution control laws are much less common regulatory mechanisms for the management of *A. jacquelineae.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. jacquelineae.* It listed factors that contribute to the threat of extinction including limited range, small local distribution and small local abundance, as well as the possibility of genetic introgression.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. jacquelineae,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is limited almost exclusively to the Coral Triangle in the western equatorial Pacific Ocean. Despite the large number of islands and environments that are included in the species range, this range exacerbates vulnerability to extinction over the foreseeable future because it is limited to the area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range of ten to 35 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes lower reef slopes, walls and ledges, mid-slopes, and upper reef slopes protected from wave action. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its effective population size estimate of approximately 3.5 million colonies, combined with the location of its range, exacerbates vulnerability to extinction because increasingly severe conditions within the limited species range are likely to affect a high proportion of its effective population at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. jacquelineae* was proposed for listing as endangered because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); rare generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. jacquelineae* from endangered to threatened. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including adequate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information provided above on *A. jacquelineae's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora jacquelineae* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of

fishing (A), predation (C), and nutrient enrichment (A, E). These threats are expected to continue and increase into the future. In addition existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D).

(2) *Acropora jacquelineae's* distribution is constrained mostly to the Coral Triangle and western equatorial Pacific, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the western equatorial Pacific that suggest future ocean warming events may be more severe than average in this part of the world. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Acropora jacquelineae's* absolute abundance is estimated to be 31 million colonies, however its estimated effective population size is much lower at approximately 3.5 million genetically distinct individuals. Considering the limited range of this species in an area where severe and increasing impacts are predicted, this level of abundance leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. jacquelineae's* spatial structure, demography, threat susceptibilities, and management also indicate that the species the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. jacquelineae's* distribution is constrained mostly to the Coral Triangle which increases it extinction risk as described above, its habitat includes sub-tidal walls, ledges on walls, and shallow reef slopes protected from wave action. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat sub-section and Threats Evaluation section. There is no evidence to suggest the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species;

(2) *Acropora jacquelineae's* absolute abundance is tens of millions of colonies and effective population size is still millions of colonies which allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events, as described in the Corals and Coral Reefs section above.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. jacquelineae.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora listeri

Introduction

The SRR and SIR provided the following information on *A. listeri's* morphology and taxonomy. Morphology was described as irregular clumps or plates with thick branches of highly irregular length and shape, and the taxonomy was described as having no taxonomic issues but this species was reported to be similar to *Acropora polystoma* and *Acropora lutkeni,* and is not easily identified in the field.

The public comments did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014), which states that *A. listeri* is distinctive, thus we conclude the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. listeri's* distribution, habitat, and depth range. *Acropora listeri* is distributed from the Red Sea through the Indian Ocean to the southeast Pacific. The species has a very broad range overall, the 13th largest range of 114 *Acropora* species. Its predominant habitat is lower reef crests and upper reef slopes in strong wave action, and adjacent or similar habitats. Its depth range is from near the surface to 15 m deep.

The public comments did not provide any new or supplemental information on *A. listeri's* distribution, habitat, or depth range. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 54 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 14. Wallace (1999b) reports its occurrence in 21 of her 29 Indo-Pacific areas (Wallace, 1999b), many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range of *A. listeri* at 105 million km^2.

Demographic Information

The SRR and SIR provided the following information on *A. listeri's* abundance. *Acropora listeri* has been reported as uncommon. This species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction.

The public comments did not provide any new or supplemental information on *A. listeri's* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. listeri* occupied 5.5 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.35 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-

quantitative system, the species' abundance was characterized as ''uncommon.'' and overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. listeri,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. listeri* occurs in many areas affected by these broad changes, and has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. listeri*'s life history. *Acropora listeri* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. listeri*'s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. listeri.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. listeri*'s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerability to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. listeri's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora listeri* has been rated as moderately or highly susceptible to bleaching and disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Done *et al.* (2003b) report 20 percent of *A. listeri* colonies were affected by bleaching on the Great Barrier Reef in 2002, which was 47 percent as much as the most affected species (Brown and Cossins, 2011).

With regard to disease, *A. listeri* has been rated as moderately or highly susceptible to bleaching and disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Skeletal Eroding Band is the most prevalent disease on the GBR, and it has been found in *A. listeri. Acropora* species with similar morphology to *A. listeri* had moderate susceptibility to this disease on the GBR, with a prevalence of 2.4 percent (Page and Willis, 2007). No other species-specific information is available for the susceptibility of *A. listeri* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. listeri* may be susceptible to the effects of ocean acidification, sedimentation, and nutrients, and predation. Thus, based on the available species-specific and genus information summarized above, *A. listeri* likely is highly susceptible to ocean warming, and also likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. listeri* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. listeri.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. listeri* occurs in 54 Indo-Pacific ecoregions that encompass 40 countries' EEZs. The 40 countries are Australia, Brunei, China, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Israel, Japan, Jordan, Kiribati, Malaysia, Marshall Islands, Mauritius, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sri Lanka, Sudan, Taiwan, Tanzania, Timor-Leste, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory, Pitcairn Islands), United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms relevant to *A. listeri,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (30 percent with 8 percent limited in scope), coral collection (63 percent with 30 percent limited in scope), pollution control (45 percent with 8 percent limited in scope), fishing regulations on reefs (90 percent with 23 percent limited in scope), and managing areas for protection and conservation (95 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. listeri* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 30 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. listeri.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. listeri.* Its limited local distribution was also listed as a contributing factor to its threat of extinction. The SRR also listed factors that reduce the threat of extinction

including its broad geographic range and tolerance for high-energy environments.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. listeri,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution stretches from the Red Sea and east coast of Africa, across the Indian Ocean and over to the southeast Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from near the surface to 15 meters. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes lower reef crests, upper reef slopes, and other habitats exposed to strong wave action, and its depth range is from near the surface to 15 m deep. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. In addition, reef zones with strong wave action experience high levels of mixing which can dilute adverse environmental conditions. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. listeri* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. aculeus* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information provided on *A. listeri's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Acropora listeri's* distribution from the Red Sea across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora listeri's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events, as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. listeri* is not warranted for listing at this time under any of the listing factors.

Acropora lokani

Introduction

The SRR and SIR provided the following information on *A. lokani's* morphology and taxonomy. Morphology was described as small bushy colonies of forked branches, and taxonomy was described as having no taxonomic issues but being similar in appearance to some other *Acropora* species.

The public comments did not provide supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014), which states that *A. lokani* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. lokani*'s distribution, habitat, and depth range. *Acropora lokani* occurs from central Indonesia to Fiji. The species has the 33rd smallest range of 114 *Acropora* species in a large study. However, as described below, this was an error, as *A. lokani* actually had the 30th smallest range in the study. *A. lokani* occurs in reef slope and back-reef habitats, including at least upper reef-slopes, mid-slopes, and lagoon patch reefs, and its depth range as 8 to 25 m.

The public comments and information we gathered provided information on the distribution of *A. lokani.* One public comment letter indicated that the range map for *A. lokani* mistakenly included American Samoa. We gathered supplemental information, including Veron (2014), which provides an much more detailed range map for this species than the maps used in the SRR. Veron reports that this species is confirmed in 14 of his 133 Indo-Pacific ecoregions is strongly predicted to be found in an additional six, and confirms that the species is not known to occur in American Samoa. Wallace (1999) reports its occurrence in four of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions. Richards (2009) calculated the geographic range of this species at over 5 million km^2, which was the 30th smallest among the 114 *Acropora* species for which ranges were calculated, and 3.6 percent of the size of the largest range for any species. Richards *et al.* (Richards *et al.,* 2013a) calculate the range of this species as 8.5 million km^2. The public comments and information we gathered provided nothing additional on *A. lokani*'s habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. lokani*'s abundance. *Acropora lokani* has been reported as uncommon, but sometimes common.

The public comments did not provide supplemental information on *A. lokani*'s abundance. We gathered supplemental information, including Richards *et al.* (2013b), which concludes that this species is globally restricted, locally restricted, and locally rare, and thus in the rarest category of *Acropora* with the predicted consequence of global extinction. They placed 15 species in this category out of 85 species of *Acropora* (Richards *et al.,* 2013b). Veron (2014) reports that *A. lokani* occupied 2.75 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.44 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''sometimes common.'' Veron did not infer trends in abundance from these data.

Richards *et al.* (2008) reported that *A. lokani* had the eleventh lowest population of the 15 rare *Acropora* species they studied. Richards *et al.* (2008) gave the total world population of this species as about 18,960 +/-9480 colonies, and the effective population size (*i.e.,* a mathematical estimate of the size of the breeding population) as about 2,086 colonies. The calculation of the total world population of this species was flawed, since the area of 1 km^2 was given as 1,000 m^2 (Richards *et al.,* 2008: Appendix 1), when it is actually 1,000,000 m^2. Thus, the correct population estimate is 1,000 times greater than stated, or a total population size of 18,960,000 colonies, and an effective population size of 2,086,000 colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. lokani,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparisons sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. lokani* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. lokani*'s life history. *Acropora lokani* is assumed to be a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. lokani*'s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. lokani.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. lokani*'s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. lokani*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora lokani* has been rated as moderately or highly susceptible to thermal bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Based on information from other *Acropora* species provided in the genus description above, *A. lokani* is likely highly susceptible to ocean warming, and likely has some susceptibility to disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. lokani* to the threats.

Regulatory Mechanisms

In the proposed rule we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. lokani.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. lokani* occurs in 14 Indo-Pacific ecoregions that encompass nine countries' EEZs. The nine countries are Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Palau, Papua New Guinea, Philippines, Solomon Islands, and Timor-Leste. The regulatory mechanisms relevant to *A. lokani,* described first as a percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms are limited in scope, are as follows: General coral protection (33 percent with none limited in scope), coral collection (67 percent with 22 percent limited in scope), pollution control (33 percent with 22 percent limited in scope), fishing regulations on reefs (100 percent with none limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *A. lokani* are coral collection laws, reef fishing regulations, and area management for protection and conservation. General coral protection and pollution control laws are much less common regulatory mechanisms for the management of *A. lokani.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. lokani,* with the potential for extinction increased by the smallest effective population size of species with actual data, limited geographic and restricted latitudinal range, and also the small global distribution, small local distributions, and small local abundances.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. lokani,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is limited to parts of the Coral Triangle and the western equatorial Pacific Ocean. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range of eight to 25 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef-slopes, mid-slopes, and lagoon patch reefs. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its effective population size of two million colonies, combined with the location of its range, exacerbates vulnerability to extinction because increasingly severe conditions within the limited species range are likely to affect a high proportion of its effective population at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. lokani* was proposed for listing as endangered because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); rare generalized range wide abundance (E); overall narrow distribution (based on narrow geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. lokani* from endangered to threatened. No supplemental information or public comments changed our assessment of the type and severity of threats affecting *A. lokani.* Rather, we made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information provided above on *A. lokani's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora lokani* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C) ocean acidification (E), trophic effects of fishing (A), nutrients (A, E), and predation (C). These threats are expected to continue and increase into the future. In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D).

(2) *Acropora lokani's* distribution is mostly constrained to the Coral Triangle and western equatorial Pacific, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within *the western equatorial Pacific* that suggest future ocean warming events may be more severe than average in this part of the world. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Acropora lokani's* absolute abundance is estimated to be 19 million colonies, however its estimated effective population size is much lower at around two million genetically distinct colonies. Considering the limited range of this species in an area where severe and increasing impacts are predicted,

this level of abundance leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. lokani's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. lokani's* distribution is constrained mostly to the Coral Triangle which increases it extinction risk as described above, its habitat includes sheltered lagoon patch reefs and other shallow reef environments. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) *Acropora lokani's* absolute abundance is tens of millions of colonies, and effective population size is still millions of colonies which allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. lokani.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora microclados

Introduction

The SRR and SIR provided the following information on *A. microclados'* morphology and taxonomy. Morphology was described as plates up to 1 m diameter, with short, uniform, evenly spaced, tapered branchlets up to 10 mm thick at the base, and taxonomy was described as having no taxonomic issues but that it is most similar to *A. massawensis, A. lamarcki,* and *A. macrostoma.*

The public comments did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014), which states that *A. microclados* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. microclados'* distribution, habitat, and depth range. *Acropora microclados* is distributed from the Red Sea, to the central Pacific. The species has a broad range overall with the 20th largest range of 114 *Acropora* species. Its habitat is predominantly lower reef crests, upper reef slopes, and mid-slope terraces, and its depth range is from five to 20 m.

The public comments provided the following supplemental information on *A. microclados'* distribution. One public comment stated that the species has not been confirmed in the Commonwealth of the Northern Mariana Islands by expert Richard H. Randall, in contradiction to the SRR. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 56 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 18. Wallace (1999b) reports its occurrence in 21 of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range of *A. microclados* at 100 million km^2. The public comments and information we gathered provided nothing additional on *A. microclados'* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. microclados'* abundance. *Acropora microclados* has been reported as uncommon. This species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction. The public comments did not provide any new or supplemental information on *A. microclados'* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. microclados* occupied 15.2 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.51 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was also described as ''usually uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. microclados,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 33 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years

(Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. microclados* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. microclados'* life history. *Acropora microclados* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. microclados'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. microclados.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. microclados'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments provided some supplemental information on *A. microclados'* threat susceptibilities. One comment stated that *A. microclados* is more susceptible to predation than indicated in the proposed rule because of the overlap in the depth ranges of this species with crown of thorns starfish. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora microclados* has been rated as moderately or highly susceptible to bleaching and disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Supplemental species-specific information is available on the susceptibility of *A. microclados* to ocean warming. In a study of ocean warming of *Acropora* species on the GBR, *A. microclados* had low bleaching susceptibility: of 48 *Acropora* species, only three species had no bleaching, including *A. microclados* (Done *et al.,* 2003b). In a study of ocean warming of *Acropora* species in Kimbe Bay, Papua New Guinea, *A. microclados* had moderate bleaching susceptibility: of 16 *Acropora* species, *A. microclados* had the sixth highest level of bleaching, with seven percent mortality compared to 40 percent for the highest species, and was rated ''moderate'' on a scale of severe, high, moderate, and least (Bonin, 2012). No other species-specific information is available for the susceptibility of *A. microclados* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. microclados* may be susceptible to ocean warming, disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. Thus, based on the available species-specific and genus information summarized above, *A. microclados* likely has some susceptibility to ocean warming, disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. microclados* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. microclados.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. microclados* occurs in 56 Indo-Pacific ecoregions that encompass 37 countries' EEZs. The 37 countries are Australia, China, Comoros Islands, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Japan, Jordan, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, New Zealand (Cook Islands, Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sudan, Taiwan, Thailand, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory, Pitcairn Islands), United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms relevant to *A. microclados,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (27 percent with 5 percent limited in scope), coral collection (62 percent with 30 percent limited in scope), pollution control (46 percent with 8 percent limited in scope), fishing regulations on reefs (89 percent with 16 percent limited in scope), and managing areas for protection and conservation (95 percent with 11 percent limited in scope). The most common regulatory mechanisms in place for *A. microclados* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 30 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. microclados.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora genus* is the primary known threat of extinction for *A. microclados.* The threat of extinction may be increased to by its limited local distribution and uncommon local abundance. The SRR also listed factors that reduce the threat of extinction including the species' geographic and depth ranges.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. microclados,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to

extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from five to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat is predominantly lower reef crests, upper reef slopes, and mid-slope terraces. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. In addition, two species-specific studies indicate that, unlike many other *Acropora* species, *A. microclados* is not highly susceptible to warming-induced bleaching, one of the primary threats identified for corals.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. microclados* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. microclados* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. microclados'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) While the species has some susceptibility to bleaching, unlike most other *Acropora* species, it does not appear to be highly susceptible to this threat, as shown by two newly available species-specific studies;

(2) *Acropora microclados'* distribution from the Red Sea across the Indian Ocean and most of the Pacific Ocean includes is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(3) *Acropora microclados'* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(4) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events, as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. microclados* is not warranted for listing at this time under any of the listing factors.

Acropora palmerae

Introduction

The SRR and SIR provided the following information on *A. palmerae*'s morphology and taxonomy. Morphology was described as encrusting with or without short, irregularly shaped branches. Colonies seldom exceed 1 m across. There is doubt as to whether *A. palmerae* is a separate species or a strong-water form of *A. robusta;* however, in the absence of genetic information, the BRT considered it a valid species. *A. palmerae* is like the encrusting base of *A. robusta,* but it has smaller branches, if any.

The public comments did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, including Wallace (1999b) and Veron (Veron, 2000), who both considered it a valid species. In addition, Veron (2014) states that *A. palmerae* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. palmerae*'s distribution, habitat, and depth range. *Acropora palmerae* is distributed from the northern Indian Ocean to the central Indo-Pacific and central Pacific. The species has a moderate range overall,

with the 52nd largest range of 114 *Acropora* species. The SRR and SIR reported that it occurs in most reef slope and back-reef habitats, including upper reef slopes, lower reef crests, and reef flats, with a depth range of five to 20 m. The public comments and information we gathered provided the following information on *A. palmerae*'s distribution. One public comment stated that the depth distribution appears to be restricted to depths of less than 12 m, based on observations in Guam and reports from elsewhere. We gathered supplemental information, including observations that the depth range of *A. palmerae* in American Samoa is low tide to about 5 m deep, and on Tinian Island in the Marianas it is from about 2 to 5 m (D. Fenner, pers. communication). Thus, based on all the available information, *A. palmerae*'s habitat includes upper reef slopes, mid-slope terraces, lower reef crests, and reef flats. Based on all the information from across its range, we consider its depth range to be from two to 20 m depth. Veron (2014) reports that *A. palmerae* is confirmed in 42 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 17. Wallace (1999b) reports its occurrence in seven of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range at over 60 million km^2.

Demographic Information

The SRR and SIR provided the following information on *A. palmerae*'s abundance. *Acropora palmerae* has been reported as uncommon.

The public comments did not provide any new or supplemental information on *A. palmerae*'s abundance. We gathered supplemental information, including Veron (2014), which reports that *A. palmerae* occupied 2.7 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.81 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data. *Acropora palmerae* can be abundant within a very narrow depth range in shallow water (as it is on the west coast of Tinian in the Marianas), which may be missed in some surveys (D. Fenner, personal comm.). As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. palmerae,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 39 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. palmerae* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. palmerae*'s life history. Like most other *Acropora* species, *A. palmerae* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. Unlike most other *Acropora* species, colonies of *A. palmerae* can be entirely encrusting with no branches (or colonies may have short, irregularly-shaped branches). The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. palmerae*'s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. palmerae.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. palmerae*'s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. palmerae*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora palmerae* has been rated as moderately or highly susceptible to thermal bleaching and coral disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. palmerae* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. palmerae* is likely highly susceptible to ocean warming, and also has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. palmerae* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. palmerae.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. palmerae* occurs in 42 Indo-Pacific ecoregions that encompass 28 countries' EEZs. The 28 countries are Australia, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (including Andaman and Nicobar Islands), Indonesia, Japan, Marshall Islands, Mauritius, Myanmar, New Zealand (Cook Islands, Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Seychelles, Solomon Islands, Sri Lanka, Taiwan, Thailand, Timor-Leste, Tonga, Tuvalu, United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *A. palmerae,* described first as the percentage of the above countries that utilize them, to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General

coral protection (36 percent with 11 percent limited in scope), coral collection (57 percent with 29 percent limited in scope), pollution control (39 percent with 11 percent limited in scope), fishing regulations on reefs (96 percent with 11 percent limited in scope), and managing areas for protection and conservation (96 percent with 4 percent limited in scope). The most common regulatory mechanisms in place for *A. palmerae* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 29 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. palmerae.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora genus* is the primary known threat of extinction for *A. palmerae.* It listed factors that reduce the threat of extinction including its very broad geographic range, the fact that it is often common and sometimes abundant, and the broad range of suitable habitat types for *A. palmerae.*

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. palmerae,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from the surface to as much as 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes, mid-slope terraces, lower reef crests, and reef flats in depth ranging from two to 20 m depth. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Reef zones subject to high wave action also experience high levels of mixing which can dilute adverse environmental conditions. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. palmerae* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderately wide distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. palmerae* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. palmerae's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Acropora palmerae's* distribution across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the wide variety of habitat types it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora palmerae's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events, as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout

its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. palmerae* is not warranted for listing at this time under any of the listing factors.

Acropora paniculata

Introduction

The SRR and SIR provided the following information on *A. paniculata'*s morphology and taxonomy. Morphology was described as large plates or tables that are 25 mm thick and frequently greater than 1 m across, and taxonomy was described as having no taxonomic issues, but it is quite similar to *A. cytherea* and similar to *A. jacquelineae.*

The public comments and information we gathered provided information on morphology and taxonomy of *A. paniculata.* One public comment stated that in Hawaii, colony morphology of *A. paniculata* resembles that of *A. cytherea,* but that *A. paniculata* occurs at greater depths than *A. cytherea,* which opens the possibility of them being the same species that changes growth forms at different depths. We gathered supplemental information, including Veron (2014), which states that *A. paniculata* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. paniculata'*s distribution, habitat, and depth range. *Acropora paniculata* is distributed from the Red Sea and Indian Ocean to the west and central Pacific, including within the Mariana Islands. The species has a moderately broad range, the 40th largest range of 114 *Acropora* species. Its habitat includes numerous reef slope and back-reef habitats, including at least upper reef slopes, mid-slope terraces, lower reef slopes, and sheltered lagoons, and its depth range is 10 to 35 m.

The public comments and the supplemental information provided the following information on *A. paniculata'*s distribution. One public comment stated that occurrence of *A. paniculata* within the Mariana Islands has not been confirmed by expert Richard H. Randall, in contradiction to the SRR. We gathered supplemental information, including Veron (2014), which reports that *A. paniculata* is confirmed in 51 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 15. Wallace (1999b) reports its occurrence in 19 of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range at 80 million km^2. The public comments and information we gathered provided nothing additional on *A. paniculata'*s habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. paniculata'*s abundance. *Acropora paniculata* has been reported as uncommon to rare (Veron, 2000). Richards (2009) concluded that this species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction.

The public comments and information we gathered provided the following information on *A. paniculata'*s abundance. One public comment stated that Fenner's 2005 book Corals of Hawaii notes that in the Hawaiian Islands, *A. paniculata* is ''not common,'' which the commenter argued demonstrates that the species is not rare, at least in Hawaii. We gathered supplemental information, including observations made in 2014 that *A. paniculata* is one of the most common corals in the Chagos Islands in the Indian Ocean, where it has recovered rapidly from the 1998 mass bleaching event (D. Fenner, personal comm.). Veron (2014) reports that *A. paniculata* occupied 14.3 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.43 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common,'' and overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. paniculata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent in the study. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. paniculata* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. paniculata'*s life history. Like most other *Acropora* species, *A. paniculata* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. paniculata'*s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. paniculata.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. paniculata'*s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of

fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. paniculata*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora paniculata* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. paniculata* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. paniculata* likely is highly susceptible to ocean warming, and also has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. paniculata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. paniculata.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. paniculata* occurs in 51 Indo-Pacific ecoregions that encompass 37 countries' EEZs. The 37 countries are Australia (including Cocos-Keeling Islands), China, Comoros Islands, Egypt, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Israel, Japan, Jordan, Kiribati, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, Nauru, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Solomon Islands, Sudan, Taiwan, Thailand, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory), United States (Hawaii, American Samoa, PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *A. paniculata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (24 percent with 3 percent limited in scope), coral collection (59 percent with 30 percent limited in scope), pollution control (43 percent with 8 percent limited in scope), fishing regulations on reefs (89 percent with 22 percent limited in scope), and managing areas for protection and conservation (95 percent with 11 percent limited in scope). The most common regulatory mechanisms in place for *A. paniculata* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 30 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. paniculata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora genus* is the primary known threat of extinction for *A. paniculata.* It listed factors that reduce the threat of extinction including the moderately wide geographic range, presence in deeper habitats, and being common in New Guinea though rare elsewhere.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. paniculata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from 10 to 35 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slope terraces, lower reef slopes, and sheltered lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. paniculata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. paniculata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A.*

paniculata's spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Acropora paniculata's* distribution from the Red Sea across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora paniculata's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. paniculata* is not warranted for listing at this time under any of the listing factors.

Acropora pharaonis

Introduction

The SRR and SIR provided the following information on *A. pharaonis'* morphology and taxonomy. Morphology was described as large horizontal tables or irregular clusters of horizontal or upright interlinked contorted branches, and taxonomy was described as having no taxonomic issues but being similar in appearance to *Acropora clathrata* and *Acropora plumosa.*

The public comments did not provide supplemental information on morphology or taxonomy. We gathered supplemental information, including that *A. pharaonis* is recognized as valid by experts (Veron, 2000; Veron, 2014; Wallace, 1999a). Veron (2014) also states that records of this species in the Pacific by other authors are likely to be another, probably undescribed species. However, we conclude the species can be identified by experts, thus the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. pharaonis'* distribution, habitat, and depth range. *Acropora pharaonis* has a disjoint distribution, being present in the Red Sea and western/northern Indian Ocean, and areas in the Pacific Ocean. It notes that IUCN stated that there are doubts about the Pacific records. The species has the 14th smallest range of 114 *Acropora* species. Its habitat includes reef slope and back-reef habitats, including at least upper reef slopes, mid-slope terraces, and lagoons, and its depth range is 5 to 25 meters.

The public comments did not provide supplemental information on *A. pharaonis'* distribution. We gathered supplemental information, including Veron (2014), which reports that *A. pharaonis* is confirmed in 11 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional eight. All 19 of these ecoregions are in the Indian Ocean. Wallace (1999b) reports its occurrence in six of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions, stating that, ''This unusual species appears to be restricted to the Red Sea.'' Richards (2009) estimated its range at 1.4 million km². The public comments and information we gathered provided nothing additional on *A. pharaonis'* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. pharaonis'* abundance. *Acropora pharaonis* has been reported as common. The public comments did not provide supplemental information on *A. pharaonis'* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. pharaonis* occupied 3.6 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.80 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''common in the Red Sea, uncommon elsewhere.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. pharaonis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 30 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. pharaonis* occurs in areas affected by these broad changes, and has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise

quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. pharaonis'* life history. *Acropora pharaonis* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. pharaonis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR also reported that *A. pharaonis* was locally extirpated in the SE Arabian Gulf after the combined impacts of the 1996 and 1998 bleaching events, and that the species is susceptible to several diseases that affect reproduction including reduced fecundity. We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. pharaonis'* vulnerabilities as follows: High vulnerability to ocean warming and disease, moderate vulnerabilities to ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide supplemental information on *A. pharaonis'* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora pharaonis* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. pharaonis* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. pharaonis* likely has high susceptibility ocean warming, and also likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, and collection and trade. Based on the available information, high susceptibility to disease (as stated in the proposed rule for this species) is not supported. The available information does not support more precise ratings of the susceptibilities of *A. pharaonis* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. pharaonis.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. pharaonis* occurs in 11 Indo-Pacific ecoregions that encompass 21 countries' EEZs. The 21 countries are Bahrain, Djibouti, Egypt, Eritrea, France (French Pacific Island Territories), India, Iran, Israel, Jordan, Kuwait, Madagascar, Maldives, Mauritius, Qatar, Saudi Arabia, Seychelles, Somalia, Sri Lanka, Sudan, United Arab Emirates, and Yemen. The regulatory mechanisms relevant to *A. pharaonis,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (29 percent with 10 percent limited in scope), coral collection (43 percent with five percent limited in scope), pollution control (52 percent with five percent limited in scope), fishing regulations on reefs (76 percent with 24 percent limited in scope), and managing areas for protection and conservation (71 percent with 14 percent limited in scope). The most common regulatory mechanisms in place for *A. pharaonis* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. pharaonis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora genus* is the primary known threat of extinction for *A. pharaonis.* This is exacerbated by its restricted range and the need for protected habitats. The SRR also listed factors that reduce the threat of extinction including its moderate depth range (5 m to 25 m) and its common abundance levels in the Red Sea.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. pharaonis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes the Red Sea and Arabian Gulf, but relatively few islands. This exacerbates vulnerability to extinction over the foreseeable future because it is restricted a portion of the Indian Ocean with a limited amount of island and offshore habitat, and includes areas projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century (*i.e.,* the Red Sea and the Arabian Gulf). Its depth range of five to 25 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes reef slope and back-reef habitats, including at least upper reef slopes, mid-slope terraces, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. There is not enough information about its abundance to determine if it moderates or exacerbates extinction: It is common in the Red Sea, uncommon elsewhere, and has at least millions of colonies, but the Red Sea and Arabian Gulf portions of the population are expected to be severely impacted by threats over the foreseeable future. While depth distribution and habitat variability moderate vulnerability to extinction, the combination of its

geographic distribution and high susceptibility to ocean warming are likely to be more influential to the status of this species over the foreseeable future, because of the projected severity of ocean warming in much of the species' range in the foreseeable future, and its high susceptibility to this threat.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. pharaonis* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E) and disease (C); moderate vulnerability to acidification (E); common generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we confirmed the species' proposed listing determination as threatened. Based on the best available information provided above on *A. pharaonis'* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus still warrants listing as threatened at this time, because:

(1) *Acropora pharaonis* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of fishing (A), predation (C), and nutrients (A, E). These threats are expected to continue and increase into the future. In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D).

(2) *Acropora pharaonis'* distribution is constrained entirely to the Red Sea, Arabian Gulf, and western and central Indian Ocean where projections of ocean warming and local threats (*e.g.,* land-based sources of pollution) are both frequent and severe over the foreseeable future compared to other areas of the Indo-Pacific. A range constrained to a particular geographic area that is likely to experience severe and worsening threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Acropora pharaonis* suffered documented local extirpation in the southeast Arabian Gulf after the combined impacts of the 1996 and 1998 bleaching events, providing evidence that this species has already been severely impacted by ocean warming in some parts of its range.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. pharaonis'* spatial structure, demography, threat susceptibilities, and management also indicate that the species the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. pharaonis'* distribution in only the Indian Ocean and the Middle East, which increases it extinction risk as described above, its habitat includes sheltered lagoon patch reefs and other shallow reef environments. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence that the species is so spatially fragmented or geographically constrained that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) *Acropora pharaonis* absolute abundance is at least millions of colonies, which allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. pharaonis.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora polystoma

Introduction

The SRR and SIR provided the following information on *A. polystoma'*s morphology and taxonomy. Morphology was described as irregular clumps or plates with tapered branches of similar length and shape, and being similar to *A. massawensis* and *A. polystoma.* The taxonomy was described as not having much uncertainty, except in the Mariana Islands where specimens previously identified as *A. polystoma* may be a different species.

The public comments and information we gathered provided information on morphology or taxonomy of *A. polystoma.* One public comment stated that specimens of *A. polystoma* in Guam may represent a different species. We gathered supplemental information, including Veron (2014), which states that *A. polystoma* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. polystoma'*s distribution, habitat, and depth range. *Acropora polystoma* is distributed from the Red Sea to the Indian Ocean to the central Pacific. The species has the 28th largest range of 114 *Acropora* species. Its habitat includes areas exposed to strong wave action, including upper reef slopes, lower reef crests, reef flats, and other habitats, and its depth range is three to 10 meters.

The public comments did not provide any new or supplemental information on *A. polystoma'*s distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 48 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 19. Wallace (1999b) reports its occurrence in 19 of her 29 Indo-Pacific areas, many of which are significantly larger than Veron's ecoregions. Richards (2009) calculated

the geographic range of *A. polystoma* at 85 million km². The public comments and information we gathered provided nothing additional on *A. polystoma's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. polystoma's* abundance. *Acropora polystoma* has been reported as uncommon.

The public comments did not provide any new or supplemental information on *A. polystoma's* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. polystoma* occupied 6.7 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.74 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. polystoma,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. polystoma* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. polystoma's* life history. *Acropora polystoma* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. polystoma's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. polystoma.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. polystoma's* vulnerabilities as follows: High vulnerability to ocean warming and disease, moderate vulnerabilities to ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. polystoma's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *A. polystoma* has been rated as moderately or highly susceptible to bleaching and warming-induced disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. polystoma* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. polystoma* likely has high susceptibility ocean warming, and also likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, and collection and trade. Based on the available information, high susceptibility to disease, as stated in the proposed rule for this species, is not supported. The available information does not support more precise ratings of the susceptibilities of *A. polystoma* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. polystoma.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. polystoma* occurs in 48 Indo-Pacific ecoregions that encompass 41 countries' EEZs. The 41 countries are Australia, Brunei, China, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Israel, Japan, Jordan, Kenya, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Solomon Islands, Sudan, Taiwan, Tanzania, Thailand, Timor-Leste, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory), United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms relevant to *A. polystoma,* described first as the percentage of the above countries that utilize them to any degree and second, the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (24 percent with two percent limited in scope), coral collection (63 percent with 32 percent limited in scope), pollution control (39 percent with seven percent limited in scope), fishing regulations on reefs (90 percent with 20 percent limited in scope), and managing areas for protection and conservation (95 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. polystoma* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 32 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. polystoma.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated

that the high bleaching rate of the *Acropora* genus is the primary known threat of extinction for *A. polystoma,* which is exacerbated by the relatively restricted depth range and the uncommon abundance. It listed factors that reduce the threat of extinction including the wide geographic range, and the intertidal habitat which may indicate potentially increased tolerance.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. polystoma,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth distribution down to 10 meters may exacerbate the species exposure to some threats that are more severe in shallower water. Shallow reef environments can experience frequent changes in environmental conditions, extremes, high irradiance, and multiple stressors simultaneously. However, its habitat includes areas exposed to strong wave action, including upper reef slopes, lower reef crests, reef flats, and other high energy habitats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. In addition, areas of high currents and/or wave action experience high levels of mixing which can dilute adverse environmental conditions. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. polystoma* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. polystoma* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. polystoma's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Acropora polystoma's* distribution across the Red Sea, Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora polystoma's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) *A. polystoma* is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future as global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. polystoma* is not warranted for listing at this time under any of the listing factors.

Acropora retusa

Introduction

The SRR and SIR provided the following information on *A. retusa's* morphology and taxonomy. The morphology was described as flat plates with short thick digitate branchlets and taxonomy was described as having no taxonomic issues, but it is similar to *Acropora branchi, Acropora gemmifera,* and *Acropora monticulosa.*

The public comments did not provide any new or supplemental information on morphology or taxonomy of *A.*

retusa. We gathered supplemental information, which indicated that while there is some taxonomic uncertainty for this species, it is recognized as valid by experts (Veron, 2000; Wallace, 1999a). Veron (2014) states that *A. retusa* is readily confused with other *Acropora,* but we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. retusa's* distribution, habitat, and depth range. *Acropora retusa* is distributed from the Red Sea and the Indian Ocean to the central Pacific. The species has the 52nd largest range of 114 *Acropora* species. Its habitat includes shallow reef slope and back-reef areas, such as upper reef slopes, reef flats, shallow lagoons, and its depth range is one to five meters.

The public comments did not provide any new or supplemental information on *A. retusa's* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 23 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 21. Wallace (1999b) reports its occurrence in five of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) estimated its range at 68 million km^2. The public comments and information we gathered provided nothing additional on *A. retusa's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. retusa's* abundance. *Acropora retusa* has been reported as common in South Africa and uncommon elsewhere. The public comments did not provide any new or supplemental information on *A. retusa's* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. retusa* occupied 0.5 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.21 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare.'' Overall abundance was described as ''common in South Africa, rare elsewhere.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. retusa,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 49 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 18 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. retusa* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited amount of species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. retusa's* life history. *Acropora retusa* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. retusa'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. retusa.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. retusa's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. retusa's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora retusa* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. retusa* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. retusa* is likely highly susceptible to ocean warming, and also likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. retusa* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. retusa.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. retusa* occurs in 23 Indo-Pacific ecoregions that encompass 26 countries' EEZs. The 26 countries are Brunei, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India, Indonesia, Japan, Kenya, Madagascar, Malaysia, Mauritius, Mozambique, New Zealand (Cook Islands, Tokelau), Niue, Palau, Papua New Guinea, Samoa, Seychelles, Solomon Islands, South Africa, Sri Lanka, Tanzania, Tonga, Tuvalu, United States (CNMI, Guam, American Samoa), and Vietnam. The regulatory mechanisms relevant to *A. retusa,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (19 percent with eight percent limited in scope), coral collection (58 percent with 35 percent limited in scope), pollution control (38 percent with 12 percent limited in scope), fishing regulations on reefs (96 percent with 23 percent limited in scope), and managing areas for protection and conservation (100

percent with none limited in scope). The most common regulatory mechanisms in place for *A. retusa* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 35 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. retusa.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the high bleaching rate of the *Acropora genus* is the primary known threat of extinction for *A. retusa.* The species' rarity adds to its risk of extinction. The SRR also listed factors that reduce the threat of extinction including its geographic range and its occurrence in tidal pools (suggesting high physiological stress tolerance).

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. retusa,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range of zero to five meters exacerbates vulnerability to extinction over the foreseeable future. Shallow reef areas are often subjected to highly variable environmental conditions, extremes, high irradiance, and simultaneous effects from multiple stressors, both local and global in nature. A species restricted to such shallow depths is likely to have a high proportion of individuals exposed to higher levels of irradiance and other threats that are more severe in shallow habitats. Its habitat includes shallow reef slope and back-reef areas, such as upper reef slopes, reef flats, and shallow lagoons. While this generally moderates vulnerability to extinction for most species that can occupy a diverse set of habitat types, in this case, habitat heterogeneity likely does not provide much moderation of exposure to threats because of the shallow depth restriction for this species. Its absolute abundance of at least millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. However, its qualitative abundance is described as rare, which combined with its restricted depth distribution indicates it is likely that a high proportion of individuals will be affected by threats that are typically more severe in shallow habitats at any given point in time.

Listing Determination

In the proposed rule using the listing determination tool approach, *A. retusa* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we maintain the species' proposed listing determination as threatened. Based on the best available information provided above on *A. retusa's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora retusa* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of fishing (A), predation (C), and nutrients (A, E). These threats are expected to continue and increase into the future. In addition, existing regulatory mechanisms addressing global threats that contribute to extinction risk for this species inadequate (D);

(2) *Acropora retusa* is restricted to shallow habitat (zero to five meters), where many global and local threats may be more severe, especially near populated areas. Shallow reef areas are often subjected to highly variable environmental conditions, extremes, high irradiance, and simultaneous effects from multiple stressors, both local and global in nature. A limited depth range also reduces the absolute area in which the species may occur throughout its geographic range, and indicates that a large proportion of the population is likely to be exposed to threats that are worse in shallow habitats, such as simultaneously elevated irradiance and seawater temperatures, as well as localized impacts; and

(3) *Acropora retusa's* abundance is considered rare overall. This level of abundance, combined with its restricted depth distribution where impacts are more severe, leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. retusa's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) *Acropora retusa's* distribution from South Africa to the Pitcairn Islands is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and

other areas. This distribution reduces exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) While *Acropora retusa* is limited to shallow depths, which increases its extinction risk as described above, its geographic range encompasses heterogeneous habitat, the benefits of which are explained in detail in the Coral Habitat sub-section above, across almost half of the coral reef area in the Indo-Pacific, and there is no evidence to suggest that it is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(3) While *Acropora retusa*'s qualitative abundance is characterized as rare, its absolute abundance is at least millions of colonies. Additionally, *A. retusa* is considered common in a portion of its range (South Africa), indicating it is not of such low abundance that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. retusa.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora rudis

Introduction

The SRR and SIR provided the following information on *A. rudis'* morphology and taxonomy. Morphology was described as arborescent with large, tapered, prostate branches, reaching a maximum size of 50 cm and taxonomy was described as having no taxonomic issues but being similar in appearance to *A. hemprichii* and *A. variolosa.*

The public comments and information we gathered provided information on morphology or taxonomy. One public comment stated that specimens collected in American Samoa and identified by the American Samoa Department of Marine and Water Resources as *A. rudis* appear to be *A. aculeus,* thereby illustrating the species identification uncertainties associated with this species. We gathered supplemental information, including Veron (2014), which states that *A. rudis* is readily confused with *Acropora schmitti* in shallow habitats, but is very distinctive otherwise, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. rudis'* distribution, habitat, and depth range. *Acropora rudis'* distribution has long been thought by Veron and others to be restricted to the northeastern Indian Ocean, with recent reports by Fenner suggesting it may also occur in New Caledonia and the Samoas. The species has the 24th smallest range of 114 *Acropora* species. Its predominant habitat is lower reef crests and upper reef slopes in three to 15 m of depth.

The public comments did not provide supplemental information on *A. rudis'* distribution. We gathered supplemental information, including Veron (2014), which provides much more detailed range map for this species than the maps used in the SRR. Veron reports that this species is confirmed in seven of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional two. Veron (2014) does not show it in New Caledonia and the Samoas, apparently because he does not believe there is enough information available to strongly predict its occurrence there. Wallace (1999b) reports its occurrence in four of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range of *A. rudis* at two million km^2, which was the 24th smallest range of the 114 *Acropora* species examined. The public comments and information we gathered provided nothing additional on *A. rudis'* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. rudis'* abundance. *Acropora rudis* has been reported as uncommon, however, it has been noted to comprise as much as half of the *Acropora* in some areas.

The public comments did not provide supplemental information on *A. rudis'* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. rudis* occupied 0.1 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.25 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare.'' Overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. Other information indicates that *A. rudis* can be locally common, as it has been reported to comprise as much as half of the *Acropora* in the area south of the Hikkaduwa Nature Reserve in Sri Lanka (Rajasuriya, 2002). As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. rudis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 59 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 22 percent. This estimated decline is approximately 50 percent higher than most other Indo-Pacific *Acropora* species included in the paper, apparently because of the combined restricted geographic and depth ranges (Carpenter *et al.,* 2008). However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local

threats. Given that *A. rudis* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. rudis'* life history. There is no information available on the reproductive biology of *A. rudis,* but all other *Acropora* studied to date are hermaphroditic broadcast spawners. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. rudis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, and nutrients. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. rudis.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. rudis'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide supplemental information on *A. rudis'* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora rudis* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. rudis* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. rudis* is likely highly susceptible to ocean warming, and also likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. rudis* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. rudis.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. rudis* occurs in seven Indo-Pacific ecoregions that encompass eight countries' EEZs. The eight countries are Bangladesh, India (Andaman and Nicobar Islands), Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka, and Thailand. The regulatory mechanisms relevant to *A. rudis,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (25 percent with 13 percent limited in scope), coral collection (38 percent with 13 percent limited in scope), pollution control (50 percent with 13 percent limited in scope), fishing regulations on reefs (100 percent with 25 percent limited in scope), and managing areas for protection and conservation (88 percent with 13 percent limited in scope). The most common regulatory mechanisms in place for *A. rudis* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species. General coral protection laws are much less common regulatory mechanisms for the management of *A. rudis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk of *A. rudis* include the relatively high susceptibility of the genus *Acropora* to common threats, and a particularly narrow and somewhat disjointed biogeographic range with limited latitudinal extent. They stated that there are no factors that notably reduce the threat of extinction.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. rudis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes the Maldives and parts of the northeastern Indian Ocean. This range exacerbates vulnerability to extinction over the foreseeable future because it is restricted to an area projected to experience severe climate change and localized impacts within the foreseeable future. Its depth range is three to 15 meters. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus will be more severely affected by warming-induced bleaching. Its habitat includes lower reef crests and upper reef slopes. This moderates vulnerability to extinction over the foreseeable future because upper reef slopes are physically diverse and widespread reef areas, thus the species occurs in reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. It is rare, but has at least millions of colonies. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species

occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus will be more severely affected by warming-induced bleaching. Its absolute abundance of at least millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. However, its qualitative abundance is described as rare, which combined with its restricted depth distribution indicates it is likely that a high proportion of individuals will be affected by threats that are typically more severe in shallow habitats at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. rudis* was proposed for listing as endangered because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. rudis* from endangered to threatened. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information provided above on *A. rudis's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora rudis* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of fishing (A), predation (C), and nutrients (A, E). These threats are expected to continue and increase into the future. In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D);

(2) *Acropora rudis'* geographic distribution is restricted to the Maldives and northeastern Indian Ocean. While coral reefs in this area are projected to experience climate change effects later than the average predictions of severe conditions, it is nevertheless projected to experience severe impacts from combined climate change and localized human impacts for coral reefs within the foreseeable future. In addition, its range is constrained to a particular geographic area such that a high proportion of the population of this species is likely to be exposed to threats that occur throughout this range over the foreseeable future; and

(3) While *A. rudis'* abundance can be locally common, overall it is considered uncommon or rare, which means it does not possess as much buffering capacity in the form of variability in response between individuals or absolute abundance that would be afforded to a more abundant or common species. Considering the limited range of this species, this level of abundance leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. rudis'* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. rudis'* distribution is restricted to the Maldives and northeastern Indian Ocean, its habitat is upper reef slopes of fringing reefs. This moderates vulnerability to extinction currently because the species occurs in common and variable habitats that are predicted, on local and regional scales, to experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest it is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) *Acropora rudis'* abundance is locally common in portions of its range, it has at least millions of colonies, and there is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events;

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. rudis.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora speciosa

Introduction

The SRR and SIR provided the following information on *A. speciosa's* morphology and taxonomy. Morphology was described as thick cushions or bottlebrush branches and taxonomy was described as having no taxonomic issues but being similar in appearance to *A. echinata* and *A. granulosa.*

The public comments did not provide supplemental information on morphology or taxonomy. We gathered supplemental information, including by Wallace (1999b), indicating species identification uncertainty for *A. speciosa.* However, Veron (2014) states that *A. speciosa* is distinctive so we conclude it can be identified by experts and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. speciosa's* distribution, habitat, and depth range. *Acropora speciosa* is distributed from Indonesia to French Polynesia. The

species has the 51st smallest range of 114 *Acropora* species. It occurs on lower reef slopes and walls, especially those characterized by clear water and high *Acropora* diversity on steep slopes. Its depth range is 12 to 40 meters, and it has been found in mesophotic habitats.

The public comments did not provide supplemental information on *A. speciosa's* distribution. We gathered supplemental information, including Veron (2014), which reports that *A. speciosa* is confirmed in 26 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 12. Wallace (1999b) reports its occurrence in 10 of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) estimated its range at 20 million km². The species was tentatively identified in mesophotic assemblages in American Samoa: ''Shallow, plate-like reefs (more than 50 m) were comprised mostly of *Acropora* spp., possibly *A. clathrata, A. speciosa,* and *A. crateriformis*'' (Bare *et al.,* 2010). The public comments and information we gathered provided nothing additional on *A. speciosa's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. speciosa's* abundance. *Acropora speciosa* has been reported as uncommon.

The public comments did not provide supplemental information on *A. speciosa's* abundance. We gathered supplemental information, including Richards *et al.* (2013b), which concludes that this species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction. Veron (2014) reports that *A. speciosa* occupied 8.3 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.60 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was described as ''usually uncommon.'' Veron did not infer trends in abundance from these data.

Richards *et al.* (2008) reported that *A. speciosa* had the ninth smallest population of the 15 rare *Acropora* species they studied. Richards *et al.* (2008: Appendix 1) gave the total world population of this species as 10,942 ± 5,471 colonies, and the effective population size (*i.e.,* a mathematical estimate of the size of the breeding population) as 1,204 colonies. The calculation of the total world population of this species was flawed, since the area of 1 km² was given as 1,000 m², when it is actually 1,000,000 m². Thus, the correct population estimate is 1,000 times greater than stated, or a total population size of 10,942,000 colonies, and an effective population size of 1,204,000 colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. speciosa,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. speciosa* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. speciosa's* life history. Based on information from other *Acropora* species, *A. speciosa* is most likely a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. speciosa's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, and nutrients. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. speciosa.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. speciosa's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide supplemental information on *A. speciosa's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora speciosa* has been rated as moderately or highly susceptible to bleaching and coral disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. speciosa* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. speciosa* likely is highly susceptible to ocean warming, and also likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. speciosa* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. speciosa.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. speciosa* occurs in 26 Indo-Pacific ecoregions that encompass 18 countries' EEZs. The 18 countries are Australia, Brunei, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Malaysia, Maldives, Marshall Islands, Palau, Papua New Guinea, Philippines, Solomon Islands, Taiwan, Timor-Leste, United States (PRIAs), and Vietnam. The regulatory mechanisms relevant to *A. speciosa,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (39 percent with none limited in scope), coral collection (67 percent with 28 percent limited in

scope), pollution control (50 percent with 17 percent limited in scope), fishing regulations on reefs (94 percent with 17 percent limited in scope), and managing areas for protection and conservation (100 percent with six percent limited in scope). The most common regulatory mechanisms in place for *A. speciosa* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also common for the species, but 28 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are less common regulatory mechanisms for the management of *A. speciosa.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *A. speciosa* include the relatively high susceptibility of the genus *Acropora* to common threats. It listed factors that reduce the threat of extinction for this species including high local abundance and broad depth range.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. speciosa,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the ecoregions in the Coral Triangle, the western Pacific, and the GBR, as well as parts of the Indian Ocean and central Pacific. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the central Pacific, so portions of the population in these areas will be less exposed to severe conditions. Its depth range of 12 to 40 moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters. However, while acidification is generally predicted to accelerate more quickly in waters that are deeper and cooler than those in which the species occurs, the lower portion of its depth range may be affected by acidification over the foreseeable future. Its habitat is lower reef slopes and walls, especially those characterized by clear water and high *Acropora* diversity on steep slopes. This specialized habitat may exacerbate vulnerability to extinction over the foreseeable future because the species is somewhat limited in its habitat, reducing the buffering capacity of habitat heterogeneity. While the geographic distribution, depth distribution, and habitat of *A. speciosa* all may moderate extinction risk over the foreseeable future, its effective population size of 1.2 million colonies substantially exacerbate extinction risk over the foreseeable future, because increasingly severe conditions are likely to affect a high proportion of its effective population at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. speciosa* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we maintain the species' proposed listing determination as threatened. Based on the best available information provided above on *A. speciosa's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora speciosa* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of fishing (A), predation (C), and nutrient enrichment (A, E). These threats are expected to continue and increase into the future. In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D);

(2) Although *A. speciosa's* habitat includes mesophotic depths which may provide some buffering capacity against threats that are more severe in shallower reef environments such as warming, its habitat is quite specialized, which may limit buffering capacity if threats are more pronounced within the type of habitat where the species occurs within; and

(3) *Acropora speciosa's* effective population size of 1.2 million genetically distinct colonies could increase vulnerability to extinction if a high proportion of the effective population occurs within the parts of its range most affected by threats, potentially causing the species to decline to such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. speciosa's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) *Acropora speciosa* lives at depths of at least 40 m, providing some buffering capacity against threat-induced mortality events that may be more severe in shallow habitats; and

(2) *Acropora speciosa's* total population size is estimated at 10.9 million colonies, approximately ten times the size of its effective population, providing a buffer against the species declining to such low abundance that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. speciosa.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora striata

Introduction

The SRR and SIR provided the following information on *A. striata's* morphology and taxonomy. Morphology was described as dense thickets with short cylindrical branches, and taxonomy was described as having no taxonomic issues but being similar in appearance to *A. tumida, A. sekesiensis,* and *A. parahemprichii.*

The public comments and information we gathered provided supplemental information on morphology or taxonomy. One public comment stated that specimens reported as *A. striata* in Guam differ in colony form and in other characteristics from the species described as *A. striata* in Veron (2000). We gathered supplemental information, including Wallace (1999b), which provide contradictory information to Veron (2000) regarding the morphology of this species. Veron (2014) states that *A. striata* is easily confused with other *Acropora* with a bushy growth form. Although there is uncertainty, we conclude that *A. striata* can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. striata's* distribution, habitat, and depth range. *Acropora striata* is distributed from Indonesia to French Polynesia, and possibly to Japan. The species has the 54th largest range of 114 *Acropora* species. Its predominant habitat is upper reef slopes, and it occurs in other shallow habitats such as mid-slopes and lagoons, and its depth range is at 10 to 25 m.

The public comments did not provide any new or supplemental information on *A. striata's* distribution. We gathered supplemental information, including Veron (2014), which reports that *A. striata* is confirmed in 36 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 17. Wallace (1999b) reports its occurrence in 16 of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) estimated its range at 50 million km^2. The public comments and information we gathered provided nothing additional on *A. striata's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. striata's* abundance. *Acropora striata* has rare overall abundance but may be locally dominant in some areas in Japan.

The public comments did not provide any new or supplemental information on *A. striata's* abundance. We gathered supplemental information, including Richards *et al.* (2013b), which concludes that this species is globally widespread, locally widespread, and locally rare. Veron (2014) reports that *A. striata* occupied 3.2 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.38 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''may be locally dominant in Japan, uncommon elsewhere.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. striata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. striata* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years but a precise quantification is not possible due to the limited amount of species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. striata's* life history. *Acropora striata* is a hermaphroditic spawner, with larval development and settlement taking five to 10 days, and larvae remaining competent for 31 days. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. striata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. striata.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. striata's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. striata's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora striata* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). There is no species-specific information for the susceptibility of *A. striata* to any threat. Based on information from other *Acropora* species provided in the genus description above, *A. striata* is likely highly susceptible to ocean warming, and also likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation,

nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. striata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. striata.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. striata* occurs in 36 Indo-Pacific ecoregions that encompass 38 countries' EEZs. The 38 countries are Australia, China, Comoros Islands, Egypt, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Japan, Jordan, Kenya, Kiribati, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, Nauru, New Zealand (Cook Islands, Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sudan, Taiwan, Tanzania, Thailand, Timor-Leste, Tonga, Tuvalu, United States (CNMI, Guam, American Samoa, PRIAs), and Vietnam. The regulatory mechanisms relevant to *A. striata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (26 percent with 3 percent limited in scope), coral collection (58 percent with 26 percent limited in scope), pollution control (45 percent with eight percent limited in scope), fishing regulations on reefs (89 percent with 21 percent limited in scope), and managing areas for protection and conservation (95 percent with eight percent limited in scope). The most common regulatory mechanisms in place for *A. striata* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 26 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. striata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *A. striata* include its locally rare abundance. Factors that reduce the potential extinction risk *A. striata* include its relatively broad global distribution. Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. striata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from ten to 25 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower temperatures than surface waters due to local and micro-habitat variability in environmental conditions, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes, mid-slopes and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. striata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. striata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. striata's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora striata's* distribution across most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to

occur uniformly throughout the species range within the foreseeable future);

(2) *Acropora striata's* total absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. striata* is not warranted for listing at this time under any of the listing factors.

Acropora tenella

Introduction

The SRR and SIR provided the following information on *A. tenella's* morphology and taxonomy. Morphology was described as horizontal, platy colonies with flattened branches, and taxonomy was described as having no taxonomic issues but being similar in appearance to *Acropora pichoni.*

The public comments did not provide supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014), which states that *A. tenella* is readily confused with other flattened, finely branched *Acropora.* However, the species is recognized as valid and distinct by experts (Veron, 2000; Wallace, 1999a), so we conclude it can be identified by experts and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. tenella's* distribution, habitat, and depth range. *Acropora tenella* is distributed from Japan to Indonesia to New Guinea and the Marshall Islands. The species has the 43rd smallest range of 114 *Acropora* species. Its habitat is lower reef slopes and shelves between 40 and 70 meters, and it apparently is specialized for calm, deep conditions.

The public comments did not provide supplemental information on *A. tenella's* distribution. We gathered supplemental information, including Veron (2014), which reports that *A. tenella* is confirmed in 18 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional six. Wallace (1999b) reports its occurrence in six of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) estimated its range at 15 million km^2, which was the 43rd smallest range of 114 *Acropora* species examined. *Acropora tenella* was one of three species that dominated mesophotic reef habitat in Okinawa between 35 and 47 m depth (Sinniger *et al.,* 2013).

Demographic Information

The SRR and SIR provided the following information on *A. tenella's* abundance. *Acropora tenella* has been reported as locally common in some locations.

The public comments did not provide supplemental information on *A. tenella's* abundance. We gathered supplemental information, including Richards (2013b), which concludes that this species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction. Veron (2014) reports that *A. tenella* occupied 0.4 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.25 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare,'' and its overall abundance was also described as ''rare.'' Veron did not infer trends in abundance from these data.

Richards *et al.* (2008) reported that *A. tenella* had the seventh lowest population of the 15 rare *Acropora* species they studied. Richards *et al.* (2008) gave the total world population of this species as about 5207 +/-1606 colonies, and the effective population size (*i.e.,* a mathematical estimate of the size of the breeding population) as about 573 colonies (Richards *et al.,* 2008). The calculation of the total world population of this species was flawed, since the area of 1 km^2 was given as 1,000 m^2 (Richards *et al.,* 2008: Appendix 1), when it is actually 1,000,000 m^2. Thus, the correct population estimate is 1,000 times greater than stated, or a total population size of 5,207,000 colonies, and an effective population size of 573,000 colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. tenella,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 39 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. tenella* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. tenella's* life history. Based on information from other *Acropora* species, *A. tenella* is most likely a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. tenella's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *A. tenella.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. tenella's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide supplemental information on *A. tenella's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora tenella* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. tenella* to any other threat. Based on information from other *Acropora* species provided in the genus description above, *A. tenella* is likely highly susceptible to ocean warming, and also likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. tenella* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. tenella.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. tenella* occurs in 18 Indo-Pacific ecoregions that encompass 12 countries' EEZs. The 12 countries are Brunei, China, Federated States of Micronesia, Indonesia, Japan, Marshall Islands, Palau, Papua New Guinea, Philippines, Taiwan, United States (PRIAs), and Vietnam. The regulatory mechanisms relevant to *A. tenella,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (25 percent with none limited in scope), coral collection (58 percent with 33 percent limited in scope), pollution control (33 percent with 17 percent limited in scope), fishing regulations on reefs (92 percent with 17 percent limited in scope), and managing areas for protection and conservation (100 percent with eight percent limited in scope). The most common regulatory mechanisms in place for *A. tenella* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat common for the species, but 33 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are much less prominent regulatory mechanisms for the management of *A. tenella.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that one factor that reduces the potential extinction risk for this species is its deep depth range, which reduces exposure to surface-based threats. Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. tenella,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is limited to the Coral Triangle and parts of the western equatorial Pacific Ocean. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its mesophotic depth range of 40 to 70 meters moderates vulnerability to extinction over the foreseeable future because of lower irradiance, sharply reducing warming-induced bleaching. In addition, other threats usually occur at lower levels at such depths, such as sedimentation resulting from land-based sources of pollution. However, unlike the other *Acropora* species in this final rule, *A. tenella's* mesophotic habitat may often have substantially cooler temperatures than the shallower photic zone, and thus more likely to be affected by increasing acidification over the foreseeable future. Its habitat consists of lower reef slopes and shelves spanning 40 to 70 meters of depth, a much different habitat than the surface and shallow reef habitats occupied by the other *Acropora* species in this final rule. Its habitat may moderate vulnerability to extinction over the foreseeable future because of variable conditions at any given point in time. However, its habitat may exacerbate extinction risk over the foreseeable future because increasing acidification is expected to vary less spatially at these depths on coral reefs than in shallower areas on coral reefs. Its effective population size of approximately half a million colonies, combined with the location of its range, exacerbates vulnerability to extinction because increasingly severe conditions within the limited species range are likely to affect a high proportion of its effective population at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. tenella* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on moderate geographic distribution and wide depth distribution, E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we maintain the species' proposed listing determination as threatened. Based on the best available information provided above on *A. tenella's* spatial structure,

demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Acropora tenella* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of fishing (A), predation (C), and nutrient enrichment (A, E). These threats are expected to continue and increase into the future. Although its mesophotic depth distribution may provide some buffering capacity against threats that are more severe in shallower reef environments, it may not provide buffering capacity against other threats for which depth is a less influential factor, like acidification and disease. In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D);

(2) *Acropora tenella's* distribution is constrained mostly within the Coral Triangle and western equatorial Pacific, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the western equatorial Pacific that suggest future ocean warming events may be more severe than average in this part of the world. Although the mesophotic range of the species reduces the impacts of warming, disease, and localized human impacts, the species occurs at mesophotic depths where the effects of acidification are expected to be greater over the foreseeable future than in shallower areas; and

(3) *Acropora tenella's* effective population size of 0.5 million colonies could increase vulnerability to extinction if a high proportion of the effective population occurs within the parts of its range most affected by threats, potentially causing the species to decline to such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. tenella's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *Acropora tenella's* range is constrained to mesophotic habitat in the Coral Triangle and western Pacific, its habitat heterogeneity moderates vulnerability to extinction currently because of variable conditions at any given point in time. There is no evidence to suggest that the species is not so spatially fragmented or geographically constrained that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) *Acropora tenella's* mesophotic depth distribution provides some buffering capacity against threats that are more severe in shallower environments such as nutrient enrichment, sedimentation, and ocean warming;

(3) *Acropora tenella's* total population size is estimated at five million colonies, approximately ten times the size of its effective population, providing a buffer against the species declining to such low abundance that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time. Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. tenella*. However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Acropora vaughani

Introduction

The SRR and SIR provided the following information on *A. vaughani's* morphology and taxonomy. Morphology was described as open-branched, bushy, arborescent colonies, and the taxonomy was described as having no taxonomic issues but being similar to *A. horrida, A. tortuosa, A. rufus* and *A. austera.*

The public comments did not provide supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014), which indicates that *A. vaughani* is distinctive, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. vaughani's* distribution, habitat, and depth range. *Acropora vaughani* is distributed from the Red Sea to Fiji. The species has the 34th largest range of 114 *Acropora* species. It is found in numerous reef slope and back-reef habitats with turbid water, including but not limited to, upper reef slopes, mid-slope terraces, lagoons, and adjacent habitats, and the depth range is from low tide to 20 or 30 meters.

The public comments did not provide supplemental information on *A. vaughani's* distribution. We gathered supplemental information, including Veron (2014), who reports that *A. vaughani* is confirmed in 59 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 13. Wallace (1999b) reports its occurrence in 24 of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range of *A. vaughani* at over 80 million km^2. The public comments and information we gathered provided nothing additional on *A. vaughani's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *A. vaughani's* abundance. *Acropora vaughani* is reported to be uncommon. The public comments did not provide supplemental information on *A. vaughani's* abundance. We gathered supplemental information, including Richards *et al.* (2013b), which conclude from their data that this species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category of *Acropora* with the predicted consequence of local extinction. Veron (2014) reports that *A. vaughani* occupied 7.5 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.69 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was

described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. vaughani,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. vaughani* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. vaughani's* life history. *Acropora vaughani* is a hermaphroditic spawner with lecithotrophic (yolk-sac) larvae. It is one of several *Acropora* that achieve reproductive isolation by spawning earlier in the evening than other species. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. vaughani's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR also provided species-specific information reporting that *Acropora* species including *A. vaughani* suffered greater than 90 percent mortality during the 1996 and 1998 bleaching events in the southeastern Arabian Gulf, but that portions of some *A. vaughani* survived, contributing to potentially accelerated recovery. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. vaughani.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. vaughani's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments provided some supplemental information on *A. vaughani's* threat susceptibilities. One comment stated that *A. vaughani* is more susceptible to predation than indicated in the proposed rule because of the overlap in the depth ranges of this species with crown of thorns starfish. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora vaughani* has been rated as moderately or highly susceptible to bleaching, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). All *Acropora* species in the southeastern Arabian Gulf, including *A. vaughani,* suffered nearly complete mortality during the 1996 bleaching event (Riegl, 1999), but some *A. vaughani* colonies survived the 1998 mass bleaching event (Riegl and Piller, 2001). No other species-specific information is available for the susceptibility of *A. vaughani* to any other threat. For the other threats, based on information from other *Acropora* species provided in the genus description above, *A. vaughani* may be susceptible to the effects of coral disease, ocean acidification, predation, sedimentation, nutrient enrichment, trophic effects of fishing, sea-level rise, and collection and trade. Thus, based on the available species-specific and genus information summarized above, *A. vaughani* is likely highly susceptible to ocean warming, and also likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. vaughani* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. vaughani.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. vaughani* occurs in 59 Indo-Pacific ecoregions that encompass 43 countries' EEZs. The 43 countries are Australia, Cambodia, China, Comoros Islands, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Israel, Japan, Jordan, Kenya, Kiribati, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sri Lanka, Sudan, Taiwan, Tanzania, Thailand, Timor-Leste, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory), United States (CNMI, Guam, American Samoa, PRIAs), Vietnam, and Yemen. The regulatory mechanisms relevant to *A. vaughani,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (28 percent with five percent limited in scope), coral collection (58 percent with 26 percent limited in scope), pollution control (44 percent with seven percent limited in scope), fishing regulations on reefs (91 percent with 19 percent limited in scope), and managing areas for protection and conservation (95 percent with nine percent limited in scope). The most common regulatory mechanisms in place for *A. vaughani* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 26 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. vaughani.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat

susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that reduce the potential extinction risk for this species include the broad global distribution, the wide range of habitats occupied by *A. vaughani,* its use in restoration and replantation, and its known recovery after bleaching events via tissue remnants from within the reef framework.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. vaughani,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes about half of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from low tide to 20 or 30 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes turbid upper reef slopes, mid-slope terraces, lagoons, and adjacent habitats, and the depth range is from low tide to 20 or 30 meters. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. vaughani* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. vaughani* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. vaughani's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora vaughani's* distribution is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora vaughani's* total abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. vaughani* is not warranted for listing at this time under any of the listing factors.

Acropora verweyi

Introduction

The SRR and SIR provided the following information on *A. verweyi's* morphology and taxonomy. Morphology was described as clumps with noticeably rounded or bulb-like corallites, and taxonomy was described as having no taxonomic issues.

The public comments did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014) which states that *A. verweyi* is distinctive, thus we conclude it can be identified by experts

and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. verweyi's* distribution, habitat, and depth range. *Acropora verweyi* is distributed from the western Indian Ocean to the central Pacific. The species has the 16th largest range of 114 *Acropora* species. Its habitat is predominantly lower reef crests, upper reef slopes and other high energy habitats and its depth range is to at least 15 m.

The public comments did not provide any new or supplemental information on *A. verweyi's* distribution. We gathered supplemental information, including Veron (2014), which reports that *A. verweyi* is confirmed in 63 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 17. Wallace (1999b) reports it from 17 of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards (2009) calculated the geographic range of *A. verweyi* at over 100 million km^2. *Acropora verweyi* occurs in many different habitats, including fringing reefs with turbid water (Veron, 2000), and shallow reef top and reef edge habitats (Wallace, 1999b). *Acropora verweyi* occurs on upper reef slopes, especially those exposed to wave action or currents (Veron, 2014). Carpenter *et al.* (2008) give the depth range for *A. verweyi* as 2 to 15 meters.

Demographic Information

The SRR and SIR provided the following information on *A. verweyi's* abundance. *Acropora verweyi* is generally common, but can be locally abundant, especially in the western Indian Ocean. The public comments did not provide any new or supplemental information on *A. verweyi's* abundance. We gathered supplemental information, including Richards *et al.* (2013b), which concludes that the species is globally widespread, locally widespread, and locally rare. Veron (2014) reports that *A. verweyi* occupied 4.7 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.59 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''occasionally common in the western Indian Ocean.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. verweyi,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. verweyi* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible.

Other Biological Information

The SRR and SIR provided the following information on *A. verweyi's* life history. *Acropora verweyi* is a hermaphroditic spawner that is a participant in mass broadcast spawning in some localities. The public comments and information we gathered did not provide anything additional to the above-described biological information based on the limited species-specific information.

Susceptibility to Threats

To describe *A. verweyi's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. verweyi.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. verweyi's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, nutrients, and predation, and low vulnerabilities to sedimentation, sea-level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. verweyi's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Acropora verweyi* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). *Acropora verweyi* tolerates high temperatures in back-reef pools on Ofu, American Samoa where corals are more tolerant than elsewhere due to repeated brief exposure to high temperatures (Craig *et al.,* 2001), although *A. verweyi* is not abundant and acroporids still bleach some in these pools (Fenner and Heron, 2008). *Acropora verweyi* was relatively resistant to bleaching in Moorea during the 1991 warming event (Gleason, 1993). Reduced carbonate concentrations decrease calcification rates in *A. verweyi* (Marubini *et al.,* 2003). While the overall magnitude of calcification was similar to the other coral species tested, *A. verweyi* showed reductions in mineral density that other species did not, potentially making it more susceptible to bioerosion or breaking from wave action (Marubini *et al.,* 2003). No other species-specific information is available for the susceptibility of *A. verweyi* to any other threat. For the other threats, based on information from other *Acropora* species provided in the genus description above, *A. verweyi* may be susceptible to the effects of disease, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. Thus, based on the available species-specific and genus information summarized above, *A. verweyi* is likely to have some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. verweyi* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. verweyi.* Criticisms of our approach

received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. verweyi* occurs in 63 Indo-Pacific ecoregions that encompass 41 countries' EEZs. The 41 countries are Australia, Cambodia, China, Comoros Islands, Egypt, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Japan, Jordan, Kenya, Kiribati, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, Nauru, New Zealand (Cook Islands, Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sri Lanka, Sudan, Taiwan, Tanzania, Thailand, Tonga, Tuvalu, United Kingdom (Pitcairn Islands), United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *A. verweyi,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (27 percent with seven percent limited in scope), coral collection (56 percent with 29 percent limited in scope), pollution control (44 percent with seven percent limited in scope), fishing regulations on reefs (90 percent with 22 percent limited in scope), and managing areas for protection and conservation (95 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. verweyi* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 29 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. verweyi.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that the factors that increase the potential extinction risk for *A. verweyi* include the relatively high susceptibility of the genus *Acropora* to common threats. It listed factors that reduce the potential extinction risk for *A. verweyi* including its very wide latitudinal and longitudinal geographic range, observations of occasional resistance to thermal stress in shallow backreef pools, and its relatively common abundance.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. verweyi,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from low tide to at least 15 meters. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes lower reef crests, upper reef slopes and other high energy habitats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. In addition, areas with good circulation experience high levels of mixing which can dilute adverse environmental conditions. Its absolute abundance of at least tens to hundreds of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. verweyi* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. verweyi* from threatened to not warranted. No supplemental information or public comments changed our assessment of the type and severity of threats affecting *A. verweyi.* Rather, we made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. verweyi's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acropora verweyi's* distribution across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central

Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Acropora verweyi's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Despite its current distribution, *A. verweyi* is characterized as uncommon overall, thus its abundance may not provide much buffering capacity in terms of overall numbers. In addition, *A. verweyi* showed reductions in mineral density in response to reduced carbonate concentrations, potentially making it more susceptible to bioerosion or breaking from wave action as ocean acidification increases. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of its range to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. verweyi* is not warranted for listing at this time under any of the listing factors.

Genus Anacropora

Genus Introduction

The family Acroporidae includes five genera, *Acropora, Montipora, Astreopora, Isopora,* and *Anacropora. Anacropora* contains seven species, all occurring in the Indo-Pacific. Like most *Acropora* species, colonies of *Anacropora* species are branching. Unlike *Acropora,* there is no corallite on the tip of the branches of *Anacropora* colonies, a diagnostic characteristic of *Acropora* (Veron, 2000). *Anacropora* is morphologically like branching *Montipora* without an encrusting base (Veron and Wallace, 1985). The SRR and SIR provided the following genus-level introductory information on *Anacropora.* Morphologic taxonomy has been unable to resolve whether *Anacropora* are recently derived from *Montipora* or from *Acropora,* but genetic evidence supports the former view.

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Anacropora.* The bleaching susceptibility in the genus *Anacropora* is not well known. In the 1998 bleaching event in Palau, *Anacropora* colonies (not identified to species) were moderately affected relative to other coral genera, with total mortality of some *Anacropora* colonies in some limited areas, while those in other areas were unaffected. This was a major bleaching event, with 48 percent bleaching overall (all coral species combined), and bleaching and mortality of different genera and species ranging from zero to nearly 100 percent (Bruno *et al.,* 2001). With regard to predation, *A. puertogalerae* have been reported to be only preyed on by wrasses in proportion to its availability (Cole *et al.,* 2010). With regard to sedimentation and nutrients, some *Anacropora* species appear resistant to both these threats while others appear susceptible (Mohammed and Mohammed, 2005). Collection and trade in the genus *Anacropora* has been reported to be negligible, with only 14 pieces reported in export over the last decade (CITES, 2010).

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Anacropora.* We gathered supplemental information that provided the following. One study reported that disease was not found on *Anacropora* at a site in Indonesia, while the taxon with the highest prevalence out of 25 taxa had 8 percent prevalence of disease (Haapkyla *et al.,* 2007).

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and information we gathered, we can make the following inferences about the susceptibilities of an unstudied *Anacropora* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. The one available study on the effects of ocean warming on *Anacropora* reported variable thermal-induced bleaching within the genus (Bruno *et al.,* 2001). While there is no other genus-level or species-specific information on the susceptibilities of *Anacropora* species to ocean warming, the SRR rated it as ''high'' importance to corals. Thus, we conclude that an unstudied *Anacropora* species has some susceptibility to ocean warming. Similarly for ocean acidification, while there is no genus-level or species-specific information on the susceptibilities of *Anacropora* species to ocean acidification, the SRR rated it as ''medium-high'' importance to corals. Thus, we conclude that an unstudied *Anacropora* species has some susceptibility to ocean acidification. The one available study on the effects of disease on *Anacropora* reported no disease on *Anacropora* colonies (Haapkyla *et al.,* 2007). However, this single study is inadequate to imply susceptibility level for all *Anacropora* species, thus we conclude that *Anacropora* has some susceptibility to disease.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Anacropora* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. The one available study on the effects of sedimentation and nutrients (Mohammed and Mohammed, 2005) on *Anacropora* species suggest either intermediate or variable susceptibilities. Thus we conclude that an unstudied *Anacropora* species has some susceptibility to sedimentation and nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Anacropora* species is likely to have some susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. The one available study on the effects of predation (Cole *et al.,* 2010) on *Anacropora* species suggest either intermediate or variable susceptibility, thus we conclude that an unstudied *Anacropora* species has some susceptibility to predation. Because the available information suggests that *Anacropora* species are lightly collected and traded, an unstudied *Anacropora* species is likely to have low susceptibility to collection and trade.

In conclusion, an unstudied *Anacropora* species is likely to have some susceptibility to ocean warming, disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and low susceptibility to collection and trade.

Anacropora puertogalerae

Introduction

The SRR and SIR provided the following information on *A. puertogalerae'*s morphology and taxonomy. Morphology was described as compact branches, typically less than 13 mm in diameter and tapering, with thin spines under corallites, and taxonomy was described as having no taxonomic issues but being similar in appearance to *A. spinosa* and *A. forbesi.*

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *A. puertogalerae,* but that there is a moderate level of species identification uncertainty for this species. However, the species can be identified by experts (Fenner, 2014b), thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. puertogalerae'*s distribution, habitat, and depth range. *Anacropora puertogalerae'*s distribution is the Coral Triangle and western equatorial Pacific, plus southern Japan to the GBR. *Its* habitat includes both coral reef and non-reefal environments, including upper reef slopes, mid-slopes, and lagoons on reefs, and various substrates in non-reefal areas. Its depth range as five to at least 20 meters depth.

The public comments did not provide any new or supplemental information on *A. puertogalerae'*s distribution. We gathered supplemental information, including Veron (2014), which reports that *A. puertogalerae* is confirmed in 26 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional seven.

Demographic Information

The SRR and SIR provided the following information on *A. puertogalerae'*s abundance. *Anacropora puertogalerae* is reported to be uncommon but can form large thickets in the Philippines.

The public comments did not provide any new or supplemental information on *A. puertogalerae'*s abundance. We gathered supplemental information, including Veron (2014), which states that it is sometimes a dominant species where it occurs. Veron (2014) reports that *A. puertogalerae* occupied 4.6 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 2.02 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. puertogalerae,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 38 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. puertogalerae* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. puertogalerae'*s life history. *Anacropora puertogalerae* has been reported to be a simultaneous hermaphrodite and a broadcast spawner. Clonal structure suggests the species also reproduces by fragmentation. Larvae contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *A. puertogalerae'*s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR provided the following species-specific information on *A. puertogalerae'*s threats. In a two month study in Kimbe Bay, PNG, it was observed that *A. puertogalerae* was only preyed on by wrasses in proportion to its availability (Cole *et al.,* 2010). The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. puertogalerae.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. puertogalerae's* vulnerabilities as follows: High vulnerability to ocean

warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, nutrients and predation, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *A. puertogalerae's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Anacropora puertogalerae* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Based on the genus and species-specific information described above, *A. puertogalerae* likely has some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, and predation, and low susceptibility to collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. puertogalerae* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. puertogalerae.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. puertogalerae* occurs in 26 Indo-Pacific ecoregions that encompass 16 countries' EEZs. The 16 countries are Australia, Brunei, China, Fiji, France (French Pacific Island Territories), Indonesia, Japan, Malaysia, Palau, Papua New Guinea, Philippines, Solomon Islands, Taiwan, Timor-Leste, Vanuatu, and Vietnam. The regulatory mechanisms relevant to *A. puertogalerae,* described first as the percentage of the above countries that utilize them, to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (38 percent with 6 percent limited in scope), coral collection (69 percent with 38 percent limited in scope), pollution control (44 percent with 19 percent limited in scope), fishing regulations on reefs (100 percent with 19 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *A. puertogalerae* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 38 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. puertogalerae.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that ''factors that increase the potential extinction risk for *A. puertogalerae* are that the high susceptibility to threats common to members of the genus *Acropora* (bleaching, disease, and predation) are generally considered appropriate to species in the confamilial genus *Anacropora* as well.'' It noted that a factor that reduces potential extinction risk is that *A. puertogalerae* has a somewhat broad range.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. puertogalerae,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many of the coral reef ecoregions in the western and central Pacific Ocean; the Coral Triangle and western equatorial Pacific, plus southern Japan to the GBR. On one hand, this moderates vulnerability to extinction because the high latitude areas in the northern and southern portions of its range are projected to have less than average warming over the foreseeable future, thus populations in these areas will be less exposed to severe warming conditions. On the other hand, the species' geographic distribution exacerbates vulnerability to extinction because much of it lies within the western equatorial Pacific, an area projected to have the highest seawater temperatures in the foreseeable future. Its depth range is from five to at least 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes both coral reef and non-reefal environments, including upper reef slopes, mid-slopes, and lagoons on reefs, and various substrates in non-reefal areas. This is particularly important for moderating vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef and non-reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. puertogalerae* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. puertogalerae* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic

traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. puertogalerae's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Anacropora puertogalerae's* distribution is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming, including high latitude areas in both the northern and southern portions of the species' range. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Anacropora puertogalerae* occurs in very diverse habitats, including both coral reef and non-reefal habitats so the species will experience a variety of environmental conditions at any given time; and

(3) *Anacropora puertogalerae's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future. Therefore, *A. puertogalerae* is not warranted for listing at this time under any of the listing factors.

Anacropora spinosa

Introduction

The SRR and SIR provided the following information on *A. spinosa's* morphology and taxonomy. Morphology was described as compact branches, less than 10 mm in diameter and tapering. They have elongate, crowded, irregular spines that are not strongly tapered, and taxonomy was described as having no taxonomic issues but being similar in appearance to *Anacropora puertogalerae.*

The public comments and information we gathered did not provide information on morphology, and confirmed that there are no known taxonomic problems for *A. spinosa* and that there is a moderate level of species identification uncertainty for this species. Veron (2014) states that *A. spinosa* is easily confused with *Anacropora puertogalerae.* However, the species can be identified by experts (Fenner, 2014b), thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. spinosa's* distribution, habitat, and depth range. *Anacropora spinosa's* distribution is the Coral Triangle and southern Japan. *Its* habitat includes both coral reef and non-reefal environments, including upper reef slopes, mid-slopes, and lagoons on reefs, and various substrates in non-reefal areas. Its depth range is five to 15 meters deep.

The public comments provided the following information that a photograph of *A. spinosa* that appeared in Veron (2000) was erroneously attributed to Guam but was actually taken in Palau. We gathered supplemental information, including Veron (2014), which reports that *A. spinosa* is confirmed in 13 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional six.

Demographic Information

The SRR and SIR provided the following information on *A. spinosa's* abundance. Its abundance is reported to be uncommon, but it may occur in extensive tracts in certain areas.

The public comments did not provide any new or supplemental information on *A. spinosa's* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. spinosa* occupied 1.5 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.84 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was described as ''usually uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. spinosa,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 58 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 22 percent in the study. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. spinosa* occurs in many areas affected by these broad changes, and that it has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. spinosa'*s life history: *Anacropora spinosa* has been reported to be a simultaneous hermaphrodite that broadcast spawns mature gametes. Planula larvae contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. spinosa'*s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Anacropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR provided the following species-specific information on *A. spinosa'*s threats. The only known export of *A. spinosa* was a single specimen from Indonesia in 2005. We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. spinosa'*s vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, nutrients, and predation, and low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *A. spinosa'*s threat susceptibilities, but we gathered species-specific and genus-level supplemental information on this species' threat exposures. *Anacropora spinosa* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. spinosa* to any other threat.

Based on information provided in the genus description above, *A. spinosa* likely has some susceptibilities to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and low susceptibility to collection and trade. The available information does not support more precise ratings of the susceptibilities of *A. spinosa* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. spinosa.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. spinosa* occurs in 13 Indo-Pacific ecoregions that encompass six countries' EEZs. The six countries are Indonesia, Japan, Palau, Papua New Guinea, Philippines, and the Solomon Islands. The regulatory mechanisms relevant to *A. spinosa,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (17 percent with none limited in scope), coral collection (67 percent with 33 percent limited in scope), pollution control (17 percent with 17 percent limited in scope), fishing regulations on reefs (100 percent with none limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *A. spinosa* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat common for the species, but 33 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are much less common regulatory mechanisms for the management of *A. spinosa.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated factors that increase the potential extinction risk for *A. spinosa* are that the high susceptibility to threats common to members of the genus *Acropora* (bleaching, disease, and predation) are generally considered appropriate to species in the confamilial genus *Anacropora* as well.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. spinosa,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is limited to the Coral Triangle and southern Japan. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range is five to 15 meters On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes upper reef slopes, mid-slopes, and lagoons on reefs, and various substrates in non-reefal areas. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef and non-reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. There is not enough information about its abundance to determine if it moderates or exacerbates extinction: It is uncommon and has at least millions of colonies, but the great majority of the population is within an area expected to be severely impacted by threats over the foreseeable future.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. spinosa* was proposed for listing as endangered because of: High vulnerability to ocean warming (ESA

Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. spinosa* from endangered to threatened. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information provided above on *A. spinosa's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Anacropora spinosa* is likely to be susceptible to ocean warming (ESA Factor E), disease (C), ocean acidification (E), trophic effects of fishing (A), nutrients (A, E), and predation (C). In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D); and

(2) *Anacropora spinosa's* distribution is constrained almost entirely within the Coral Triangle, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the western equatorial Pacific that suggest future ocean warming events may be more severe than average in this part of the world. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *A. spinosa's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *A. spinosa's* distribution is constrained almost entirely to the Coral Triangle which increases it extinction risk as described above, its habitat includes shallow reef environments, generally in clear or slightly turbid water and on soft substrates of lower reef slopes, and it has also been found in non-reef environments. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef and non-reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) *Anacropora spinosa's* absolute abundance is at least millions of colonies which allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *A. spinosa.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Genus Astreopora

Genus Introduction

The family Acroporidae includes five genera, *Acropora, Montipora, Astreopora, Isopora,* and *Anacropora. Astreopora* contains 15 species, all occurring in the Indo-Pacific (Veron, 2000; Wallace *et al.,* 2011). Unlike *Acropora* and *Anacropora* species, *Astreopora* colonies are massive, laminar, or encrusting. The SRR and SIR provided no genus-level introductory information on *Astreopora.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Astreopora. Astreopora* species can be susceptible to bleaching, although overall *Astreopora* species are less susceptible to bleaching than other genera within the family Acroporidae, and often survive when they do bleach. Congeners have contracted a fungal disease in Kenya, and *Astreopora myriophthalma* was infected with black-band disease at a polluted site in Jordan. Trade in the genus *Astreopora* has been reported to be light and sporadic.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Astreopora,* but the supplemental information provided the following. In Palau in 1998, *Astreopora* species had moderate levels of bleaching and moderate mortality (Bruno *et al.,* 2001). In Kenya in 1998, three quarters of *Astreopora* species within marine protected areas were affected by mass bleaching. Although many *Astreopora* colonies bleached, none died. Of the 18 genera included in the study, five genera including *Astreopora* had some bleaching but no mortality, and the bleaching index for *Astreopora* was the fifth lowest of the 18 genera (McClanahan *et al.,* 2004; McClanahan *et al.,* 2001). In Thailand in 1998 and 2010, all colonies of *Astreopora myriophthalma* completely bleached, but in both events, all colonies completely recovered (Sutthacheep *et al.,* 2013). In Mauritius in 2004, the *Astreopora* genus had the 23rd highest bleaching rate of the 32 genera recorded, and 12 percent of the highest value (McClanahan *et al.,* 2005a). In eight countries in the western Indian Ocean in 1998–2005, the *Astreopora* genus had the 21st highest bleaching rate of the 45 genera recorded, and 39 percent of the highest value (McClanahan *et al.,* 2007a).

On the GBR, *Astreopora* species had a very low level of Black Band Disease occurrence, just two percent the level of this disease found in *Acropora* species at the same sites (Page and Willis, 2006). Likewise, another study from the GBR reported that *Astreopora* species had low susceptibility to Skeletal Eroding Band, with a prevalence of 0.1 percent. Skeletal Eroding Band is the most prevalent coral disease on the GBR (Page and Willis, 2007). In New Caledonia, *Astreopora* was reported to have a disease prevalence of 0.5 percent, which was the fifth highest prevalence of 12 genera reported (Tribollet *et al.,* 2011). In Indonesia, *Astreopora* had a disease prevalence of 1.5 percent, which was the 2nd highest reported among 35 taxa (Haapkyla *et al.,* 2007).

In a study of sediment rejection in 22 coral species (including one *Astreopora* species), *A. myriophthalma* cleared 98 percent of the sediment within 48 hours, the seventh most efficient of the 22 species at clearing sediment (Stafford-Smith, 1993). *Astreopora* species trade has been reported to be light and sporadic (CITES, 2010). There is no information available on the effects of any other threat for *Astreopora* species.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Astreopora* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. The studies cited above on thermal stress in *Astreopora* report moderate levels of bleaching in response to warming events, but low mortality levels. The studies cited above report variable levels of disease in *Astreopora.* Thus, we conclude that *Astreopora* has some susceptibility to ocean warming and disease. Although there is no genus-level or species-specific information on the susceptibilities of *Astreopora* species to ocean acidification, the SRR rated it as ''medium-high'' importance to corals. Thus, we conclude that an unstudied *Astreopora* species has some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Astreopora* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. The study cited above reports high sediment rejection efficiency in *A. myriophthalma.* This one study is inadequate to rate the susceptibility as low, thus we conclude that *Astreopora* has some susceptibility to sedimentation. Although there is no genus-level or species-specific information on the susceptibilities of *Astreopora* species to nutrients, the SRR rated it as ''low-medium'' importance to corals. Thus, we conclude that an unstudied *Astreopora* species has some susceptibility to nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Astreopora* species is likely to have some susceptibility to sea-level rise. Although there is no genus-level or species-specific information on the susceptibilities of *Astreopora* species to predation, there is no information suggesting they are not susceptible to these threats. Thus, we conclude that an unstudied *Astreopora* species has some susceptibility to predation. The SRR rated ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. Although there is no other genus-level or species-specific information on the susceptibilities of *Astreopora* species to collection and trade, there is no information suggesting they are not susceptible to these threats. Thus we conclude that an unstudied *Astreopora* species is likely to have some susceptibility to collection and trade.

In conclusion, an unstudied *Astreopora* species is likely to have some susceptibility to ocean warming, disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Astreopora cucullata

Introduction

The SRR and SIR provided the following information on *A. cucullata's* morphology and taxonomy. Morphology was described as thick or encrusting platy colonies, with inclined corallites, and taxonomy was described as having no taxonomic issues but being similar to *Astreopora scabra.*

The public comments and information we gathered did not provide information on morphology, and confirmed that there are no known taxonomic problems for *A. cucullata,* but that there is a high level of species identification uncertainty for this species. Veron (Veron, 2014) states that *A. cucullata* is not readily distinguished from other *Astreopora* but Veron (Lamberts, 1980; Lamberts, 1982; Veron, 2000) considers it a valid species, thus we conclude it is sufficiently distinctive to be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. cucullata's* distribution, habitat, and depth range. *Astreopora cucullata's* distribution is a broad distribution, from the Red Sea and central Indo-Pacific to the central Pacific. The SRR and SIR described *A. cucullata's* habitat as protected reef environments, and the depth range as five to 15 m. The public comments provided the following information. One comment stated that *A. cucculata* was recorded from Apra Harbor, Guam, but no sample or photo was provided for confirmation. We gathered supplemental information, including Veron (2014), which reports that *A. cucullata* is confirmed in 31 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 15. *Astreopora cucullata* occurs in most reef environments except reef flats (Lamberts, 1980; Lamberts, 1982; Veron, 2000). It has been reported as ''found only in deep waters at reef edges'' (Lamberts, 1980), and is likely to have a depth range of approximately 3 m to at least 20 m. Fenner (personal comm.) reports it is on outer reef slopes in American Samoa. Thus, based on all the available information, *A. cucullata's* habitat includes most coral reef habitats, including at least upper reef slopes, mid-slope terraces, lower reef slopes, lower reef crests, and lagoons in depths ranging from two to 20 m depth.

Demographic Information

The SRR and SIR provided the following information on *A. cucullata's* abundance. *Astreopora cucullata* is reported as rare. The SIR reported it is common in parts of its range such as in American Samoa (Fenner *et al.,* 2008) and Guam (Lamberts, 1982). *Astreopora cucullata* was found in 10 of 51 sites (Donnelly *et al.,* 2003) and four of 39 sites (Turak and DeVantier, 2003) in Indonesian national park surveys.

The public comments did not provide any new or supplemental information on *A. cucullata's* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. cucullata* occupied 6.8 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.25 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was described as ''rare.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. cucullata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 34 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 13 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. cucullata* occurs in many areas affected by these broad changes, and has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. cucullata's* life history. Reproductive characteristics of *A. cucullata* have not been determined. However, other species in the *Astreopora* genus (*Astreopora gracilis, Astreopora myriophthalma,* and *Astreopora listeri*) are hermaphroditic broadcast spawners. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *A. cucullata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Astreopora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR provided the following species-specific information on *A. cucullata's* threats. A single *A. cucullata* export was reported from Saudi Arabia in 1999. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. cucullata.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A.* cucullata's vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *A. cucullata's* threats, but we gathered species-specific and genus-level supplemental information on this species' threat exposures, susceptibilities, and vulnerabilities. *Astreopora cucullata* has been rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). No other species-specific information is available for the susceptibility of *A. cucullata* to any other threat. Based on the available genus-level and species information summarized above, *A. cucullata* likely has some susceptibilities to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, predation, sea-level rise, and collection and trade. The available information does not support more precise ratings of susceptibilities of *A. cucullata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. cucullata.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *A. cucullata* occurs in 31 Indo-Pacific ecoregions that encompass 30 countries' EEZs. The 30 countries are Australia, Brunei, China, Djibouti, Egypt, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Jordan, Malaysia, Marshall Islands, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Solomon Islands, Sudan, Thailand, Timor-Leste, Tonga, Tuvalu, United States (American Samoa, Guam), Vietnam, and Yemen. The regulatory mechanisms relevant to *A. cucullata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (23 percent with 0 percent limited in scope), coral collection (67 percent with 30 percent limited in scope), pollution control (50 percent with 10 percent limited in scope), fishing regulations on reefs (87 percent with 17 percent limited in scope), and managing areas for protection and conservation (97 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. cucullata* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 30 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. cucullata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *A. cucullata* are its rarity and that it belongs to a family that is highly susceptible to stress. It listed factors that reduce the potential

extinction risk including a widespread distribution and the fact that it appears to be less vulnerable to bleaching than other species in its family.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. cucullata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes the Red Sea, parts of the western Indian Ocean, and most of the ecoregions throughout the western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from two to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slope terraces, lower reef slopes, lower reef crests, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. cucullata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. cucullata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. cucullata's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Astreopora cucullata's* distribution in the Red Sea, central Indo-Pacific, and the central Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) While *A. cucullata's* qualitative abundance is characterized as rare, its absolute abundance at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. cucullata* is not warranted for listing at this time under any of the listing factors.

Genus Isopora

Genus Introduction

The family Acroporidae includes five genera, *Acropora, Montipora, Astreopora, Isopora,* and *Anacropora. Isopora* was formerly considered a sub-genus of *Acropora,* but was recently elevated to genus level (Wallace *et al.,* 2007). The genus contains seven species, all occurring in the Indo-Pacific. *Isopora* have branching or encrusting colonies. The SRR and SIR provided no genus-level introductory information on *Isopora.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Isopora. Isopora cuneata* has intermediate bleaching susceptibility relative to other acroporids but showed severe losses in a 2006 mass bleaching event in the Marshall Islands, with only shaded bases of colonies surviving. *Isopora cuneata* was a common species in the

Acropora palifera zone of the Chagos, but *I. cuneata* was nearly completely eliminated in 1998 and has not yet regenerated. Competition with algae significantly reduces growth rates of *I. cuneata.* At high latitude Lord Howe Island, *I. cuneata* was found to host five types of C zooxanthellae, with an ability to host specialized types in turbid environments. The species is also capable of photo-adapting to low light environments by increasing zooxanthellae density altering photosynthetic mechanisms (dark reaction enzymes or electron transport rates).

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Isopora.* We gathered supplemental information that provided the following material. A large study of the bleaching responses of over 100 coral species on the GBR to the 2002 bleaching event included three *Isopora* species (Done *et al.,* 2003b). At that time, *Isopora* species were still considered *Acropora* species, and they are listed in the report as *Acropora palifera, A. cuneata,* and *A. brueggemanni,* but these three species are now referred to as *Isopora palifera, I. cuneata,* and *I. brueggemanni.* For *I. palifera,* approximately 42 percent of the observed colonies were bleached, resulting in *I. palifera* being more affected than 43 of the 45 *Acropora* species in the study, and one of the 20 most affected species in the study. For *I. cuneata* and *I. brueggemanni,* approximately 20 percent of the observed colonies for both species were bleached, an intermediate bleaching level compared to the 45 *Acropora* species in the study (Done *et al.,* 2003b). In response to a 2008 bleaching event in Papua New Guinea, two Pocilloporidae and 14 Acroporidae species (including *I. brueggemanni*) were monitored: five of the 16 species had severe or high ''relative susceptibility'' to bleaching, (including *I. brueggemanni,* which was rated as high). All 29 *I. brueggemanni* colonies were bleached severely, but none were killed (Bonin, 2012).

In a study of coral disease on the GBR, approximately one percent of colonies of observed *Isopora* were affected by Skeletal Eroding Band, the most prevalent coral disease on the GBR (Page and Willis, 2007). *Isopora* had a disease prevalence of 1% in Indonesia, which was tied for 5th highest among 35 taxa (Haapkyla *et al.,* 2007). *Isopora crateriformis* and *I. palifera* were affected differently by white diseases in American Samoa: an outbreak resulted in low prevalence in *I. crateriformis,* but high prevalence in *I. palifera* (D. Fenner, personal comm.). There is no information available on the effects of any other threat for *Isopora* species.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Isopora* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. The studies described above report moderate to high levels of bleaching in *Isopora* species in response to warming events. With regard to disease, the information above indicates variable levels (from low to high) of disease in *Isopora* species. Thus, we conclude that *Isopora* is likely to be highly susceptible to ocean warming and to have some susceptibility to disease. Although there is no genus-level or species-specific information on the susceptibilities of *Isopora* species to ocean acidification, the SRR rated it as ''medium-high'' importance to corals. Thus, we conclude that an unstudied *Isopora* species has some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Isopora* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. Although there is no genus-level or species-specific information on the susceptibilities of *Isopora* species to sedimentation or nutrients, the SRR rated them as ''low-medium'' importance to corals. Thus, we conclude that an unstudied *Isopora* species has some susceptibility to sedimentation and nutrients.

Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Isopora* species is likely to have some susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. Although there is no genus-level or species-specific information on the susceptibilities of *Isopora* species to collection and trade, there is no information suggesting they are not susceptible to these threats. Thus, we conclude that an unstudied *Isopora* species has some susceptibility to collection and trade.

In conclusion, an unstudied *Isopora* species is likely to be highly susceptible to ocean warming, and to have some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Isopora crateriformis

Introduction

The SRR and SIR provided the following information on *I. crateriformis'* morphology and taxonomy. Morphology was described as solid encrusting plates sometimes over one meter diameter, and taxonomy was described as having no taxonomic issues.

The public comments and information we gathered did not provide any new or supplemental information on morphology, but found that there is a moderate level of taxonomic uncertainty for *I. crateriformis,* and that there is a moderate level of species identification uncertainty for this species. Veron (2014) states that *I. crateriformis* is easily confused with *I. cuneata,* but Veron (2000; 2014), Wallace (1999b) and Wallace *et al.* (2012) continue to consider it a valid species, and it can be identified by experts (Fenner, 2014b). Thus, the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *I. crateriformis'* distribution, habitat, and depth range. *Isopora crateriformis'* distribution is from Sumatra (Indonesia) to American Samoa, and there are reports from the western and central Indian Ocean that need confirmation.

The SRR reported that this species is found most commonly in shallow, high-wave energy environments, from low tide to at least 12 meters deep, and has been reported from mesophotic depths (<50 m depth). The SIR reported that *I. crateriformis* is one of the most common species on upper reef slopes of southwest Tutuila, American Samoa. Rangewide, its predominant habitat is reef flats and lower reef crests, and it also occurs in adjacent habitats such us upper reef slopes.

Public comments did not provide any new or supplemental information on the distribution and habitat of *I. crateriformis. Isopora crateriformis* is reported from American Samoa (Kenyon *et al.,* 2010). Veron (2014) reports that *I. crateriformis* is confirmed in 13 of his 133 Indo-Pacific ecoregions, and is strongly predicted to be found in an additional 17. Wallace (1999b) reports its occurrence in three of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards *et al.* (2009) calculated the geographic range of this species at about 11 million km^2, the 35th smallest range of the 114 species of *Acropora* and *Isopora* that she calculated. Worldwide, reef flats have a larger area than reef slopes (Vecsei, 2004). Most coral abundance surveys are carried out only on reef slopes, and thus may significantly underestimate the abundance of species such as *I. crateriformis* that are more common on reef flats than reef slopes.

Demographic Information

The SRR and SIR reported *I. crateriformis'* abundance as sometimes common and occasionally locally abundant. *Isopora crateriformis* has been reported as common in Indonesia (Veron, 2000) and as one of the most prevalent corals in American Samoa (Birkeland *et al.,* 1987).

Public comments did not provide information on the abundance of *I. crateriformis.* We gathered supplemental information, which includes the following. Richards *et al.* (2013b) conclude from their data that this species is globally widespread, locally restricted, and locally rare, and thus in the second rarest category with the predicted consequence of local extinction. Veron (2014) reports that *I. crateriformis* occupied 0.3 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.4 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare.'' Overall abundance was described as ''occasionally common on reef flats.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *I. crateriformis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 38 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences of species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *I. crateriformis* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *I. crateriformis'* life history. *Isopora crateriformis* is not prone to asexual reproduction via fragmentation, based on its semi-encrusting morphology. Supplemental information we gathered added that, while *I. crateriformis* often has a lower plate edge on colonies on slopes, colonies are very hard and thus unlikely to fragment often (D. Fenner, personal comm.). Public comments did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *I. crateriformis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Isopora* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *I. crateriformis.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *I. crateriformis'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *I. crateriformis'* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Isopora crateriformis* is not rated as moderately or highly susceptible to bleaching or disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Based on information for the genus *Isopora,* an unstudied species such as *I. crateriformis* can be predicted to have high susceptibility to ocean warming. Fenner (personal comm.) reports seeing a ''white disease'' or ''tissue loss'' on *I. crateriformis* that appeared similar to white syndrome during a brief disease outbreak in American Samoa, but prevalence was low. Since only one observation of disease on *I. crateriformis* is reported, it is likely that *I. crateriformis* has some susceptibility to disease. Based on species-specific and genus-level information described above, *I. crateriformis* likely is highly susceptible to ocean warming and likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *I. crateriformis* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *I. crateriformis.* We received criticism of that approach in public comments and in response we present a species-specific analysis of regulatory mechanisms in this final rule. Records confirm that *I. crateriformis* occurs in 13 Indo-Pacific ecoregions that encompass 17 countries' EEZs. The 17 countries are Australia, Brunei, Fiji, France (French Pacific Island Territories), Indonesia, Kiribati, Malaysia, New Zealand (Tokelau), Niue, Papua New Guinea,

Philippines, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, and the United States (American Samoa). The regulatory mechanisms relevant to *I. crateriformis,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (41 percent with none limited in scope), coral collection (82 percent with 35 percent limited in scope), pollution control (53 percent with 12 percent limited in scope), fishing regulations on reefs (100 percent with 24 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *I. crateriformis* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also common for the species, but 35 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are the least common regulatory mechanisms for the management of *I. crateriformis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the risk of extinction were the high susceptibility to threats inferred to be common to members of the family Acroporidae. It listed factors that reduce the risk of extinction including its prevalence in areas of heavy wave action as water motion can reduce bleaching vulnerability.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of I. *crateriformis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic range extends from Sumatra (Indonesia) to American Samoa, and the Philippines to the GBR. On one hand, this moderates vulnerability to extinction because the central Pacific portion of its range is projected to have less than average warming over the foreseeable future, thus population in these areas will be less exposed to severe warming conditions. On the other hand, the species' geographic distribution exacerbates vulnerability to extinction because much of it lies within the western equatorial Pacific, an area projected to have the highest seawater temperatures in the foreseeable future. Its depth range is from zero to 12 meters. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes at least reef flats, lower reef crests, and upper reef slopes. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Shallow areas may experience more frequent changing environmental conditions, extremes, high irradiance, and multiple simultaneous stressors, however, high energy environments experience high levels of mixing which can dilute adverse environmental conditions. Its absolute abundance of at least millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. However, its qualitative abundance is described as rare, which combined with its restricted depth distribution indicates it is likely that a high proportion of individuals will be affected by threats that are typically more severe in shallow habitats at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula, *I. crateriformis* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we confirmed our listing determination for I. *crateriformis* as threatened. Based on the best available information provided above on *I. crateriformis'* spatial structure, demography, threat susceptibilities, and management, it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Isopora crateriformis* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), acidification (E), trophic effects of fishing (A), and nutrients (A, E), and predation (C). In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D);

(2) The majority of *Isopora crateriformis'* distribution is within the Coral Triangle and western equatorial Pacific, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the western equatorial Pacific that suggest future ocean warming events may be more severe than average in this part of the world. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Isopora crateriformis'* qualitative abundance is rare overall. Considering that much of the range of this species

includes areas where severe and increasing impacts are predicted, this level of abundance combined with its restricted depth distribution, leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these biological and environmental characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *I. crateriformis'* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *I. crateriformis'* distribution is mostly in the Coral Triangle and western equatorial Pacific, which increases it extinction risk as described above, its habitat includes at least reef flats, lower reef crests, and upper reef slopes. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections.

(2) While *I. crateriformis'* depth range is primarily restricted to shallow habitats from zero to 12 meters, it has been reported from 50 meters in American Samoa. This moderates vulnerability to extinction over the foreseeable future because there may be depth refugia for *I. crateriformis* in some parts of its range from threats that are typically more severe in shallow habitats.

(3) Even though this species is considered rare, the absolute abundance of *I. crateriformis* is at least millions of colonies. In addition, it is ''occasionally common on reef flats,'' a habitat type that has larger area than reef slopes. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these biological and environmental characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *I. crateriformis.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Isopora cuneata

Introduction

The SRR and SIR provided the following information on *I. cuneata'*s morphology and taxonomy. Morphology was described as sometimes flattened solid encrusting plates like *Isopora crateriformis,* but usually also forms ''Mohawk'' ridges parallel to the main wave motion or short flattened blades. Taxonomy was described as having no taxonomic issues.

Public comments and information we gathered provided the following information on the morphology or taxonomy of *I. cuneata. Isopora cuneata* has moderate taxonomic uncertainty, and moderate species identification uncertainty (Fenner, 2014b). Veron (2014) states that *I. cuneata* is easily confused with *I. palifera* which it closely resembles, but Veron (2000; 2014), Wallace (1999a) and Wallace *et al.* (2012) continue to consider it a valid species, and it can be identified by experts (Fenner, 2014b). Thus, we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *I. cuneata'*s distribution, habitat, and depth range. *Isopora cuneata's* distribution is from the east coast of Africa to the central Pacific. One expert source does not recognize records from east Africa (Riegl, 1995), and the SRR questions whether they should be checked. The SRR reported that *I. cuneata's* habitat is shallow, high wave-energy environments. Its predominant habitat is high energy environments such as lower reef crests and reef flats, but it is also found in upper reef slopes, lagoons, and adjacent habitats. Its depth range is low tide to 15 meters deep.

Public comments provided the following information. One public comment stated that *I. cuneata* is widely distributed in Indonesian waters. We gathered supplemental information, including Veron (2014) which reports that *I. cuneata* is confirmed in 43 of his 133 Indo-Pacific ecoregions, and is strongly predicted to be found in an additional nine. Wallace (1999b) reports it from 11 of her 29 Indo-Pacific areas, many of which are larger than Veron's ecoregions. Richards *et al.* (2009) calculated the geographic range of *I. cuneata* at 27 million km^2, which was the 45th smallest among the 114 *Acropora* species for which ranges were calculated.

Demographic Information

The SRR and SIR reported *I. cuneata'*s abundance as generally common, occasionally locally abundant, and by far the most predominant of acroporids on some areas of the Great Barrier Reef.

Public comments provided the following information. One public comment stated that *I. cuneata* is very abundant in all Indonesian waters. We gathered supplemental information which included the following. Worldwide, reef flats have a larger area than reef slopes (Vecsei, 2004). Most coral abundance surveys are carried out only on reef slopes, and thus may significantly underestimate the abundance of species such as *I. cuneata* that are more common on reef flats and crests than reef slopes. Richards *et al.* (2013b) consider this to be a species that is globally widespread, locally restricted, and locally rare, and thus in the second rarest category with the predicted consequence of local extinction. Veron (2014) reports that *I. cuneata* occupied 5.1 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.76 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon.'' Overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this

species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *I. cuneata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences of species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *I. cuneata* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on I. *cuneata'*s life history. *Isopora cuneata* is a simultaneous hermaphroditic brooder. Larvae lack zooxanthellae, and in some areas the species can undergo several seasonal cycles of larval production. Its brooding life history allows *Isopora* species to locally dominate recruitment at Lord Howe Island, Australia; colonies of this genus also dominate the adult population there, suggesting brooding may drive community structure in remote areas. *Isopora cuneata* is not prone to asexual reproduction via fragmentation, based on its semi-encrusting morphology. The species shows moderate gene flow but little potential for large-scale dispersal. Public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *I. cuneata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Isopora* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *I. cuneata's* threats. *Isopora cuneata* showed intermediate bleaching susceptibility relative to other acroporids on the Great Barrier Reef in 2002, but showed severe losses in a 2006 mass bleaching event in the Marshall Islands, with only shaded bases of colonies surviving. *Isopora cuneata* was a common species in the *Acropora palifera* zone of the Chagos, but *I. cuneata* was nearly completely eliminated in 1998 and has not yet regenerated. Competition with algae significantly reduces growth rates of *I. cuneata.* At high latitude Lord Howe Island, *I. cuneata* was found to host five types of C zooxanthellae, with an ability to host specialized types in turbid environments. The species is also capable of photo-adapting to low light environments by increasing zooxanthellae density altering photosynthetic mechanisms (dark reaction enzymes or electron transport rates). The SRR and SIR did not provide any other species-specific information on the effects of these threats on *I. cuneata.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *I. cuneata* as follows: High vulnerability to ocean warming, moderate vulnerability to disease, acidification, trophic effects of fishing, and nutrients, and low vulnerability to sedimentation, sea-level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *I. cuneata'*s threats susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Isopora cuneata* has been rated as moderately or highly susceptible to bleaching, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Done *et al.* (2003b) reported that 20 percent of *I. cuneata* colonies on the GBR were affected by bleaching in 2002, and the species ranked 21st in proportion of coral colonies that were bleached or partially killed out of 52 studied *Acropora* and *Isopora* species. That is, 20 of the 52 species bleached more than *I. cuneata* and 31 bleached less.

Isopora cuneata has been rated as moderately or highly susceptible to disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Willis *et al.* (2004) report Black Band Disease on *I. cuneata* on No Name Reef in the Great Barrier Reef. No other species-specific information is available for the susceptibility of *I. cuneata* to any other threat. Based on genus-level and species information, *I. cuneata* is predicted to likely be highly susceptible to ocean warming and to have some susceptibility to disease, acidification, trophic effects of fishing, nutrients, sedimentation, sea-level rise, predation, and collection and trade.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *I. cuneata.* We received criticism of that approach in public comments and in response we present a species-specific analysis of regulatory mechanisms in this final rule. Records confirm that *I. cuneata* occurs in 43 Indo-Pacific ecoregions that encompass 23 countries' EEZs. The 23 countries are Australia, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Japan, Madagascar, Mauritius, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Taiwan, Timor-Leste, Tonga, Tuvalu, United States (American Samoa, PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *I. cuneata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (35 percent with four percent limited in scope), coral collection (65 percent with 30 percent limited in scope), pollution control (39 percent with 13 percent limited in scope), fishing regulations on reefs (100 percent with 13 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *I. cuneata* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat common for the species, but 30 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are much less common regulatory mechanisms for the management of *I. cuneata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and

demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase potential extinction risk for *I. cuneata* are high susceptibility to threats inferred to be common to members of the family Acroporidae. A factor that reduces potential extinction risk is its prevalence in areas of heavy wave action, as water motion may reduce bleaching vulnerability.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *I. cuneata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from low tide to at least 15 meters. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes at least lower reef crests, reef flats, upper reef slopes, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. In addition, high energy environments experience high levels of mixing which can dilute adverse environmental conditions. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *I. cuneata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *I. cuneata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *I. cuneata's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Isopora cuneata's* distribution across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitat it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future);

(2) *Isopora cuneata'* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) It is a broadcast spawner and fast grower, enhancing recovery potential from mortality events as described in the Corals and Coral Reefs section above.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *I. cuneata* is not warranted for listing at this time under any of the listing factors.

Genus Montipora

Genus Introduction

The SRR and SIR provided an introduction to Indo-Pacific *Montipora,* covering geological history, taxonomy, life history, and threat susceptibilities of the genus as a whole. *Montipora* colonies are usually laminar, encrusting, massive, or branching, and usually have small protrusions between corallites, called papillae, tuberculae, or verrucae. The genus *Montipora* is the second largest genus of reef corals, with 75 species currently recognized, all in the Indo-Pacific.

Genus Susceptibility to Threats

The SRR and SIR provided the following information on genus-level threat susceptibilities for *Montipora. Montipora* has a high susceptibility to bleaching, just below *Acropora* and *Millepora.* One species of *Montipora* has been tested for susceptibility to acidification, and was predicted to have 10 to 15 percent reductions in growth to pH by 2100. *Montipora* species have moderate susceptibility to diseases. *Montipora* has been characterized as a ''sediment-intolerant'' genus, but individual species range from tolerant to intolerant. Elevated nutrients have not been found to affect *Montipora* fecundity or fertilization. Crown-of-thorns seastar prey preferentially on *Montipora* and crown-of-thorns seastar outbreaks can cause substantial mortality. The genus *Montipora* is heavily used in the international aquarium trade.

The public comments did not provide any supplemental information on genus-level threat susceptibilities for Indo-Pacific *Montipora.* We gathered supplemental information, which provides the following genus-level information on threat susceptibilities of Indo-Pacific *Montipora* for ocean warming (thermal stress), coral disease, ocean acidification, and predation. With regard to thermal stress, almost all *Montipora* on the reef flats of two islands in the Thousand Islands of Indonesia died in the 1983 El Nino mass bleaching. A branching species, *Montipora digitata,* subsequently recovered on one island but not the other (Brown and Suharsono, 1990). In Moorea in 1998, *Montipora* was the third most affected genus by bleaching after *Montastraea* and *Acropora,* and second in mortality, with slightly less mortality than *Acropora* (Gleason, 1993). In Palau in 2000, many but not all *Montipora* species had heavy bleaching. In that event, 48 percent of all coral colonies of all species were bleached, with bleaching of different genera and species ranging from none to very high, and mortality from none to near 100 percent (Bruno *et al.,* 2001). In Kenya in 1998, unprotected and protected sites were compared, and it was found that all *Montipora* species in unprotected sites died during the mass bleaching event while only half of the *Montipora* species in marine protected areas died (McClanahan *et al.,* 2001). In 1998 in Kenya, Tanzania, Mozambique, and Madagascar, 100 percent of *M. tuberculosa* colonies were affected by bleaching at the peak of bleaching, and 13 percent of the colonies died by the end of the bleaching event (Obura, 2001). In Raiatea, French Polynesia, in 2002, 53 percent of *Montipora tuberculosa* colonies and 18 percent *Montipora caliculata* colonies were bleached respectively, the third and fifth most bleached species of the 11 coral species included in the study (Hughes *et al.,* 2003).

On the GBR in 2002, 18 species of *Montipora* ranged from zero to 77 percent affected by bleaching (Done *et al.,* 2003b). During mass bleaching in 1998, *Montipora* had a higher bleaching index in Kenya (64) than in Australia (38), but seawater temperatures were higher in Kenya (McClanahan *et al.,* 2004). At Mauritius in a bleaching event in 2004, *Montipora* had a bleaching index of 27, the 8th highest of the 32 genera recorded, which was 41 percent of the index of the genus with the highest index (McClanahan *et al.,* 2005a). In the western Indian Ocean in 1998–2005, *Montipora* had a bleaching index of 7.9 for eight countries, which was 34th highest of the 45 genera recorded, and 19 percent of the highest value (McClanahan *et al.,* 2007a). On Howland and Baker islands in the U.S. Pacific in early 2010, *Montipora* had a low percentage of bleaching with zero percent bleached on Baker and 4.8 percent on Howland. *Montipora* was the 13th most bleached genus out of 14 genera reported, with 4 percent as much bleaching as the most bleached genus (Vargas-Ángel *et al.,* 2011). In a mass bleaching event in Western Australia, *Acropora* had the highest mortality, with *Montipora* having the second highest mortality (87 percent), while massive and encrusting corals (such as *Porites* and faviids) had much higher survival rates. Colonies less than 10 cm in size were not killed (Depczynski *et al.,* 2012).

In Okinawa, Japan, *Montipora* species experienced moderate drops in populations following the 1998 and 2010 mass bleaching episodes (Hongo and Yamano, 2013). At Laem Set at Samui Island in the western Gulf of Thailand in 1998, half of all colonies of *M. tuberculosa* were partly bleached, and in 2010 all colonies were bleached. It was the 10th most bleached species out of 24 species in 1998, and was tied with seven other species out of 24 for most bleached in 2010. After the 1998 bleaching event, 75 percent of *M. tuberculosa* colonies had partial mortality, and after the 2010 event all colonies were dead. In 1998 it was tied for third place in mortality, and in 2010 it was in a three-way tie for most mortality (Sutthacheep *et al.,* 2013). In Kenya in 1998, 47 percent of *Montipora* colonies bleached, and of those, 73 percent died. Mortality was the fifth highest of any coral genus. The abundance of *Montipora* after 1998 in the western Indian Ocean decreased strongly in proportion to the number of degree heating weeks in 1998 (McClanahan *et al.,* 2007b). In Japan, one species of *Montipora* was a long-term winner following mass bleaching events (increasing from 0.2 percent to 2 percent cover), one species was a short term loser but a long term winner (decreasing from 1.8 percent to zero percent, and then increasing to 3.3 percent later), and one species was a long-term loser (decreasing from 1.6 percent to zero percent cover and staying there) (van Woesik *et al.,* 2011).

With regard to disease, a very low level of Black Band Disease was found on *Montipora* on the Great Barrier Reef, just 3 percent of the level on staghorn *Acropora* (Page and Willis, 2006). *Montipora* had a low susceptibility to Skeletal Eroding Band in the GBR, with a prevalence of 0.4 percent. Skeletal Eroding Band is the most prevalent disease on the GBR (Page and Willis, 2007). *Montipora* was had the second lowest rate of disease in American Samoa of the five genera with the most disease in American Samoa, with 0.08 percent prevalence. The highest rate of disease was *Acropora* with 0.39 percent prevalence. About 14 percent of sites in American Samoa have growth anomalies recorded on *Montipora,* compared to 71 percent for white syndrome on *Acropora,* so disease is relatively low on *Montipora* in American Samoa (Fenner and Heron, 2008). *Montipora* had the fourth highest prevalence of disease of coral genera in American Samoa at 0.06 percent, with the highest being *Acropora* at 0.85 percent (Aeby *et al.,* 2008). In Guam, *Montipora* had the fourth highest prevalence out of 12 genera, with 2 percent of colonies having disease compared to 6.7% for the highest genus (Myers and Raymundo, 2009). In New Caledonia, *Montipora* was tied for lowest disease prevalence among 12

genera, with less than 0.1 percent prevalence (Tribollet *et al.,* 2011). In Indonesia, *Montipora* had the eighth highest prevalence of disease out of 35 taxa, with 0.5 percent prevalence compared to 8 percent for the highest taxon (Haapkyla *et al.,* 2007).

With regards to predation, *Montipora* was the third most preferred prey of crown-of-thorns starfish out of the 10 most common genera on 15 reefs in the Great Barrier Reef, with a preference estimate 81 percent as high as the highest genus (*Acropora)* (De'ath and Moran, 1998). With regards to sedimentation, *M. aequituberculata* was the poorest species of 22 at clearing sediment off itself (Stafford-Smith, 1993).

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Montipora* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. Most studies report that the genus *Montipora* shows high rates of bleaching from ocean warming, almost as much as *Acropora* and *Millepora.* However, there was a range of bleaching responses reported for the genus *Montipora,* and a study of individual species showed a wide range of bleaching responses between species, with some not bleaching at all. While there is variability in the available information on the susceptibility of *Montipora* species to ocean warming, most of the information suggests high susceptibility. Thus, we conclude that an unstudied species of *Montipora* likely is highly susceptible to ocean warming. *Montipora* has been reported to have low to moderate rates of disease, thus we conclude that *Montipora* is likely to have some susceptibility to disease. One species of *Montipora* showed a reduction in growth at the acidification level anticipated for the end of the century, but gamete production was not affected. Thus we conclude that *Montipora* is likely to have some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Montipora* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. *Montipora* has been called a ''sediment-intolerant'' genus but there are variations in tolerance between species. We conclude that *Montipora* has some susceptibility to sedimentation. Elevated nutrients have had no effect on fecundity or fertilization success in *Montipora,* but competition with algae reduced settlement and survival of *Montipora* larvae. We conclude that *Montipora* has some susceptibility to nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Montipora* species is likely to have some susceptibility to sea-level rise. The little available information on predation of *Montipora* suggest that predators prefer to eat *Montipora* over most other genera. Thus, it is possible to predict that an unstudied *Montipora* species is likely to have some susceptibility to predation. The SRR rated ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall, and this threat was addressed at both the genus and species levels in the SRR. Because *Montipora* species are some of the more popular coral species to be collected and traded, an unstudied *Montipora* species is likely to have some susceptibility to collection and trade.

In conclusion, an unstudied *Montipora* species is likely to have high susceptibility to ocean warming, and some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Montipora angulata

Introduction

The SRR and SIR provided the following information on *M. angulata's* morphology and taxonomy. Morphology was described as extensive encrusting bases with short branches that form compact clumps and are pale brown in color. Genetic evidence places *M. angulata* in a clade with some other *Montipora* species, depending on which gene is used. The SRR treated *M. angulata* as a valid species.

The public comments and information we gathered did not provide information on morphology, and confirmed that the species has low uncertainty in morphological taxonomy. Clustering with other species in an initial genetics study gives moderate uncertainty. There is a moderate level of species identification uncertainty for this species, but Veron (2014) states that *M. angulata* is distinctive and Veron (2000; 2014), considers the species valid, and that it is sufficiently distinctive to be identified by experts (Fenner, 2014b). Thus, we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *M. angulata's* distribution, habitat and depth. *Montipora angulata's* distribution is from the northern and eastern Indian Ocean to the central Indo-Pacific to the central Pacific. Its habitat includes upper reef slopes, mid-slopes, lower reef crests, and reef flats, and its depth distribution is one to 20 m.

The public comments did not provide any new or supplemental information on *M. angulata's* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 34 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 26.

Demographic Information

The SRR and SIR provided the following information on *M. angulata's* abundance. *Montipora angulata's* abundance is mostly rare.

The public comments did not provide any new or supplemental information on *M. angulata's* abundance. We gathered supplemental information, which provided the following information. Worldwide, reef flats have a larger area than reef slopes (Vecsei, 2004), and most coral abundance surveys are carried out only on reef slopes, and thus may significantly underestimate the abundance of species such as *M. angulata* that occur primarily on reef flats. Veron (2014) reports that *M. angulata* occupied 0.34 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had

a mean abundance rating of 1.3 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare,'' and overall abundance was also described as ''rare.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (Carpenter *et al.,* 2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *M. angulata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 39 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 16 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *M. angulata* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *M. angulata's* life history. The sexuality and reproductive modes have been determined for 35 other species of *Montipora,* all of which are hermaphroditic broadcast spawners. Also, the larvae of all other *Montipora* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. Thus, these characteristics likely occur in *M. angulata* as well. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *M. angulata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Montipora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR also provided the following species-specific information on *M. angulata's* threats. *Montipora angulata* contains Clade C zooxanthella; this clade varies in its thermal tolerance, but is generally less resistant to bleaching than Clade D. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *M. angulata.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *M. angulata's* vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, nutrients, and predation, and low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *M. angulata's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Montipora angulata* has been rated as moderately or highly susceptible to bleaching, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). In one study, colonies of *M. angulata* contained Clade C zooxanthellae (Good *et al.,* 2005). However, other *Montipora* species are known to contain Clade D zooxanthellae, depending on colony location or depth (LaJeunesse *et al.,* 2004b; Stat *et al.,* 2009). Thus, it is possible that broader sampling of *M. angulata* colonies would show that this species also hosts Clade D zooxanthellae in some habitats. There are no studies of the effects of any other threats on *M. angulata.* Based on species-specific and genus-level information described above, *M. angulata* is likely to be highly susceptible to ocean warming and likely to have some susceptibility to disease, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *M. angulata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *M. angulata.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *M. angulata* occurs in 34 Indo-Pacific ecoregions that encompass 17 countries' EEZs. The 17 countries are Australia (including Cocos-Keeling Islands), Brunei, Cambodia, China, India (Andaman and Nicobar Islands), Indonesia, Japan, Malaysia, Myanmar, Papua New Guinea, Philippines, Solomon Islands, Sri Lanka, Taiwan, Thailand, Timor-Leste, and Vietnam. The regulatory mechanisms relevant to *M. angulata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (29 percent with 6 percent limited in scope), coral collection (41 percent with 18 percent limited in scope), pollution control (35 percent with 12 percent limited in scope), fishing regulations on reefs (100 percent with 18 percent limited in scope), and managing areas for protection and conservation (94 percent with none limited in scope). The most common regulatory mechanisms in place for *M. angulata* are reef fishing regulations and area management for protection and conservation. General coral protection, pollution control, and coral collection laws are much less common regulatory mechanisms for the management of *M. angulata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for this species include its rare abundance combined with presumed generic vulnerability to a range of threats including disease, bleaching, and predation as well as potentially increasing threats from collection and trade. It listed factors that reduce potential extinction risk including its relatively wide geographic distribution.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our

assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. angulata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many coral reef ecoregions in the central Indo-Pacific oceans. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from one to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower temperatures than surface waters due to local and micro-habitat variability in environmental conditions, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes, mid-slopes, lower reef crests, and reef flats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Although its qualitative abundance is described as rare, its absolute abundance is at least millions of colonies, which combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *M. angulata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *M. angulata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including a more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *M. angulata's* spatial structure, demography, threat susceptibilities, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Montipora angulata's* distribution across the central Indo-Pacific is spread over a large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future) and

(2) While *M. angulata's* qualitative abundance is characterized as rare, the species consists of at least millions of colonies that are broadly distributed, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *M. angulata* is not warranted for listing at this time under any of the listing factors.

Montipora australiensis

Introduction

The SRR and SIR provided the following information on *M. australiensis'* morphology and taxonomy. Morphology was described as thick plates and irregular columns that are pale brown, and the taxonomy was described as having no taxonomic issues.

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *M. australiensis.* There is a moderate level of species identification uncertainty for this species, and Veron (2014) states that *M. australiensis* is easily confused with several other *Montipora,* but Veron (2000; 2014) also considers the species valid, and we consider it is sufficiently distinctive to be identified by experts (Fenner, 2014b). Thus, we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *M. australiensis'* distribution, habitat, and depth range. *Montipora australiensis'* distribution is broad longitudinally, including eastern Africa, the central

Indo-Pacific, and the entire central Pacific, its habitat is shallow reef environments with high wave action, and its depth range is given as 2 to 30 meters, which the SRR noted seems at odds with the shallow reef environment habitat description.

The public comments did not provide any new or supplemental information on *M. australiensis'* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 17 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 16. Veron 2014 also provides a more recent geographic range description and map for this species which includes areas in the western Indian Ocean, and most ecoregions between southern Japan and the GBR, and between western Australia and Vanuatu. We did not gather or receive any information on habitat or depth, thus we interpret the available information as follows: Its predominant habitat is upper reef slopes, lower reef crests, and reef flats, and it likely also occurs on mid-slopes and possibly other habitats at depths of two to 30 m.

Demographic Information

The SRR and SIR provided the following information on *M. australiensis'* abundance. *Montipora australiensis* has been reported as rare.

The public comments did not provide any new or supplemental information on *M. australiensis'* abundance. We gathered supplemental information, including Veron (Veron, 2014), which reports that *M. australiensis* occupied 0.40 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.50 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare.'' Overall abundance was described as ''usually rare.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *M. australiensis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *M. australiensis* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *M. australiensis'* life history. Sexuality and reproductive modes have been determined for 35 other species of *Montipora,* all of which are hermaphroditic broadcast spawners. Although specific observations have not been published for this species, the larvae of all other *Montipora* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. It is likely these characteristics occur in this species as well. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *M. australiensis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Montipora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any species-specific information on the effects of these threats on *M. australiensis.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *M. australiensis'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, acidification, trophic effects of reef fishing, nutrients, and predation, and low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *M. australiensis'* threats susceptibilities. We gathered the following species-specific and genus-level information on this species' threat susceptibilities. *Montipora australiensis* has been rated as moderately or highly susceptible to bleaching, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). There are no species-specific studies of the effects of any threats on *M. australiensis.* Based on the genus-level information described above, *M. australiensis* likely is highly susceptible to ocean warming, and likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *M. australiensis* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *M. australiensis.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *M. australiensis* occurs in 17 Indo-Pacific ecoregions that encompass 13 countries' EEZs. The 13 countries are Australia, Cambodia, France (French Pacific Island Territories), Indonesia, Japan, Madagascar, Mauritius, Papua New Guinea, Philippines, Seychelles, Solomon Islands, Thailand, and Vietnam. The regulatory mechanisms relevant to *M. australiensis,* first described as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (31 percent with 8 percent limited in scope), coral collection (46 percent with 8 percent limited in scope), pollution control (38 percent with 23 percent limited in scope), fishing regulations on reefs (100 percent with 8 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *M. australiensis* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 23 percent of pollution control laws are limited in scope and may not provide

substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *M. australiensis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated the factors that increase the potential extinction risk for *M. australiensis* include its rare abundance combined with presumed generic vulnerability to a range of threats including disease, bleaching, and predation. It listed factors that reduce potential extinction risk including its relatively wide geographic distribution.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. australiensis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is mostly limited to parts of the Coral Triangle and the western Indian Ocean. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range of two to at least 30 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes, lower reef crests, reef flats, and mid-slopes. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Additionally, habitats in high wave action have increased water mixing that can reduce irradiance and dilute other adverse environmental conditions. Its absolute abundance of at least millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. However, its qualitative abundance is described as rare, which combined with its restricted depth distribution indicates it is likely that a high proportion of individuals will be affected by threats that are typically more severe in shallow habitats at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula, *M. australiensis* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we confirmed the listing determination for M. *australiensis* as threatened. Based on the best available information provided above on *A. lokani*'s spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Montipora australiensis* is highly susceptible to ocean warming (ESA Factor E), and susceptible to disease (C), ocean acidification (E), trophic effects of fishing (A), and predation (C), and nutrients (A, E). These threats are expected to continue and worsen into the future. In addition, existing regulatory mechanisms for global threats that contribute to extinction risk for the species are inadequate (D);

(2) The majority of *Montipora australiensis'* distribution is within the Coral Triangle which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the western equatorial Pacific that suggest future ocean warming events may be more severe than average in this part of the world. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Montipora australiensis'* qualitative abundance is rare. Considering the limited range of this species in an area where severe and increasing impacts are predicted, this level of abundance leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *M. australiensis'* spatial structure, demography, threat susceptibilities, and management also indicate that the species the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *M. australiensis'* range is mostly constrained to the Coral Triangle which increases it extinction risk as described above, other areas within its range are projected to have less than average warming and acidification, such as the western Indian Ocean. Additionally, its habitat includes upper reef slopes, lower reef crests, and reef flats, and it likely also occurs on mid-slopes. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral

Habitat and Threats Evaluation sections; and

(2) While *M. australiensis'* qualitative abundance is characterized as rare, its absolute abundance is at least millions of colonies. There is no evidence that this species is of such low abundance that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *M. australiensis.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Montipora calcarea

Introduction

The SRR and SIR provided the following information on *M. calcarea's* morphology and taxonomy. The morphology was described as irregular thick plates with columnar upgrowths and are pale brown or blue in color, and taxonomy was described as having no taxonomic issues.

The public comments and information we gathered did not provide information on morphology, and confirmed that there are no known taxonomic problems for *M. calcarea.* There is a moderate level of species identification uncertainty for this species, and Veron (2014) states that *M. calcarea* is easily confused with several other *Montipora,* but Veron (2000; 2014), considers the species valid, and we consider it is sufficiently distinctive to be identified by experts (Fenner, 2014b). Thus, we conclude the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *M. calcarea's* distribution, habitat, and depth range. *Montipora calcarea's* range is fairly wide but somewhat discontinuous, it is known from the Red Sea and east Africa, parts of the Coral Triangle, northwestern Australia, and the central Pacific. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, and reef flats, and its depth range as 0 to 20 m.

The public comments did not provide any new or supplemental information on *M. calcarea's* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 25 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 24. The public comments and information we gathered provided nothing additional on *M. calcarea's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *M. calcarea's* abundance. The abundance of *M. calcarea* has been reported as rare, but may be locally abundant in some areas.

The public comments did not provide any new or supplemental information on *M. calcarea's* abundance, but the supplemental information provided the following. Surveys in Indonesia recorded the species at eight of 51 sites (Donnelly *et al.,* 2003), and nine of 39 sites (Turak and DeVantier, 2003). Veron (2014) reports that *M. calcarea* occupied 5.8 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.35 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare.'' Overall abundance was described as ''usually rare.'' As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (Carpenter *et al.,* 2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *M. calcarea,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 34 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 13 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *M. calcarea* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *M. calcarea's* life history. The reproductive characteristics of *M. calcarea* have not been determined. However, sexuality and reproductive modes have been determined for 35 other species of *Montipora,* all of which are hermaphroditic broadcast spawners. Although specific observations have not been published for this species, the larvae of all other *Montipora* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. It is likely these characteristics occur in this species as well. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *M. calcarea's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Montipora* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *M. calcarea's* threats. *Montipora calcarea* was not susceptible to algal or sediment impacts in anthropogenically impacted waters in Egypt, but one of the studies appears to be a study of the effects of low tide. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *M. calcarea.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *M. calcarea's* vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, nutrients and predation, and

low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *M. calcarea's* threats, but we gathered the following species-specific and genus-level information on this species' threat susceptibilities. *Montipora calcarea* has been rated as moderately or highly susceptible to bleaching but not disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). There are no species-specific studies of the effects of any threats on *M. calcarea.* Based on the genus-level and species information described above, *M. calcarea* likely is highly susceptible to ocean warming, and also likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *M. calcarea* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *M. calcarea.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *M. calcarea* occurs in 25 Indo-Pacific ecoregions that encompass 28 countries' EEZs. The 28 countries are Australia, Brunei, Djibouti, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Madagascar, Malaysia, Mauritius, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Thailand, Timor-Leste, Tonga, Tuvalu, United States (American Samoa), Vietnam, and Yemen. The regulatory mechanisms relevant to *M. calcarea,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (29 percent with 4 percent limited in scope), coral collection (61 percent with 25 percent limited in scope), pollution control (43 percent with 11 percent limited in scope), fishing regulations on reefs (100 percent with 14 percent limited in scope), and managing areas for protection and conservation (93 percent with none limited in scope). The most common regulatory mechanisms in place for the species are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for *M. calcarea,* but 25 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *M. calcarea.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *M. calcarea* include its rare abundance combined with presumed generic vulnerability to a range of threats including disease, bleaching, and predation. It listed factors that reduce potential extinction risk including its relatively wide geographic distribution.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. calcarea,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes the Red Sea and many of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from zero to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, and reef flats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Although its qualitative abundance is described as rare, its absolute abundance is at least tens of millions of colonies, which combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *M. calcarea* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *M. calcarea* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *M. calcarea's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to

become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Montipora calcarea's* distribution across the Red Sea, Indian Ocean and the central Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) While *M. calcarea's* qualitative abundance is characterized as rare, the species consists of at least tens of millions of colonies that are broadly distributed, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *M. calcarea* is not warranted for listing at this time under any of the listing factors.

Montipora caliculata

Introduction

The SRR and SIR provided the following information on *M. caliculata's* morphology and taxonomy. Morphology was described as brown or blue and massive, and corallites are a mixture of immersed and foveolate (in a funnel shape). The taxonomy was described as having no taxonomic issues.

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there is little taxonomic uncertainty for *M. caliculata.* There is a moderate level of species identification uncertainty for this species, and Veron (2014) states that *M. caliculata* is easily confused with several other *Montipora,* but Veron (2000; 2014) also considers the species valid, and we consider it is sufficiently distinctive to be identified by experts (Fenner, 2014b). Thus, the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *M. caliculata's* distribution, habitat, and depth range. *Montipora caliculata* is found in the central Indo-Pacific and the Pacific as far east as the Pitcairn Islands. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, and reef flats, and its depth range extends as deep as 20 m.

The public comments did not provide any new or supplemental information on *M. caliculata's* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 53 of his 133 Indo-Pacific ecoregions, and strongly predicted to occur in an additional 29. The public comments and information we gathered provided nothing additional on *M. caliculata's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *M. caliculata's* abundance. *Montipora caliculata* has been reported as uncommon.

The public comments did not provide any new or supplemental information on *M. caliculata's* abundance. We gathered supplemental information, including surveys in Indonesia and Vietnam that recorded the species at ten of 51 sites (Donnelly *et al.,* 2003), and five of seven sites (Latypov, 2011), respectively. Veron (2014) reports that *M. caliculata* occupied 12.1 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.55 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common.'' Overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (Carpenter *et al.,* 2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *M. caliculata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *M. caliculata* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *M. caliculata's* life history. The sexuality and reproductive modes have been determined for 35 other species of *Montipora,* all of which are hermaphroditic broadcast spawners. Although specific observations have not been published for this species, the larvae of all other *Montipora* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their

photosynthesis. It is likely these characteristics occur in this species as well. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *M. caliculata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Montipora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR also provided the following species-specific information on *M. caliculata's* threats. *Montipora caliculata* is known to contain mycosporine-like amino acids, which can play a role in reducing bleaching exposure. However, *M. caliculata* was the 7th most susceptible to bleaching of the 18 *Montipora* listed on the Great Barrier Reef, but showed only moderate bleaching (~ 20%, or less than half as susceptible as congener *Montipora tuberculosa*) in French Polynesia during the 2002 bleaching event. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *M. caliculata.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *M. caliculata's* vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, nutrients and predation, and low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *M. caliculata's* threats, but we gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Montipora caliculata* has been rated as moderately or highly susceptible to bleaching, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Done *et al.* (2003b) report 50 percent of colonies of *M. caliculata* were affected by bleaching on the GBR in 2002. This was more than 11 out of 17 *Montipora* species and 67 percent as much as the species that bleached the most. No other species-specific information is available for the susceptibility of *M. caliculata* to any other threat. Based on genus-level and species information described above, *M. caliculata* may be highly susceptible to ocean warming, and likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *M. caliculata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *M caliculata.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *M caliculata* occurs in 53 Indo-Pacific ecoregions that encompass 36 countries' EEZs. The 36 countries are Australia, Brunei, Cambodia, China, Djibouti, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Japan, Kiribati, Madagascar, Malaysia, Marshall Islands, Myanmar, Nauru, New Zealand (Cook Islands, Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Solomon Islands, Taiwan, Thailand, Timor-Leste, Tonga, Tuvalu, United Kingdom (Pitcairn Islands), United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms relevant to *M. caliculata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (28 percent with three percent limited in scope), coral collection (58 percent with 31 percent limited in scope), pollution control (36 percent with eight percent limited in scope), fishing regulations on reefs (97 percent with 19 percent limited in scope), and managing areas for protection and conservation (92 percent with six percent limited in scope). The most common regulatory mechanisms in place for *M. caliculata* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat common for the species, but 31 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are much less common regulatory mechanisms for the management of *M. caliculata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *M. caliculata* include its presumed generic vulnerability to a range of threats including disease, bleaching, and predation. It listed factors that reduce potential extinction risk including its relatively wide geographic distribution.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. caliculata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is down to at least 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, and reef flats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with

spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *M. caliculata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *M. caliculata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *M. caliculata's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Montipora caliculata's* distribution from the Red Sea across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution throughout the entire region and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Montipora caliculata's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *M. caliculata* is not warranted for listing at this time under any of the listing factors.

Montipora dilatata/flabellata/turgescens

Introduction

As discussed above in the response to comments, public comments did not provide any new or supplemental information, nor did we find any new or supplemental information, contradicting the key study used by the SRR to lump these nominal species (see SRR for further explanation) into one species as a listable entity under the ESA. The SRR and SIR provided the following information on *M. dilatata/flabellate/turgescens'* morphology and taxonomy. *Montipora dilatata* morphology was described as colonies that are encrusting to submassive, with irregular branch-like upgrowths, and are pale to dark brown in color. *Montipora flabellata* morphology was described as colonies that are encrusting, with irregular lobes, and usually blue in color, but sometimes brown or purple. *Montipora turgescens* morphology was described as colonies that are massive, flat, hemispherical or columnar and are brown, cream, or purple in color.

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that *M. dilatata/flabellata/turgescens* has little taxonomic uncertainty, but a moderate level of species identification uncertainty. One public comment stated that *M. dilatata* and *M. flabellata* were described by Studer, 1901, instead of Dana, 1846 as stated in the SRR. Veron (2014) states that *M. dilatata* and *M. flabellata* are apparently distinctive, and *M. turgescens* is distinctive and Veron (2000; 2014) considers these species valid, so we consider these morphological variations of this single species sufficiently distinctive to be identified by experts (Fenner, 2014b). Thus, we consider the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *M. dilatata/flabellata/turgescens'* distribution, habitat, and depth range. The distribution of this species is the sum of the distributions of the three nominal species. *Montipora dilatata* and *M. flabellata* are in Hawaii and *M. turgescens* ranges from the Red Sea and east Africa to French Polynesia, thus the whole entity ranges from the Red Sea and east Africa to Hawaii and French Polynesia. This species' habitat includes at least upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, reef flats, and lagoons, and extends to 30 m deep.

The public comments provided the following supplemental information. One public comment stated that *M.* turgescens that was reported by Fenner (2005) to be restricted within Hawaii and the Northwestern Hawaiian Islands. We gathered supplemental information which provided the following. *Montipora dilatata* was previously only known from Hawaii, but has recently been reported to occur in the northern and southern Line Islands of Kiribati and the Cook Islands (Veron, 2014). Within Hawaii, *M.* dilatata has only been observed at Kaneohe Bay on Oahu and at Laysan Island in the northwestern Hawaiian Islands. However, the Laysan location has not been confirmed recently and may need further investigation. *Montipora flabellata* was also previously known

only from Hawaii (Veron, 2000), but has recently been reported to occur in the northern Line Islands of Kiribati (Veron, 2014). In contrast, *M. turgescens* is broadly distributed throughout the Indo-Pacific from South Africa and Socotra Island to Hawaii and French Polynesia, and from Japan to the mid-latitudes in Australia (Veron, 2014). Veron (Veron, 2014)) confirms *M. dilatata* in four of his 133 Indo-Pacific ecoregions (northwestern and main Hawaiian Islands and the northern and southern Line Islands), *M. flabellata* from three of the same four ecoregions (all but the southern Line Islands), and *M. turgescens* in 71 (including both Hawaii ecoregions but neither Line Islands ecoregions). Thus, *M. dilatata/flabellata/turgescens* is confirmed in 73 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 30 (Veron, 2014).

Montipora dilatata is reported from subtidal environments (Veron, 2000). In the only location within the main Hawaiian Islands where *M.* dilatata is known, Kaneohe Bay on Oahu, it is limited to shallow water protected from wave action. *Montipora flabellata* is reported from shallow reef environments, and *M. turgescens* is reported from most reef environments (Veron, 2000). *Montipora dilatata* and *M. flabellata* are both reported from 1 to 10 m depth, whereas *M. turgescens* has been reported to 30 m depth (Carpenter *et al.,* 2008). Thus we consider the depth range for this species to be from one to at least 30 meters.

Demographic Information

The SRR and SIR provided the following information on *M. dilatata/flabellata/turgescens'* abundance. *Montipora dilatata* is rare, *M. flabellata* is the 5th most common coral in Hawaii, and *M. turgescens* is described as common.

Public comments provided the following. One comment provided quantitative transect data from Hawaii that included coral cover measures of *M. flabellata.* At Kahului Harbor channel entrance, *M. flabellata* was the most abundant coral. At several other sites, *M. flabellata* was not recorded or was recorded at low levels. Supplemental information provided the following. Veron (2014) reports that *M. dilatata* and *M. turgescens* occupied 0.03 and 16.66 percent respectively of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 3.0 and 1.40 respectively on a 1 to 5 rating scale at those sites in which it was found. The ''mean abundance when present'' rating of 3.0 for *M. dilatata* was the highest of all species in Veron (2014), indicating that it was highly abundant at the few sites where it was observed. Based on this semi-quantitative system, *M. dilatata* and *M. turgescens'* abundances were characterized as ''rare'' and ''common'' respectively, and overall abundances were also described as ''rare'' and ''common'' respectively. *Montipora flabellata* was not encountered in their surveys because they did not survey in Hawaii (Veron, 2014). Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Montipora dilatata and *M. turgescens* are rare in the main Hawaiian Islands, thus they are not recorded in the Hawaii Coral Reef Assessment and Monitoring Program (CRAMP) data-sets. In contrast, CRAMP results indicate that *M. flabellata* has an overall statewide mean cover of 2.2 percent, making it the fifth most abundant coral in the main Hawaiian Islands (CRAMP, 2008a). Jokiel and Brown (2004) reported *M. flabellata* as the sixth most abundant coral in the main Hawaiian Islands, with 0.7 percent cover. A model predicted that *M. flabellata* was sixth in coral cover of all corals in the Main Hawaiian Islands, with about 0.3 percent cover (Franklin *et al.,* 2013). Kenyon and Brainard (2006) reported that *M. flabellata* and *M. turgescens* along with *M. capitata* dominate many backreef locations on the northern three atolls in the Northwestern Hawaiian Islands. Hunter (2011) reported that the number of *M. dilatata* colonies in Kaneohe Bay, Oahu has increased with increasing search effort, and in 2010 a total of 43 confirmed *M. dilatata* colonies were located. This is the only location in the main Hawaiian Islands where *M. dilatata* is known to occur.

There is no overall abundance trend information for *M. dilatata, M. flabellata,* or *M. turgescens,* but *M. flabellata* has been monitored on some time-series transects in Hawaii. Dollar and Grigg (2004) monitored coral cover over 12 and 20 year periods at three sites in Hawaii, each with multiple transects: a semi-enclosed embayment on Maui and two open coastal sites on Kauai and the Big Island. At the Maui site, overall live coral cover declined by approximately 33 percent from 1990 to 2002. *Montipora flabellata* cover increased from 6.9 to 7.1 percent of total live coral cover, and was the fifth most abundant coral. At the Kauai site, overall live coral cover increased by approximately 30 percent from 1983 to 2002. *Montipora flabellata* increased from 7.4 to 14.3 percent of total live coral cover and was the fourth most abundant coral. At the Big Island site, overall live coral cover increased by approximately 50 percent from 1983 to 2002, but *M. flabellata* was not present during the study (Dollar and Grigg, 2004).

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *M. turgescens,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 20 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 9 percent. Estimates for *M. dilatata* and *M. flabellata* were not available. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years. These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *M. turgescens* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited information.

Other Biological Information

The SRR and SIR provided the following information on *M. dilatata/flabellata/turgescens'* life history. *Montipora dilatata/flabellata/turgescens* is a hermaphroditic broadcast spawner. The public comments and information we gathered provided no additional biological information.

Susceptibility to Threats

To describe *M. dilatata/flabellata/turgescens'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Montipora* of ocean warming, disease, ocean acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *M. dilatata/flabellata/turgescens'* threats. *Montipora dilatata* and *M. flabellata* are highly susceptible to

bleaching, with substantial local declines of *M. dilatata* in Kāne'ohe Bay, Hawai'i, from bleaching mortality. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *M. dilatata/flabellata/turgescens.* We interpreted the susceptibility and exposure information from the SRR and SIR in the proposed rule for *M. dilatata/flabellata/turgescens'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, nutrients, and predation, and low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *M. dilatata/flabellata/turgescens'* threats, but we gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Montipora dilatata, M. flabellata,* and *M. turgescens* have each been rated as moderately or highly susceptible to bleaching but not to disease, however, these ratings are not based on species-specific data (Carpenter *et al.* 2008). With regard to thermal stress, in the Northwest Hawaiian Islands, *M. turgescens* bleached much less severely than *Montipora capitata* in 2002 (G. Aeby personal comm.). Kenyon and Brainard (2006) report that in 2004, *M. capitata* and *M. turgescens* had high levels of bleaching in the northern three atolls, with up to 100 percent bleaching in some areas. *Montipora flabellata,* though, had very low levels of bleaching (1.2 to 4.7 percent). Jokiel and Brown (2004) reported that *M. dilatata* and *M. flabellata* had low resistance to bleaching in 1996 in Hawaii. *Montipora dilatata* was the most sensitive species to bleaching in Kaneohe Bay in 1996. It was the first to bleach and few survived the event (Jokiel and Brown, 2004). The majority of the species-specific and genus-level information above suggests that *M. dilatata/flabellata/turgescens* likely is highly susceptible to warming-induced bleaching.

With regard to disease, *M. turgescens* is specifically described with mortality from a rapid tissue-loss (''white'') syndrome in the Northwestern Hawaiian Islands, and this condition affected more than 21 percent of *Montipora* colonies in a 2003 survey (Aeby, 2006). In the main Hawaiian Islands, an outbreak of filamentous bacterial diseases began in 2012 on Kauai, and continued in 2013, heavily affecting the *Montipora* species on these reefs, including *Montipora capitata, M. flabellata,* and *M. patula* (Work, 2013). *This* species appears to be highly susceptible to these diseases when environmental conditions are degraded, especially the larger colonies (Thierry Work, personal comm.).

Based on genus-level and species information described above, *M. dilatata/flabellata/turgescens* likely is highly susceptible to ocean warming, and likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, predation, and collection and trade.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *M. dilatata/flabellata/turgescens.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *M dilatata/flabellata/turgescens* occurs in 73 Indo-Pacific ecoregions that encompass 30 countries' EEZs. The 30 countries are Australia (including Norfolk Island), Brunei, Cambodia, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (including Andaman and Nicobar Islands), Indonesia, Japan, Kiribati, Madagascar, Malaysia, Mauritius, Myanmar, New Zealand (Cook Islands), Palau, Papua New Guinea, Philippines, Seychelles, Solomon Islands, South Africa, Sri Lanka, Taiwan, Thailand, Timor-Leste, United States (Hawaii, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms relevant to *M. dilatata/flabellata/turgescens,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (33 percent with 10 percent limited in scope), coral collection (53 percent with 23 percent limited in scope), pollution control (43 percent with 10 percent limited in scope), fishing regulations on reefs (97 percent with 20 percent limited in scope), and managing areas for protection and conservation (97 percent with none limited in scope). The most common regulatory mechanisms in place for to *M. dilatata/flabellata/turgescens* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 23 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are less common regulatory mechanisms for the management of *M. dilatata/flabellata/turgescens.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *M. dilatata/flabellata/turgescens* include its presumed generic vulnerability to a range of threats including ocean warming, disease, predation, as well as documented declines in Hawai'i of the *M. dilatata* component. Factors that reduce potential extinction risk are the common occurrence and relatively wide geographic distribution of the *M. turgescens* component.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. dilatata/flabellata/turgescens,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes nearly all of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from low tide to at least 30 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than

surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, reef flats, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of tens to hundreds of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *M. dilatata/flabellata/turgescens* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *M. dilatata/flabellata/turgescens* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *M. dilatata/flabellata/turgescens'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Montipora dilatata/flabellata/turgescens'* distribution across the Indian Ocean and most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Montipora dilatata/flabellata/turgescens'* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *M. dilatata/flabellata/turgescens* is not warranted for listing at this time under any of the listing factors.

Montipora lobulata

Introduction

The SRR and SIR provided the following information on *M. lobulata's* morphology and taxonomy. Colonies of *Montipora lobulata* are mottled brown or white and submassive. Colony surfaces consist of irregular mounds. There are no taxonomic issues for *M. lobulata.*

The public comments did not provide any new or supplemental information on *M. lobulata's* morphology and taxonomy. We gathered supplemental information on this species, which indicates a very high level of species identification uncertainty for this species. *Montipora lobulata* is too difficult to identify on reefs, even for experts, for the data collected on it to be reliable. Veron (2014) states that *M. lobulata* has a poorly known distribution and his distribution map is not suitable for analysis. Although Veron (2000; 2014), considers the species valid, we conclude it not sufficiently distinctive to be reliably identified (Fenner, 2014b). Thus, we do not consider the *M. lobulata* distribution and abundance information in the SRR or SIR to be sufficiently reliable and are unable to provide a reliable species description for *M. lobulata* in this final rule.

Listing Determination

In the proposed rule using the determination tool formula approach, *M. lobulata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

Based on the lack of information on *M. lobulata's* distribution, abundance, and threat susceptibilities due to this species' identification uncertainty, we believe there is not sufficient evidence to support a listing determination of threatened or endangered. Therefore, we find that listing is not warranted at this time under any factor.

Montipora patula/verrilli

Introduction

The SRR and SIR provided the following information on *M. patula/verrilli's* morphology and taxonomy. Morphology was described as encrusting or tiered plates that are tan in color, most often with purple polyps.

Due to taxonomic issues from recent genetic and micro-morphological analyses, the BRT chose to evaluate extinction risk of *Montipora patula/verrilli* as a species since they are indistinguishable genetically and micro-morphologically.

The public comments provided the following information on morphology and taxonomy. One public comment stated that there are subtle but consistent differences between the two nominal species, and despite genetic analysis showing strong similarity between the two species, it cannot be conclusive until more of the genome is analyzed. A second public comment stated that since the combining of morphological species into a single entity was only done for two groups of species in Hawaii and for none of the other species around the world, for consistency these species should be considered separately. The commenter stated that these groupings are based on a single scientific publication that suggests, but does not state conclusively, that these species contain the same identical genomes and that combining them makes it so that differences between them in abundance and physiological characteristics cannot be separated. The group as a whole, suggested the commenter, might have one status while species within the group could have another. As discussed above in the response to comments, public comments did not provide any new or supplemental information contradicting the SRR to lump these nominal species (see SRR for further explanation) into one species as a listable entity under the ESA.

Supplemental information we gathered confirms the known taxonomic problems for *M. patula/verrilli,* and reports that there is a moderate level of species identification uncertainty for this species. *Montipora patula* and *M. verrilli* are similar (Veron, 2000; Veron, 2014; Wallace, 1999b), and may be indistinguishable (Fenner, 2005). However, the species *M. patula/verrilli* is distinctive and not difficult to identify by experts (Fenner, 2014b). Veron (2014) states that *M. patula* is very similar to *M. verrilli* and Veron (2000; 2014) considers the species valid. As already stated, we consider *M. patula/verrilli* is sufficiently distinctive to be identified by experts (Fenner, 2014b). Thus, we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *M. patula/verrilli's* distribution, habitat, and depth range. *Montipora patula/verrilli* has a very restricted range, centered on the Main and Northwestern Hawaiian Islands. *Montipora verrilli* has been reported from some other locations. *Montipora patula* has been reported to occupy shallow reef environments and reef flats, and is common in wave-swept environments but less tolerant of sediment-impacted areas. *Montipora patula/verrilli's* habitat includes at least upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, and reef flats. The depth range is described as shallow reef flats down to 10 meters depth, with a report of 40 meters.

The public comments provided the following information. One public comment stated that a species that is highly consistent with Veron's description of *M. verrilli* has been reported from the Marianas. We gathered supplemental information, which stated that *M. patula* was considered endemic to the Hawaiian Islands and Johnston Atoll (Veron, 2000), but is now known to occur throughout the Hawaiian Islands, and also in the Line Islands, Marquesas, and Austral Islands (Veron, 2014). Veron (2014) reports *M. patula* as absent from Johnston Atoll, but this is an error as it is well known to occur there (Maragos and Jokiel, 1986); (Coles *et al.,* 2001); (Brainard *et al.,* 2005; Veron, 2000; Williams and Miller, 2012); (Lobel and K., 2008). Veron (2014) does not report on *M. verrilli.* Like *M. patula, M. verrilli* is reported from the Hawaiian Islands and Johnston Atoll (Veron, 2000), but is also reported from the Mariana Islands and Palau (Randall, 1995; Randall, 2003; Randall and Myers, 1983). Veron (2014) reports that *M. patula* is confirmed in five of his 133 Indo-Pacific ecoregions and strongly predicted in an additional two ecoregions.

Montipora patula is commonly observed deeper than 10 m throughout the Hawaiian Islands (Samuel Kahng, personal comm.), but its deepest depth range is not reported. The public comments and information we gathered provided nothing supplemental on *M. patula/verrilli's* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *M. patula/verrilli's* abundance. *Montipora patula* and *M. verrilli* have been reported as sometimes common. *Montipora patula* is the most abundant of the three Hawaiian endemic (nominal) *Montipora* with overall statewide mean cover of 3.3 percent, making it the fourth most abundant coral in Hawai'i. *Montipora verrilli* is less abundant in Hawai'i. Dollar and Grigg (2004) show substantial declines of *M. patula* on a subset of their transects over 12 years, but other transects within sites show high variability between surveys or similar cover between the beginning and end of the study.

The public comments provided the following information on this species' demography. One public comment stated that data from 79 monitoring sites in Hawaii from 1999 to 2012 suggest that *M. patula* and *M. verrilli* are experiencing different trajectories in growth and abundance. A second public comment stated that the SRR's characterization of *M. patula's* populations as declining disregards public records of numerous long-term monitoring programs that have demonstrated its considerable abundance along the Hawaiian coast and its resistance to extreme conditions. A third public comment provided quantitative coral cover data from a variety of transects taken in Hawaii. *Montipora patula* often had the third, fourth, or fifth highest coral cover of any species. We gathered supplemental information, including Veron (2014), which while he did not conduct abundance surveys in Hawaii, describes the overall abundance of *M. patula* as ''uncommon.'' *Montipora patula* is one of the most common reef-building corals in Hawaii. Jokiel *et al.* (2004) reported that *M. patula* has an overall statewide mean cover of 2.7 percent and the Hawaii Coral Reef Assessment and Monitoring Program (CRAMP) indicates that *M. patula* has an overall statewide mean cover of 3.3 percent (CRAMP, 2008b). Those mean cover percentages make *M. patula* the fourth most abundant coral in the main Hawaiian Islands. Fenner (2005) considered *M. patula* as one of the five most common corals in Hawaii. Grigg (1984) found that *M. patula* was the fifth most common coral in the main Hawaiian Islands. A species distribution model predicted that *M. patula* has the second highest coral cover of all reef-building coral species in the main Hawaiian Islands (Franklin *et al.,* 2013). *Montipora verrilli* has been reported to dominate deep, still water along with another *Montipora* species at Johnston Island (Jokiel and Tyler III, 1992) and *M. patula* is reported to be one of the two most common corals at Johnston Island (NOAA, 2006). In one study, *M. patula* was found at every one of the 11 stations at Johnston Island that were surveyed (Coles *et al.,* 2001). These three studies may refer to the same species.

The species has been monitored on some time-series transects in Hawaii.

Dollar and Grigg (2004) monitored coral cover over 12 and 20 year periods at three sites in Hawaii, each with multiple transects: a semi-enclosed embayment on Maui and two open coastal sites on Kauai and the Big Island. At the Maui site, overall live coral cover declined by approximately 33 percent from 1990 to 2002; *M. patula* cover declined from 13.8 to 8.2 percent of total live coral cover, and was the fourth most abundant coral at this site. At the Kauai site, overall live coral cover increased by approximately 30 percent from 1983 to 2002; *M. patula* increased from 24.9 to 36.0 percent of total live coral cover, and was the second most abundant coral at this site. At the Big Island site, overall live coral cover increased by approximately 50 percent from 1983 to 2002; *M. patula* increased from 0.7 to 3.3 percent of total live coral cover, and was the fourth most abundant coral at this site (Dollar and Grigg, 2004). Friedlander and Brown (2005) monitored coral cover for 12 years at 20 transects in Hanalei Bay, Kauai. Overall live coral cover increased by approximately 30 percent from 1993 to 2004, *M. patula* increased from approximately 50 to 60 percent of total live coral cover, and was the most abundant coral (Friedlander and Brown, 2005). In its public comment letter on the proposed rule, the National Park Service summarized data collected from 1999 to 2012 at 79 sites at different depths from the main Hawaiian Islands (exact locations not identified) showing that *M. patula* increased in live coral cover by approximately 2.3 percent over the 14 year period at all sites combined. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Other Biological Information

The SRR and SIR provided the following information on *M. patula/verrilli's* life history. *Montipora patula* and *M. verrilli* are both documented as hermaphroditic broadcast spawners. Release of packaged egg and sperm bundles has been observed in the months of July through September at Coconut Island, Oahu, during two moon phases: new to first quarter, and full to third quarter. Although specific larval descriptions have not been published for this species, the larvae of all other *Montipora* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments and information we gathered provided no supplemental biological information.

Susceptibility to Threats

To describe *M. patula/verrilli's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Montipora* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *M. patula/verrilli's* threats. *Montipora patula* is among the most bleaching-susceptible corals in the Northwestern Hawaiian Islands and may be moderately susceptible in the main Hawaiian Islands. What ultimately became known as the stress-tolerant zooxanthellae clade D was first documented in shallow-water *M. patula* in Hawai'i, though it also hosts clade C in deeper waters. Both nominal *M. patula* and *M. verrilli* are specifically noted with acute disease conditions (involving tissue loss/partial mortality) with high frequency of occurrence (over 20 percent of surveyed sites where the taxa was observed showed disease signs) and high prevalence (over seven percent in some sites) in the Northwestern Hawaiian Islands (Aeby, 2006). This author points out that the high prevalence sites had suffered severe bleaching in the previous year. *Montipora patula* may be less sediment tolerant than other *Montipora* species (Jokiel *et al.,* 2007), and it did disappear from survey stations in Pelekane Bay, Hawai'i between 1977 and 1996 as the bay became more impacted by sediment. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *M. patula/verrilli.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *M. patula/verrilli's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, and predation, and low vulnerability to sea-level rise, and collection and trade.

Public comments provided some supplemental information on *M. patula/verrilli's* threat susceptibilities. One public comment stated that in nearshore areas exposed to extremes of low salinity and temperature such as the eastern shore of the island of Hawaii where there are many streams and groundwater discharges, *M. patula* is one of the most common corals, sometimes nearly covering the entire reef surface. *Montipora patula* is one of the most common corals in harbors around the state of Hawaii, where it tolerates elevated sediment loading and resuspension.

We gathered the following species-specific and genus-level information on this species' threat susceptibilities. *Montipora patula* has been rated as moderately or highly susceptible to bleaching and coral disease, but *M. verrilli* has not been rated as moderately or highly susceptible to bleaching and coral disease, however, these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Kenyon and Brainard (2006) report that *M. patula* was the most frequently bleached coral in Maro, Laysan, and Lisianski in the Northwestern Hawaiian Islands in 2004. At Pearl and Hermes reef, more than half of the *M. patula* colonies bleached, although more than half of the colonies of several other coral species also bleached. In a bleaching event in 1996, *M. patula* was found to have a moderate sensitivity to bleaching (Jokiel and Brown, 2004). At Kailua, Oahu, *M. patula* was observed to partly bleach every year for four years in April or May and October or September (Hoegh-Guldberg, 1995). *Montipora patula* colonies host multiple zooxanthellae clades, depending on location and depth. In Hawaii, colonies from different sites and depths had two different clades (LaJeunesse *et al.,* 2004a), and at Johnston Atoll, colonies from different sites and depths had four different clades, including the two found in the Hawaii colonies (Stat *et al.,* 2009).

In the main Hawaiian Islands, an outbreak of filamentous bacterial diseases began in 2012 on Kauai, and continued in 2013, heavily affecting the *Montipora* species on these reefs, including *M. capitata, M. flabellata,* and *M. patula* (Work, 2013). These *Montipora* species appear to be highly susceptible to these diseases when environmental conditions are degraded, especially the larger colonies (Thierry Work, personal comm.). It is unknown if these *Montipora* species are highly susceptible to these diseases when environmental conditions are not as degraded as they are on Kauai. With regards to sedimentation, the SRR referred to a study that concluded *M. patula* was more sensitive to sediment than other corals and another study that concluded *M. verrilli* was relatively resistant to sedimentation. No other species-specific information is available for the susceptibility of *M. patula/verrilli* to any other threat.

Based on genus-level and species-specific information described above, *M. patula/verrilli* likely is highly susceptible to ocean warming, likely has some susceptibility to disease, ocean

acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *M. patula/verrilli* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *M. patula/verrilli.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *M. patula/verrilli* occurs in eight Indo-Pacific ecoregions that encompass four countries' EEZs. The four countries are France (French Pacific Island Territories), Kiribati, Palau, and the United States (Guam, CNMI, Hawaii, PRIAs). The regulatory mechanisms relevant to *M. patula/verrilli,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (75 percent with none limited in scope), coral collection (100 percent with 25 percent limited in scope), pollution control (75 percent with 25 percent limited in scope), fishing regulations on reefs (100 percent with 25 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). All five regulatory mechanisms are very common for managing *M. patula/verrilli,* with only coral collection, pollution control, and reef fishing laws somewhat limited in scope.

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *M. patula/verrilli* include its combined very narrow geographic distribution, restriction to shallow habitats, and its generic high susceptibility to a range of threats (bleaching, predation) and documented species-specific impacts from disease. No species characteristics were noted in the SRR that reduced expectations of extinction risk.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *M. patula/verrilli,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes coral reef ecoregions spanning an arc across the Pacific Ocean from the Mariana to Hawaiian to Austral Islands. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the central Pacific, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from low tide to more than 10 meters, possibly as deep as 40 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, and reef flats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its common and stable or increasing abundance in parts of its range, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *M. patula/verrilli* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *M. patula/verrilli* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *M. patula/verrilli*'s spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Montipora patula/verrilli*'s distribution range is widespread, although disjointed and not continuous, from Palau to Hawaii to French Polynesia. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the central Pacific. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Montipora patula/verrilli* is one of the most abundant species in Hawaii, a major part of its range, and time-series studies of various sites around Hawaii since the 1980s seem to show stability in overall abundance trends in *M. patula.* The species' abundance

provides buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response;

(3) The depth range for *M. patula/verrilli* likely extends to 40 m depth, suggesting the possibility of depth refuges from ocean warming and other threats, and indicating a higher absolute area of potential occupancy within the species range;

(4) Many of the areas where *M. patula/verrilli* is found in the Pacific are remote and mostly uninhabited, reducing the likelihood of exposure to local sources of impacts that result from human activities; and

(5) All five major categories of protective regulatory mechanisms addressing local sources of threats are implemented by 75 to 100 percent of the countries within *M. patula/verrilli*'s range, with only three categories somewhat limited in scope.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *M. patula/verrilli* is not warranted for listing at this time under any of the listing factors.

Genus Alveopora

Genus Introduction

The family Poritidae consists of six genera: *Porites, Goniopora, Alveopora, Stylaraea, Poritipora,* and *Calathistes. Alveopora* consists of 14 species, all occurring in the Indo-Pacific (Veron, 2000). Colonies are usually massive, branching, plating, or a combination. The SRR and SIR provided no genus-level introductory information on *Alveopora.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Alveopora.* The genus *Alveopora* is listed as having the highest bleaching response from the 17 included genera in the Indian Ocean. *Alveopora* had high bleaching in Guam in 1994 and South Africa in 2000, but had little bleaching or mortality in Palau in the 2001 event. Low-to-moderate bleaching of *Alveopora allingi* was observed in East Africa during the 1997–1998 event. A few disease reports for the genus *Alveopora* can be found in the Global Disease Database.

The public comments did not provide supplemental information on the threat susceptibilities of the genus *Alveopora.* We gathered supplemental information that provided the following. In Palau in 2000, *Alveopora* species had ''relatively little bleaching and mortality.'' Forty eight percent of all colonies of all species were bleached, and bleaching of different genera and species ranged from none to very high, but no quantitative results were reported for any *Alveopora* species (Bruno *et al.,* 2001). In Kenya in a bleaching event in 1998, all *Alveopora* colonies in the study sites were killed by mass bleaching (McClanahan *et al.,* 2001). In Mauritius in a bleaching event in 2004, *Alveopora* colonies had a bleaching index of 62, the second highest of the 32 genera recorded (McClanahan *et al.,* 2005a). In the western Indian Ocean, relative extinction risk scores for coral genera were calculated based on observed genus-level bleaching between 1998 and 2005. The index of extinction risk was proportional to the degree of bleaching, and inversely proportional to the abundance and number of reefs on which a taxon was found on. The index of extinction risk for *Alveopora* was the ninth highest out of 47 genera, with a score of 0.41 based on a scale of 0 to 1 with 1 being the score of the highest scoring genus (McClanahan *et al.,* 2007a). In Indonesia, colonies of *Goniopora* and *Alveopora* had a combined disease prevalence of about 0.3 percent, which was considered low (Haapkyla *et al.,* 2007).

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Alveopora* species to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. The studies reporting bleaching in the genus *Alveopora* reported a wide range of results, from high levels of bleaching to low levels of bleaching. There are a few reports of disease in *Alveopora* in the Global Disease database, and *Goniopora* and *Alveopora* had low combined disease prevalence in Indonesia. Thus, we conclude that *Alveopora* is likely to have some susceptibility to ocean warming and disease. Although there is no other genus-level or species-specific information on the susceptibilities of *Alveopora* species to ocean acidification, the SRR rated it as ''medium-high'' importance to corals. Thus, we conclude that an unstudied *Alveopora* species is likely to have some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Alveopora* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. Although there is no other genus-level or species-specific information on the susceptibilities of *Alveopora* species to sedimentation and nutrients, the SRR rated them as ''low-medium'' importance to corals. Thus we conclude that an unstudied *Alveopora* species is likely to have some susceptibility to sedimentation and nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Alveopora* species is likely to have some

susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. Although there is no other genus-level or species-specific information on the susceptibilities of *Alveopora* species to collection and trade, there is no information suggesting they are not susceptible to these threats. Thus we conclude that an unstudied *Alveopora* species is likely to have some susceptibility to collection and trade.

In conclusion, an unstudied *Alveopora* species is likely to have some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Alveopora allingi

Introduction

The SRR and SIR provided the following information on *A. allingi'*s morphology and taxonomy. Its morphology was described as colonies being encrusting or having short irregular lobes with rounded surfaces or being columnar. Its taxonomy was described as having no taxonomic issues, but being similar to *Alveopora catalai* and

Alveopora marionensis.

Public comments and information we gathered did not provide supplemental information on morphology, and confirmed that there are no known taxonomic problems for *A. allingi,* and a low level of species identification uncertainty. Veron (2014) states that *A. allingi* is distinctive and Veron (2000; 2014) considers the species valid, thus we consider it can be identified by experts and conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. allingi'*s distribution, habitat, and depth range. *Alveopora allingi* has a very broad distribution from the Red Sea and Indian Ocean to most of the Pacific Ocean. The SRR reported that *A. allingi'*s habitat is protected reef environments and its depth range is five to 10 m deep. Protected reef environments includes a large diversity of habitats, including lagoons, back-reef pools, leeward reefs, and others.

Public comments provided supplemental information on the distribution and habitat of *A. allingi.* A public comment pointed out that in the Marianas, this species is restricted to depths greater than 60 meters. The four type specimens of *A. allingi* were dredged from Pago Pago harbor, all from a depth of 100 feet or more (Hoffmeister, 1925). We also gathered supplemental information, including Veron (2014), which reports that *A. allingi* is confirmed in 53 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 27. Thus, based on all the available information, *A. allingi'*s habitat includes lagoons, upper reef slopes, mid-slope terraces, lower reef slopes, and mesophotic areas in depths ranging from five to greater than 60 m.

Demographic Information

The SRR and SIR reported *A. allingi'*s abundance as usually uncommon.

Public comments did not provide supplemental information on the abundance of *A. allingi.* We gathered supplemental information, including Veron (2014), which reports that *A. allingi* occupied 1.2 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.27 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was described as ''usually uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. allingi,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. allingi* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. allingi'*s life history. On high latitude reefs (28 to 29 degrees South) in the Houtman Abrolhos Islands, western Australia, two colonies of *A. allingi* were sampled before the main mass spawning nights in late March 1987. There was no indication of developed gametes, suggesting that this species does not participate in the mass spawning. Public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. allingi'*s threat susceptibilities, The SRR and SIR provided genus-level information for the effects on *Alveopora* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *A. allingi'*s threats. Low-to-moderate bleaching of *Alveopora allingi* was observed in East Africa during the 1997–1998 event. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. allingi.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. allingi'*s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide supplemental information on *A. allingi's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Alveopora allingi* has been rated as moderately or highly susceptible to bleaching but not to disease, but this rating is not based on species-specific data (2008). Based on the genus-level and species information described

above, *A. allingi* is likely to have some susceptibility to warming-induced bleaching, disease, acidification, trophic effects of fishing, sedimentation, nutrients, seal-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibility of *A. allingi* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. allingi.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *A. allingi* occurs in 53 Indo-Pacific ecoregions that encompass 40 countries' EEZs. The 40 countries are Australia, Cambodia, China, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Japan, Jordan, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Mozambique, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, South Africa, Sri Lanka, Sudan, Taiwan, Tanzania, Timor-Leste, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory), United States (CNMI, Guam, American Samoa, PRIAs), Vietnam, and Yemen. The regulatory mechanisms relevant to *A. allingi,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentage of those countries whose regulatory mechanisms may be limited in scope are as follows: General coral protection (28 percent with five percent limited in scope), coral collection (60 percent with 25 percent limited in scope), pollution control (45 percent with eight percent limited in scope), fishing regulations on reefs (88 percent with 20 percent limited in scope), and managing areas for protection and conservation (95 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. allingi* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 25 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. allingi.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR states that the high bleaching rate is the primary known threat of extinction for *A. allingi.* It listed factors that reduce potential extinction risk including that *A. allingi* occupies a variety of habitat types and is broadly distributed both latitudinally and longitudinally in the Indo-Pacific.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. allingi,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean and the central Pacific, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from five to 60 meters. Its depth range moderates vulnerability to extinction over the foreseeable future because of lower irradiance in the deeper portion of its range, sharply reducing warming-induced bleaching. In addition, other threats usually occur at lower levels at mesophotic depths, such as sedimentation resulting from land-based sources of pollution. However, *A. allingi* colonies in mesophotic habitat may be affected by increasing acidification over the foreseeable future, but the species also occurs in shallow depths less affected by acidification. Its habitat includes lagoons, upper reef slopes, mid-slope terraces, lower reef slopes, and mesophotic areas, moderating vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. allingi* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. allingi* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. allingi's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Alveopora allingi's* distribution across the Red Sea, Indian Ocean and most of the Pacific Ocean is spread over a vast area. While some areas within its range are projected to be affected by

warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean and the central Pacific. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Alveopora allingi's* depth range down to 60 m and below includes depths that provide a refuge from ocean warming, and increase the absolute area of potential occupancy throughout the range of the species; and

(3) *Alveopora allingi's* total population size is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. allingi* is not warranted for listing at this time under any of the listing factors.

Alveopora fenestrata

Introduction

The SRR and SIR provided the following information on *A. fenestrata's* morphology and taxonomy. Morphology was described as generally hemispherical with the surface divided into lobes, and the taxonomy was described as having no taxonomic issues, but it is similar to *Alveopora marionensis* and *Alveopora verrilliana.*

Public comments and information we gathered did not provide any new or supplemental information on morphology and confirmed that there are no known taxonomic problems for *A. fenestrata,* but that there is a moderate to high level of species identification uncertainty for this species. Veron (2014) states that *A. fenestrata* is easily confused with other *Alveopora* with similar growth form, but Veron (2000; 2014) considers the species valid, and we consider it can be identified by experts, thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. fenestrata's* distribution, habitat, and depth range. *Alveopora fenestrata* has a relatively broad distribution from the Red Sea and Indian Ocean to the central Pacific. Its habitat includes most coral reef environments, such as upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, reef flats, and lagoons, and its depth range is from three to 30 m.

Public comments provided the following information. *Alveopora fenestrata* occurs in Guam, but is not confirmed in the Northern Marianas. We gathered supplemental information, including Veron (2014) which reports that *A. fenestrata* is confirmed in 39 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 19.

Demographic Information

The SRR and SIR reported that *A. fenestrata's* abundance is uncommon.

Public comments provided the following information. *Alveopora fenestrata* is rare on Guam. We gathered supplemental information including Veron (2014) which reports that *A. fenestrata* occupied 1.98 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.29 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. fenestrata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. fenestrata* occurs in many areas affected by these broad changes, and likely has some susceptibility to both local and global threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR did not provide supplemental species-specific biological information for *A. fenestrata.* Public comments provided no new or supplemental biological information.

Susceptibility to Threats

To describe *A. fenestrata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Alveopora* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. fenestrata.* We interpreted threat

susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. fenestrata*'s vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide supplemental information on *A. fenestrata*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' susceptibilities. *Alveopora fenestrata* has been rated as moderately or highly susceptible to bleaching but not to disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Darling *et al.* (2012) performed a biological trait-based analysis to categorize the relative tolerance of coral species to environmental stress and *A. fenestrata* was classified as a ''stress-tolerant'' species. There is no other species-specific information for the susceptibility of *A. fenestrata* to any threat. Based on the genus-level and species information described above, *A. fenestrata* is likely to have some susceptibility to warming-induced bleaching disease, acidification, trophic effects of fishing, sedimentation, nutrients, seal-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibility of *A. fenestrata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. fenestrata.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *A. fenestrata* occurs in 39 Indo-Pacific ecoregions that encompass 27 countries' EEZs. The 27 countries are Australia, Brunei, China, Egypt, Federated States of Micronesia, France (French Pacific Island Territories), Indonesia, Israel, Jordan, Kenya, Madagascar, Malaysia, Marshall Islands, Mauritius, Papua New Guinea, Philippines, Saudi Arabia, Seychelles, Solomon Islands, Sri Lanka, Sudan, Taiwan, Tanzania, Timor-Leste, United States (CNMI, Guam, PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *A. fenestrata,* first described as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (33 percent with 11 percent limited in scope), coral collection (56 percent with 22 percent limited in scope), pollution control (48 percent with 11 percent limited in scope), fishing regulations on reefs (85 percent with 22 percent limited in scope), and managing areas for protection and conservation (100 percent with 11 percent limited in scope). The most common regulatory mechanisms in place for *A. fenestrata* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 40 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less prominent regulatory mechanisms for the management of *A. fenestrata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that a high bleaching rate is the primary known threat of extinction for *A. fenestrata.* It listed factors that reduce potential extinction risk including occupying a range of depths and being broadly distributed both latitudinally and longitudinally in the Indo-Pacific.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. fenestrata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from three to 30 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, reef flats, and lagoons, moderating vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. fenestrata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. fenestrata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best

available information above on *A. fenestrata'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Alveopora fenestrata'*s distribution across approximately three quarters of the Indo-Pacific region is spread over a vast area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean and the central Pacific. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Alveopora fenestrata'*s depth range down to 30 m and below includes depths that provide a refuge from ocean warming, and increase the absolute area of potential occupancy throughout the range of the species; and

(3) *Alveopora fenestrata'*s total population size is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. fenestrata* is not warranted for listing at this time under any of the listing factors.

Alveopora verrilliana

Introduction

The SRR and SIR provided the following information on *A. verrilliana'*s morphology and taxonomy. Morphology was described as short irregularly dividing knob-like branches and the taxonomy was described as having no taxonomic issues. *Alveopora verrilliana* is similar to *Alveopora fenestrata.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *A. verrilliana,* but that there is a high level of species identification uncertainty for this species. Veron (2014) states that *A. verrilliana* is easily confused with other *Alveopora* with a similar growth form and it is impossible to confirm many citations of this species. However, Veron (2000; 2014) considers the species valid, and we consider it can be identified by experts, thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. verrilliana'*s distribution, habitat, and depth range. *Alveopora verrilliana's* distribution is from the Red Sea to the central Indo-Pacific to most of the Pacific. Its habitat includes most coral reef environments, such as upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, reef flats, and lagoons, and its depth range is three to at least 40 meters depth, and possibly down to 80 meters (it is not certain that the identity of the coral at 80 meters has been verified).

Public comments provided the following supplemental information on *A. verrilliana'*s distribution, habitat and depth range. One public comment stated that *A. verrilliana* has been found in the Marianas on shallow fringing reef platforms at a depth between 1.5 and 2 meters deep, and a terrace at 17 meters deep. We gathered supplemental information, including Veron (2014), which reports that *A. verrilliana* is confirmed in 28 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 30. One of the 30 strongly predicted ecoregions is the Main Hawaiian Islands (Veron, 2014), and may be based on reports that Hawaii is a similar type ecoregion. However, there are no reliable reports of the species being found in the Main Hawaiian Islands, in spite of many divers in the water observing coral species (Douglas Fenner, personal com.). Veron (2014)'s map indicates that the report(s) of this species from the Red Sea have also not been verified.

Demographic Information

The SRR and SIR reported *A. verrilliana'*s abundance as ''uncommon.'' Public comments provided the following supplemental information on *A. verrilliana'*s abundance. One public comment stated that *A. verrilliana* is uncommon in the Marianas with only 10 to12 colonies recorded so far. We gathered the following supplemental information on the abundance of *A. verrilliana.* Veron (2014) reports that *A. verrilliana* occupied 0.27 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.13 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare,'' and overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. verrilliana,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 34 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years

(Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. verrilliana* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. verrilliana's* life history. *Alveopora verrilliana* is a hermaphroditic broadcast spawner. On temperate latitude reefs (28 to 29 degrees S) in the Houtman Abrolhos Islands, western Australia, seven of 12 colonies sampled had ripe gametes, and spawning was inferred during the time of mass spawning for this region. Public comments and information we gathered did not provide anything additional to the above-described biological information.

Susceptibility to Threats

To describe *A. verrilliana's* threat susceptibilities, The SRR and SIR provided genus-level information for the effects on *Alveopora* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. verrilliana.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. verrilliana's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *A. verrilliana's* threats. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Alveopora verrilliana* has been rated as moderately or highly susceptible to bleaching but not to disease, but this rating is not based on species-specific data (2008). There is no species-specific information for the exposure or susceptibility of *A. verrilliana* to any threat. Based on the genus-level and species information described above, *A. verrilliana* likely has some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, seal-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibility of *A. verrilliana* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. verrilliana.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *A. verrilliana* occurs in 28 Indo-Pacific ecoregions that encompass 23 countries' EEZs. The 23 countries are Australia, Brunei, Cambodia, China, Federated States of Micronesia, France (French Pacific Island Territories), Indonesia, Japan, Malaysia, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Taiwan, Thailand, Tonga, Tuvalu, United States (CNMI, Guam, American Samoa), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *A. verrilliana,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (30 percent with 4 percent limited in scope), coral collection (61 percent with 35 percent limited in scope), pollution control (39 percent with 13 percent limited in scope), fishing regulations on reefs (100 percent with 17 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *A. verrilliana* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat common for the species, but 35 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are much less common regulatory mechanisms for the management of *A. verrilliana.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR states that the high bleaching rate is the primary known threat of extinction for *A. verrilliana.* It listed factors that reduce potential extinction risk including that *A. verrilliana* occupies a variety of habitat types and is broadly distributed both latitudinally and longitudinally in the Indo-Pacific.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. verrilliana,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many of the coral reef ecoregions in the western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the central Pacific, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from three to 40 meters, which moderates vulnerability to extinction over the foreseeable future because of lower irradiance in the deeper portion of its range, sharply reducing warming-induced bleaching. In addition, other threats usually occur at lower levels at mesophotic depths, such as sedimentation resulting from land-based sources of pollution. However, *A. verrilliana* colonies in mesophotic habitat may be affected by increasing acidification over the foreseeable future, but the species also occurs in shallow depths less affected by acidification. Its habitat includes most coral reef environments, such as upper reef slopes, mid-slopes, lower reef slopes, lower reef crests, reef flats, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on

local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its total abundance is unknown, and it is uncommon or rare. Its absolute abundance of at least millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule, using the determination tool formula approach, *A. verrilliana* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and wide depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. verrilliana* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. verrilliana's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Alveopora verrilliana's* distribution across more than half of the Indo-Pacific region is spread over a vast area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the central Pacific. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Alveopora verrilliana's* depth distribution down to 40 meters includes depths that provide a refuge from ocean warming, and increase the absolute area of potential occupancy throughout the range of the species; and

(3) *Alveopora verrilliana's* total population size is at least millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. verrilliana* is not warranted for listing at this time under any of the listing factors.

Genus Porites

Genus Introduction

Porites colonies are flat (laminar or encrusting), massive, or branching. Massive colonies are spherical or hemispherical when small, and helmet or dome-shaped when large, and may be over five meters across (Veron, 2000). *Porites* is the third largest genus of reef building scleractinia, and Veron (2000) recognizes 52 species. This description of the *Porites* genus focuses on the Indo-Pacific, where most of the species occur. The larvae of all *Porites* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The SRR and SIR provided no genus-level introductory information on *Porites.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Porites.* On the GBR and in the western Indian Ocean, massive *Porites* generally have moderate susceptibility to bleaching, while branching *Porites* generally have higher susceptibility to bleaching, comparable to *Pocillopora* and *Acropora.* For example, *Porites horizontalata* was a bleaching ''loser'' in Okinawa, disappearing after the 1998 event. Recent work comparing *P. lobata* from extreme lagoonal environments with individuals from more benign forereef habitats in American Samoa indicates that thermal history of these corals plays a large part in their reaction to thermal stress.

The SRR reported that a study that looked at 328 colonies of massive *Porites* from 69 reefs of the GBR found a decline in calcification of 14.2 percent since 1990, predominantly because extension declined by 13.3 percent. This is similar to the estimates of a global decline in aragonite saturation state of 16 percent since the beginning of global industrialization. The study agreed with earlier, more limited work on *Porites* on the GBR and in laboratory and mesocosm experiments that showed declines in calcification with reduced aragonite saturation state in *P. cylindrical, P. compressa,* and *P. lutea* adults, and *P. astreoides* juveniles. Acidification has not been found to interfere with settlement of larvae in *P. astreoides* in the Caribbean.

The SRR reported several studies showing subacute (lesions resulting in slow progressive tissue loss) tissue loss, black band disease, and endolithic hypermycosis in *Porites.* The SIR reported that the genus *Porites* had the highest prevalence of disease throughout Guam; however, it may have also been a function of the fact that *Porites* corals are also the most common. Likewise, in a study from Hawaii, with 12 diseases recorded among three coral genera, *Porites* was shown to have the highest prevalence of disease. *Porites* was also shown to have severe damage as a result of high disease prevalence of black-band disease in Southeastern India.

The SRR reported that *Porites* is susceptible to crown-of-thorns seastar (*Acanthaster planci*) and corallivorous

snail predation, including predation of *Coralliphilia violacea* on both massive and branching forms. Massive *Porites* are susceptible, but not a preferred prey, of the predatory asteroid *Culcita novaeguineae,* and the butterflyfish *Chaetodon unimaculatus. Porites* is intermediate for its sediment tolerance in the western Indian Ocean. In contrast, *Porites* is often found in relatively turbid waters in Asia and the eastern Pacific and were considered sediment tolerant. About 25,000–50,000 pieces of *Porites* spp. per year are traded.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Porites.* We gathered supplemental information that provided the following. Thermal stress was studied by Gleason (1993), who reported that *Porites* was little affected by bleaching in Moorea, French Polynesia. Bruno *et al.* (2001) reported that in Palau in 2000, four different species of *Porites* ranged from low-moderate levels of bleaching to very high-moderate, and ranged from low-moderate mortality to high mortality. Done *et al.* (2003b) reported bleaching levels in seven species of *Porites* and one morphological group (massive) of *Porites.* Individual species ranged from eight to 33 percent affected by bleaching. The two least affected species (*P. cylindrica* and *P. annae*) were branching and the most affected was massive (*P. vaughani*), though it had a low mortality. Generally, massive *Porites* were affected more than average. The species with the greatest mortality was a species with columns and plates (*P. rus*) though another species (*P. lichen*) with columns and plates had a mortality rate nearly as low as the lowest mortality species, and another species with columns (*P. heronensis*) had high bleaching (Done *et al.,* 2003b).

Pandolfi *et al.* (2011) reported that massive species of *Porites* bleached about average for genera in Kenya and Australia in 1998. A study that monitored the impacts of the 1998 and 2010 bleaching events on coral in Japan (van Woesik *et al.,* 2011) reported that one species of branching *Porites* was neither a winner or a loser (increasing from 1.4 percent cover to four percent and then decreasing to 0.9 percent), and six species of branching *Porites* were long-term losers (decreasing to 0 percent cover and staying there). Vargas-Angel *et al.* (2011) reported that *Porites* had a fairly low percentage of bleaching on Howland and Baker islands in the U.S. Pacific, with 16.1 percent on Baker and 24.6 percent on Howland. *Porites* was the ninth most-bleached genus out of 14 genera, and had 32 percent as much bleaching as the most bleached genus (Vargas-Angel *et al.,* 2011). *Porites* in Okinawa, Japan, experienced no decrease in populations following the 1998 and 2010 mass bleaching episodes. Okinawa has turbid waters from runoff increased by human activities (Hongo and Yamano, 2013).

In areas of Papua New Guinea, where volcanic carbon dioxide bubbling produced pH equal to that predicted for 2100, massive *Porites* dominated the community, indicating they are more resistant to low pH than other corals (Fabricius *et al.,* 2011). Massive *Porites* growth rates in bays in Palau, with pH approaching that predicted for 2100 and aragonite saturation equal to that predicted for 2100, was similar to colonies in water with current mean pH and aragonite saturation (Shamberger *et al.,* in press).

Raymundo *et al.* (2005) reported that *Porites* had the highest levels of disease in the Philippines, where only rarely did other genera show disease. Individual species of *Porites* differed greatly in the prevalence of disease, with zero prevalence in about half of the species, and a wide range of prevalence in the others. Further, there was no consistent difference between massive and branching species: branching species displayed the entire range of prevalence; massive *Porites* having relatively high prevalence, though not as high as three branching species; and one massive *Porites* (*P. evermanni*) having zero prevalence (Raymundo *et al.,* 2005). *Porites* had the lowest prevalence of disease (0.025 percent) of the only five genera with diseases recorded in American Samoa. *Porites* tissue loss was found at 15 percent of sites compared to 71 percent of sites for *Acropora* white syndrome, the most common disease(Fenner and Heron, 2008). In another study in American Samoa, *Porites* had the third highest level of prevalence of any genus, with a prevalence of 0.11 percent (Aeby *et al.,* 2008). Growth anomalies are occasional on massive *Porites* in backreef pools on Ofu, American Samoa but less common on reef slopes in American Samoa. Growth anomalies are abundant on one color morph of *Porites cylindrica* in one small area of one back reef pool in Tutuila, American Samoa, but not on another color morph. A white disease that is rare on Tutuila, killed all *Porites rus* colonies (about 50) in front of Vaoto Lodge, Ofu, American Samoa. What appears to possibly be the same disease is killing all yellow massive *Porites* in the Hurricane House back reef pool on Ofu, American Samoa (Fenner, 2013b). In Guam, *Porites* had by far the highest prevalence, with 6.7 percent of colonies having disease (Myers and Raymundo, 2009). *Porites* was tied for the second highest disease prevalence of 12 genera in New Caledonia, with 0.7 percent of colonies showing disease (Tribollet *et al.,* 2011). *Porites* massive was tied for third highest disease prevalence of 35 taxa in Indonesia, with 1.5 percent prevalence. *Porites* branching had the 14th highest disease prevalence of 35 taxa in Indonesia, with 0.25 percent of colonies showing disease. Other *Porites* had no disease in Indonesia (Haapkyla *et al.,* 2007).

Predation was studied by De'ath and Moran (1998), who reported that *Porites* was the least preferred prey of crown-of-thorns starfish out of the 10 most common genera on 15 reefs in the GBR. *Porites* species are relatively less susceptible to the effects of land-based sources of pollution than many other reef-building corals. *Porites* species are heavily collected and widely traded internationally. There is no information on the effects of fishing, sea-level rise, or any other threat to *Porites* species.

Genus Conclusions

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Porites* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. Most studies reported moderate to high levels of bleaching in *Porites,* but one study reported low levels and some individual species had low levels. In three studies, branching species showed higher levels of bleaching than massive species, and one study showed the reverse. Generally, *Porites* as a whole has moderate to high susceptibility to ocean warming. However, different species of *Porites* have a wide range of susceptibilities to ocean warming, thus we conclude that an unstudied *Porites* species has some susceptibility to ocean warming. Most studies found high levels of disease in *Porites,* but one study found low levels. We conclude that an unstudied *Porites* species has some susceptibility to disease. Several studies reported that calcification declined with decreasing pH in short term experiments, but massive *Porites* are common and have normal growth rates in natural areas of low pH. We

conclude that *Porites* has some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Porites* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. Porites is reported to have intermediate to high sediment tolerance. Thus we conclude that an unstudied Porites has some susceptibility to sedimentation. Although there is no genus-level or species-specific information on the susceptibilities of *Porites* species to nutrients, the SRR rated it as ''low-medium'' importance to corals.. Thus, we conclude that an unstudied *Porites* species has some susceptibility to nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Porites* species is likely to have some susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. The only study of predation reporting on *Porites* indicated it was a not a preferred prey item of crown-of-thorns starfish. Thus, we conclude that *Porites* has a low susceptibility to predation. *Porites* species are heavily collected and widely traded internationally. Thus we conclude that *Porites* has some susceptibility to collection and trade.

In conclusion, an unstudied *Porites* species is likely to have some susceptibility to ocean warming, disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, and collection and trade, and low susceptibility to predation.

Porites horizontalata

Introduction

The SRR and SIR provided the following information on *P. horizontalata's* morphology and taxonomy. Morphology was described as composites of encrusting plates and contorted fused branches. With respect to taxonomy, *Porites* is known to be morphologically plastic and multiple sympatric species frequently exhibit intergradation of skeletal characteristics. The results of a study of genetics of other *Porites* species found that genetics did not correspond well with *Porites* species based on morphology. The laminar parts of colonies of *P. horizontalata* resemble *Porites vaughani,* the branching parts may have corallites arranged in a star-like pattern like *Porites rus,* and the corallite features are most similar to *Porites eridani.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *P. horizontalata,* and that there is a moderate level of species identification uncertainty for this species. Veron (2000; 2014) states that *P. horizontalata* is easily confused with *P. rus,* but the species can be identified by experts (Fenner, 2014b), thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *P. horizontalata's* distribution, habitat, and depth range. *Porites horizontalata's* distribution is from the central Indian Ocean to the central Indo-Pacific and central Pacific. The SRR reported that *P. horizontalata's* habitat is shallow reef environments, and the depth range is from five to 20 m, though it is also known to range into deep water. *Porites horizontalata* is uncommon in Guam and found in deeper quiet waters.

Public comments did not provide any new or supplemental information on *P. horizontalata's* distribution. We gathered supplemental information including Veron (2014), which reports that *P. horizontalata* is confirmed in 28 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 13. Supplemental information on the depth range of *P. horizontalata* in American Samoa indicates it is from about 10 m to at least 30 m deep, and it has been observed at 20 to 30 m of depth in New Caledonia, where it appears much as it does in American Samoa in similar locations (D. Fenner, personal comm.). Thus, based on all the available information, *P. horizontalata's* habitat includes at least upper reef slopes, mid-slope terraces, lower reef crests, and lagoons in depth ranging from five to 30 m depth.

Demographic Information

The SRR and SIR provided the following information on *P. horizontalata's* abundance. *Porites horizontalata* has been reported as sometimes common. Public comments did not provide any new or supplemental information on *P. horizontalata's* abundance. We gathered supplemental information including Veron (2014) and Richards *et al.* (2008). Veron (2014) reports that *P. horizontalata* occupied 4.2 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.62 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was described as ''sometimes common in isolated habitats.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *P. horizontalata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *P. horizontalata* occurs in many areas affected by these broad changes, and that it likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50

to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *P. horizontalata's* life history. *Porites horizontalata* is a gonochoric broadcast spawner. Although specific observations have not been published for this species, the larvae of all other *Porites* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the above-described biological information.

Susceptibility to Threats

To describe *P. horizontalata's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Porites* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR also provided the following species-specific information on *P. horizontalata's* threats. *Porites horizontalata* was a bleaching ''loser'' in Okinawa, disappearing after the 1998 event. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *P. horizontalata.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *P. horizontalata's* vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of reef fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Several public comments provided supplemental information on *P. horizontalata's* threat susceptibilities. One public comment stated that the Loya (2001) study of the effects of bleaching in Okinawa, which reported *P. horizontalata* as a loser, did not actually directly observe bleaching but rather looked at before and after abundances and deduced that species had or had not suffered from bleaching. It also stated that the sampling effort was small and the changes in low abundances may not even have been statistically significant. The comment suggests reducing the ocean warming component for this species in the determination tool to moderate to low (2.5) or to low (3). Another public comment stated that a published study (Goreau *et al.,* 1972) as well as observations on Guam suggest that *Porites* species in the subgenus *Synaraea* are among the least-preferred prey of the crown-of-thorns starfish. The comment stated that other studies (Colgan, 1987; Pratchett, 2007) suggest that *Porites* species in general are among the least preferred prey of crown-of-thorns. The comment further stated that workers on Guam have never seen crown-of-thorns predation on *P. horizontalata* and suspect that this species is among the least preferred prey of crown-of-thorns. The comment suggests changing the predation susceptibility to low (3) or moderate to low (2.5) in the determination tool. A third comment suggested *P. horizontalata* be considered a ''*Synaraea''* species instead of a branching *Porites* species. The common *Synaraea* species *Porites rus* has bleaching levels that are lower than both *Porites* branching and *Porites* massive corals. *Porites horizontalata* is within the *Synaraea* sub-genus and has not been observed to bleach in Guam to date.

We gathered the following supplemental species-specific information on susceptibility to threats for *P. horizontalata.* This species has been rated as moderately or highly susceptible to bleaching and disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). *Porites horizontalata* was found to be a long term loser in Japan following bleaching events (decreasing from 1.2 percent cover to zero and staying there) (van Woesik *et al.,* 2011). *Porites horizontalata* had the ninth highest disease prevalence of 21 species of *Porites* in the Philippines. *Porites horizontalata* had a prevalence of 4, which was 20 percent of the prevalence of the species with the highest prevalence (Raymundo *et al.,* 2005). There is no species-specific information for the susceptibility of *P. horizontalata* to any other threat. Based on information provided in the *Porites* genus description and the species-specific information above, *P. horizontalata* likely has some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, and collection and trade, and low susceptibility to predation. The available information does not support more precise ratings of the susceptibilities of *P. horizontalata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on regulatory mechanisms or conservation efforts for *P. horizontalata.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *P. horizontalata* occurs in 28 Indo-Pacific ecoregions that encompass 25 countries' EEZs. The 25 countries are Brunei, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Japan, Malaysia, Marshall Islands, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Taiwan, Thailand, Timor-Leste, Tonga, Tuvalu, United States (CNMI, Guam, American Samoa, PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *P. horizontalata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (28 percent with 4 percent limited in scope), coral collection (64 percent with 40 percent limited in scope), pollution control (36 percent with 12 percent limited in scope), fishing regulations on reefs (96 percent with 16 percent limited in scope), and managing areas for protection and conservation (96 percent with 4 percent limited in scope). The most common regulatory mechanisms in place for *P. horizontalata* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat utilized for the species, but 40 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are less prominent regulatory mechanisms for the management of *P. horizontalata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *P. horizontalata* include the fairly low tolerance to thermal stress and susceptibility to acidification based on genus-level information. It listed factors that reduce potential extinction risk including the

species' broad distribution and the low predation susceptibility of the genus.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *P. horizontalata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many of the coral reef ecoregions in the central Indo-Pacific, and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future including the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from five to 30 meters, and has been found deeper. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slope terraces, lower reef crests, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *P. horizontalata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *P. horizontalata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *P. horizontalata*'s spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Porites horizontalata*'s distribution across the central Indo-Pacific and central Pacific Ocean is spread over a vast area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Porites horizontalata*'s absolute abundance is at least tens of millions of colonies, which provides buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future as global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *P. horizontalata* is not warranted for listing at this time under any of the listing factors.

Porites napopora

Introduction

The SRR and SIR provided the following information on *P. napopora*'s morphology and taxonomy. Morphology was described as broad basal plates with irregular clumps of tapered irregularly fused branches. *Porites* is known to be morphologically plastic and multiple sympatric species frequently exhibit intergradation of skeletal characteristics. The results of a study of the genetics did not correspond well with the *Porites* species based on morphology. *Porites napopora* is similar to *P. nigrescens* and *P. negrosensis.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, but did confirm that there is moderate taxonomic uncertainty for *P. napopora* and a moderate level of species identification uncertainty. Veron (Veron, 2014) states that *P. napopora* is distinctive, and *P. napopora* can be identified by experts (Fenner, 2014b), thus we conclude that the distribution and abundance information described below for this

species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *P. napopora's* distribution, habitat, and depth range. The SRR and SIR described *P. napopora's* distribution as the Coral Triangle plus Micronesia and the Marianas Islands. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, reef flats, and lagoons, and the depth range as three to 15 meters.

Public comments did not provide any new or supplemental information on *P. napopora's* distribution. We gathered supplemental information including Veron (Veron, 2014) which provides an updated, much more detailed range map for this species than the maps used in the SRR. Veron reports that this species is confirmed in 13 of his 133 Indo-Pacific ecoregions, and is strongly predicted to be found in an additional 13.

Demographic Information

The SRR and SIR provided the following information on *P. napopora's* abundance. *Porites napopora* has been reported as sometimes common.

Public comments did not provide any new or supplemental information on *P. napopora's* abundance. We gathered supplemental information including Veron (Veron, 2014), which reports that *P. napopora* occupied 2.6 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.79 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was described as ''sometimes common in isolated habitats.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *P. napopora,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 33 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent in the study. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *P. napopora* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species specific information.

Other Biological Information

The SRR and SIR provided the following information on *P. napopora's* life history. Although specific observations have not been published for this species, the larvae of all other *Porites* species studied contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the above-described biological information.

Susceptibility to Threats

To describe *P. napopora's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acropora* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *P. napopora.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *P. napopora's* vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *P. napopora's* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Porites napopora* has been rated as moderately or highly susceptible to disease but not to bleaching, but this rating is not based on species-specific data (2008). With regard to disease, *P. napopora* had the 13th highest disease prevalence of 21 species of *Porites* in the Philippines. *Porites napopora* had a prevalence of 0.2, which was one percent of the prevalence of the species with the highest prevalence (Raymundo *et al.,* 2005). There is no species-specific information for the susceptibility of *P. napopora* to any other threat. Based on information provided in the *Porites* genus description above, *P. napopora* is predicted to have some susceptibility to ocean warming, disease, acidification, and likely has some susceptibility to trophic effects of fishing, sedimentation, nutrients, sea-level rise, and collection and trade. Genus-level information indicates this species has low susceptibility to predation.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *P. napopora.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *P. napopora* occurs in 13 Indo-Pacific ecoregions that encompass 10 countries' EEZs. The 10 countries are Brunei, China, Federated States of Micronesia, Indonesia, Japan, Malaysia, Philippines, Taiwan, Timor-Leste, and Vietnam. The regulatory mechanisms relevant to *P. napopora,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (30 percent with none limited in scope), coral collection (60 percent with 30 percent limited in scope), pollution control (30 percent with 10 percent limited in scope), fishing regulations on reefs (100 percent with 30 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *P. napopora* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat utilized for the species, but 30 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are less prominent regulatory

mechanisms for the management of *P. napopora.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *P. napopora* include the species' distribution that is restricted to the western Pacific and the fairly low tolerance to thermal stress and susceptibility to acidification based on genus-level information. It listed factors that reduce potential extinction risk including its high tolerance of sediment stress and turbid water, and low predation susceptibility of the genus.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *P. napopora,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is limited to parts of the Coral Triangle and the western equatorial Pacific Ocean. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range is down to 15 meters. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, reef flats, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. There is not enough information about its abundance to determine if it moderates or exacerbates extinction: It is uncommon overall but common in parts of its range, and has at least millions of colonies, but the great majority of the population is within an area expected to be severely impacted by threats over the foreseeable future.

Listing Determination

In the proposed rule using the determination tool formula approach, *P. napopora* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); narrow overall distribution (based on moderate geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we did not change the listing determination for *P. napopora.* Based on the best available information provided above on *P. napopora's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Porites napopora* is susceptible to warming induced bleaching (ESA Factor E), disease (C), trophic effects of fishing (A), and nutrients (A, E). These threats are expected to continue and worsen into the future. In addition, existing regulatory mechanisms to address global threats that contribute to extinction risk for this species are inadequate (D); and

(2) *Porites napopora's* distribution is constrained mostly to the Coral Triangle and western equatorial Pacific, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the western equatorial Pacific that suggest future ocean warming events may be more severe than average in this part of the world. In addition, the species has a depth distribution of three to 15 m. Such a geographic and depth distribution is likely to experience severe and increasing threats, indicating that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future.

The combination of these characteristics and future projections of threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *P. napopora's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *P. napopora's* distribution is restricted mostly to the Coral Triangle, which increases it extinction risk as described above, its habitat includes shallow reef environments, which describes a variety of reef zones and habitat types in the coral reef ecosystem. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) *Porites napopora's* its absolute abundance is likely at least millions of colonies and is described as ''sometimes common in isolated habitats'' providing areas of localized abundance which allows for variation in the responses of individuals to threats to play a role in moderating vulnerability to extinction for the species to some degree, as described in more detail in the Corals and Coral Reefs section. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic

processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *P. napopora.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Porites nigrescens

Introduction

The SRR and SIR provided the following information on *P. nigrescens'* morphology and taxonomy. The morphology was described as branching, sometimes with an encrusting base, and concave calices give the surface a pitted appearance. *Porites* is known to be morphologically plastic and multiple sympatric species frequently exhibit intergradation of skeletal characteristics. The results of a genetics study did not correspond well with the *Porites* species based on morphology. *Porites nigrescens* is similar in appearance to *Porites cylindrica.*

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there is moderate taxonomic uncertainty for *P. nigrescens* and that there is a moderate level of species identification uncertainty for this species. Veron (2014) states that *P. nigrescens* is easily distinguished from other branching *Porites,* thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *P. nigrescens'* distribution, habitat, and depth range. The SRR and SIR described *P. nigrescens'* distribution as occurring from the Red Sea and east Africa to the central Pacific. Its habitat includes coral reef environments protected from wave action, including at least upper reef slopes, mid-slopes, lower reef slopes, and lagoons, and its depth range as 0 to 20 meters.

The public comments provided information that *P. nigrescens* is widely distributed in all Indonesian waters. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 56 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 18.

Demographic Information

The SRR and SIR provided the following information on *P. nigrescens'* abundance. *Porites nigrescens* has been reported as sometimes common. Where found, it can be a part of a locally abundant branching poritid assemblage.

The public comments and information we gathered provided supplemental information on *P. nigrescens'* abundance. One public comment stated that *P. nigrescens* is very abundant in all Indonesian waters. We gathered supplemental information, including Veron (2014), which reports that *P. nigrescens* occupied 29.05 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 2.01 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''very common.'' Overall abundance was described as ''sometimes common.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *P. nigrescens,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent in the study. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *P. nigrescens* occurs in many areas affected by these broad changes, and that it is likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species specific information.

Other Biological Information

The public comments and information we gathered did not provide any new or supplemental biological information on *P. nigrescens.*

Susceptibility to Threats

To describe *P. nigrescens'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Porites* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *P. nigrescens.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *P. nigrescens'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and nutrients, and low vulnerability to sedimentation, sea-level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *P. nigrescens'* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Porites nigrescens* has not been rated as moderately or highly susceptible to bleaching, but this rating is not based on species-specific data (2008). *Porites nigrescens* appears to have high susceptibility to thermal stress and warming-induced bleaching. *Porites nigrescens* had high bleaching rates in East Africa in 1998 (Obura, 2001) and Palau in 2000 (Bruno *et al.,* 2001). In East Africa, 99 percent of *P. nigrescens* colonies were affected by bleaching at the peak of bleaching in

1998 in Kenya, Tanzania, Mozambique, and Madagascar. This was the third-most affected species out of 14 species, and was affected 99 percent as much as the most affected species. At the end of bleaching, 87 percent of colonies were dead, which was the fifth-highest mortality species, and 94 percent of the mortality level of the highest mortality species (Obura, 2001). In Palau in 2000, *P. nigrescens* had very high to moderate bleaching, and very high mortality. Of all *P. nigrescens* colonies at the study site, 48 percent bleached, and bleaching of different genera and species ranged from none to very high, with mortality from zero to near 100 percent (Bruno *et al.,* 2001). Loya *et al.* (Loya *et al.,* 2001) reported that *P. nigrescens* was a ''loser'' in a 1998 bleaching event in Japan where it went down to zero abundance and cover (Loya *et al.,* 2001).

Porites nigrescens has been rated as moderately or highly susceptible to disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Raymundo *et al.* (2005) reported *P. nigrescens* had the seventh-highest disease prevalence of 21 species of *Porites* in the Philippines. *Porites nigrescens* had a moderate level of disease prevalence relevant to the other coral species in the study. No other species-specific information is available for the susceptibility of *P. nigrescens* to any other threat.

Based on species-specific and genus-level information above, *P. nigrescens* is likely highly susceptible to ocean warming and also likely has some susceptibilities to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *P. nigrescens* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *P. nigrescens.* Public comments were critical of that approach, and we therefore attempt to analyze regulatory mechanisms and conservation efforts on a species basis, where possible, in this final rule. Records confirm that *P. nigrescens* occurs in 56 Indo-Pacific ecoregions that encompass 43 countries' EEZs. The 43 countries are Australia, Brunei, Cambodia, China, Djibouti, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Japan, Kenya, Kiribati, Madagascar, Malaysia, Marshall Islands, Mauritius, Mozambique, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Somalia, South Africa, Sri Lanka, Taiwan, Tanzania, Thailand, Timor-Leste, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory), United States (American Samoa, PRIAs), Vanuatu, Vietnam, and Yemen. The regulatory mechanisms available to *P. nigrescens,* described first as a percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (28 percent with 7 percent limited in scope), coral collection (56 percent with 28 percent limited in scope), pollution control (35 percent with 7 percent limited in scope), fishing regulations on reefs (95 percent with 23 percent limited in scope), and managing areas for protection and conservation (93 percent with 5 percent limited in scope). The most common regulatory mechanisms in place for *P. nigrescens* are reef fishing regulations and area management for protection and conservation. Coral collection laws are somewhat utilized but some are limited in scope and may not provide substantial protection for *P. nigrescens.* General coral protection and pollution control laws are much less prominent regulatory mechanisms for the management of *P. nigrescens.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *P. nigrescens* include the fairly low tolerance to thermal stress and susceptibility to acidification impacts in the genus. It listed factors that reduce potential extinction risk including the species' broad distribution, the high tolerance of sediment stress and turbid water, and low disease and predation susceptibility of the genus.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *P. nigrescens,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is down to at least 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slopes, lower reef slopes, and lagoons protected from wave action. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *P. nigrescens* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA

Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *P. nigrescens* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *P. nigrescens'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Porites nigrescens'* distribution from the Red Sea and east Africa across most of the Pacific Ocean is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Porites nigrescens'* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *P. nigrescens* is not warranted for listing at this time under any of the listing factors.

Genus Pachyseris

Genus Introduction

The family Agaricidae includes six genera, *Agaricia* (Caribbean only), *Leptoseris, Pavona, Pachyseris, Gardineroseris,* and *Coeloseris. Pachyseris* contains four species, all in the Indo-Pacific. *Pachyseris* species are foliose, and one species can produce short columns or branches. The SRR and SIR provided no genus-level introductory information on *Pachyseris.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Pachyseris.* A series of studies reported that *Pachyseris* experiences variable but high levels of bleaching, though in some places it may be bleaching tolerant. *Pachyseris'* high bleaching rate and relative rarity may give it a relatively high extirpation risk in the western Indian Ocean. Trade in this genus is relatively high.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Pachyseris.* We gathered supplemental information that provided the following details. *Pachyseris* had a bleaching index of 8.3 for eight countries in the western Indian Ocean in 1998–2005, which was 33rd highest of the 45 genera recorded, and 20 percent of the highest value. As a genus, its moderate bleaching rate combined with relative rarity may give it a relatively high extirpation risk in the western Indian Ocean (McClanahan *et al.,* 2007a). Done *et al.* (2003b) reported that overall bleaching rates for two species of *Pachyseris* were 15 percent and 38 percent on the GBR in 2002, which were the seventh and third highest levels of bleaching out of 16 species of Agariciids. There is no information available on the effects of any other threat for *Pachyseris.*

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Pachyseris* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. *Pachyseris* has a variable level of susceptibility to bleaching, with most reports of bleaching being moderate to high. Thus, we conclude that an unstudied *Pachyseris* species is likely to have high susceptibility to ocean warming. Although there is no other genus-level or species-specific information on the susceptibilities of *Pachyseris* species to disease and ocean acidification, the SRR rated them as ''high'' and ''medium-high'' importance to corals, respectively. Thus, we conclude that an unstudied *Pachyseris* species is likely to have some susceptibility to disease and ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Pachyseris* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. Although there is no genus-level or species-specific information on the susceptibilities of *Pachyseris* species to sedimentation and nutrients, the SRR rated them as ''low-medium''

importance to corals.. Thus, we conclude that an unstudied *Pachyseris* species is likely to have some susceptibility to sedimentation and nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Pachyseris* species is likely to have some susceptibility to sea-level rise. Although there is no genus-level or species-specific information on the susceptibilities of *Pachyseris* species to predation, there is no information suggesting they are not susceptible to this threat. Thus, we conclude that an unstudied *Pachyseris* species has some susceptibility to predation. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. Because the available general information suggests that collection and trade of *Pachyseris* species is relatively high, we conclude an unstudied *Pachyseris* species is likely to have some susceptibility to collection and trade.

In conclusion, an unstudied *Pachyseris* species is likely to have high susceptibility to ocean warming, and some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, predation, sea-level rise, and collection and trade.

Pachyseris rugosa

Introduction

In The SRR and SIR provided the following information on *P. rugosa's* morphology and taxonomy. Morphology was described as colonies that are upright, irregular, fused, bifacial plates, and taxonomy was described as having no taxonomic issues, but being similar to *Pachyseris gemmae* and *Pachyseris involuta.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *P. rugosa,* and a low level of species identification uncertainty. Veron (2014) states that *P. rugosa* is very distinctive and Veron (2000; 2014) considers the species valid, and we consider it can be identified by experts, thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *P. rugosa's* distribution, habitat, and depth range. The SRR and SIR described *P. rugosa's* distribution as from the Red Sea and east Africa to the central Pacific. Regarding habitat, the SRR and SIR stated that *P. rugosa* may develop into large mound-shaped colonies in shallow water but smaller colonies occur in a wide range of habitats including those exposed to strong wave action. It is associated with fine-grained sediments on the Great Barrier Reef, and could be an indicator of quiet water or a moderate energy environment. Thus, its habitat includes at least upper reef slopes, mid-slopes, and lagoons. Its depth range is from five to 20 meters, and it may be excluded from shallow environments by excess light.

Public comments did not provide any new or supplemental information on *P. rugosa's* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 57 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 17.

Demographic Information

The SRR and SIR reported *P. rugosa's* abundance as common.

Public comments did not provide any new or supplemental information on *P. rugosa's* abundance. We gathered supplemental information, including Veron (2014), which reports that *P. rugosa* occupied 23.5 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.45 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common,'' and overall abundance was also described as ''common.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *P. rugosa,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context, thus quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *P. rugosa* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *P. rugosa's* life history. *Pachyseris rugosa* is a gonochoric broadcast spawner. This species contains clade C zooxanthellae, with a predominance of clade C3h in areas of greater temperature or turbidity. Public comments and information we gathered added no new or supplemental information to the above-described biological information.

Susceptibility to Threats

To describe *P. rugosa's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Pachyseris* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *P. rugosa's* threats. *Pachyseris rugosa* is vulnerable to a ciliate disease skeletal eroding band. Although overall disease presence was low during a survey in Indonesia, the black-band progressed across *P. rugosa* at an average rate of 0.63cm/d. Mass mortality of this species on the GBR has been attributed to crown of thorns starfish, although predation was not observed directly. *Pachyseris rugosa* has suffered high partial mortality as a result of dredging, but its branching structure should make it an efficient sediment-rejecter. The species disappeared in Jakarta Bay between 1920 and 2005, which was attributed to decreased water quality from coastal development. *Pachyseris rugosa* experiences substantial export, averaging 1195 specimens annually from 1991 to 2008, decreasing in 1997–2003, but returning to 2085 per year in

2004–2008. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *P. rugosa.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *P. rugosa's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, and trophic effects of fishing, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *P. rugosa's* susceptibility to threats. We gathered the following supplemental species-specific and genus-level information on this species' threat susceptibilities. *Pachyseris rugosa* has been rated as moderately or highly susceptible to bleaching but not disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). With regard to thermal stress, 15 percent of *P. rugosa* colonies were affected by bleaching on the GBR in 2002. The median bleaching level among Agariciidae colonies was 10 percent, and the maximum was 58 percent. The only other *Pachyseris* reported, *P. speciosa,* bleached at a rate of 38 percent (Done *et al.,* 2003b). All colonies of *P. rugosa* were partly bleached at Laem Set at Samui Island in the western Gulf of Thailand in 1998, and all were completely bleached in 2010. However, after both bleaching events, all colonies recovered and were healthy (Sutthacheep *et al.,* 2013). In Palau in 2000, *P. rugosa* had variable but generally high bleaching levels and high mortality: 48 percent of all colonies of all species were bleached, and bleaching of different genera and species ranged from none to very high, and mortality from zero to near 100 percent (Bruno *et al.,* 2001). Based on species specific and genus information presented above, *P. rugosa* is predicted to have a moderate to high level of susceptibility to bleaching. With regard to disease, Page and Willis (2007) reported that skeletal eroding band has been found in *P. rugosa* on the GBR, where it is the most prevalent disease on corals. However, the prevalence on *P. rugosa* was too low to record in transects. Darling *et al.* (2012) performed a biological trait-based analysis to categorize the relative tolerance of coral species to environmental stress. *Pachyseris rugosa* was classified as a ''generalist'' species, defined as species that can do well in habitats where competition is limited by low levels of stress. There are no other reports of the effects of any other threats on *P. rugosa.* Based on genus-level and species-specific information describe above, *P. rugosa* is likely to have high susceptibility to ocean warming and some susceptibility to disease, ocean acidification, trophic effects of fishing, nutrients, sedimentation, sea level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibility of *P. rugosa* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanism or conservation efforts for *P. rugosa.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *P. rugosa* occurs in 57 Indo-Pacific ecoregions that encompass 36 countries' EEZs. The 36 countries are Australia, Brunei, China, Egypt, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (including Andaman and Nicobar Islands), Indonesia, Israel, Japan, Jordan, Madagascar, Malaysia, Maldives, Mauritius, Myanmar, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Solomon Islands, Sri Lanka, Sudan, Taiwan, Thailand, Timor-Leste, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory), United States (American Samoa, PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *P. rugosa,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (28 percent with 6 percent limited in scope), coral collection (61 percent with 31 percent limited in scope), pollution control (44 percent with 8 percent limited in scope), fishing regulations on reefs (92 percent with 19 percent limited in scope), managing areas for protection and conservation (97 percent with 8 percent limited in scope). The most common regulatory mechanisms in place for *P. rugosa* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 31 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *P. rugosa.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *P. rugosa* are that it has had high (but variable) observed bleaching in response to warming events, has been observed to be susceptible to multiple types of disease, and has been inferred to be susceptible to poor water quality. Substantial collection from the aquarium trade could lead to local extirpation in some areas. It listed factors that reduce potential extinction risk including that *P. rugosa* has a widespread distribution from the central Pacific to Africa, and it can have a high local abundance.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *P. rugosa,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean, and some in the Red Sea. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from five to at least 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than

surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slopes, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore, there will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *P. rugosa* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *P. rugosa* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *P. rugosa's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to likely become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Pachyseris rugosa's* distribution from the Red Sea across the Indian Ocean and most of the Pacific Ocean includes tens of thousands of islands and reefs spread over a vast area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Pachyseris rugosa* is described as common throughout its vast geographic range and its total population size is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *P. rugosa* is not warranted for listing at this time under any of the listing factors.

Genus Pavona

Genus Introduction

The family Agaricidae includes six genera, *Agaricia* (Caribbean only), *Leptoseris, Pavona, Pachyseris, Gardineroseris,* and *Coeloseris.* Veron (Veron, 2000) recognizes 14 species in the genus *Pavona.* Colonies of *Pavona* species have plates, branches, or are massive. The SRR and SIR provided no genus-level introductory information on *Pavona.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Pavona.* One study reports *Pavona* had mixed bleaching susceptibility on the GBR. Other studies reported that both massive and encrusting *Pavona* have been highly susceptible to bleaching in the eastern Pacific. Calcification in one *Pavona* species slowed in reduced aragonite saturation state. Two massive *Pavona* in the eastern Pacific showed little calcification reduction over 30 years in response to acidification. The presence of several species of *Pavona* in low aragonite saturation states in the Eastern Pacific suggests some tolerance to acidification. There are a medium number of acute white diseases found in *Pavona* by surveys in the Pacific. Members of the genus *Pavona* are susceptible to predation by crown-of-thorns seastar (*Acanthaster planci*), but susceptibility is variable among species in the eastern Pacific. The genus *Pavona* is generally regarded as moderately tolerant to sediment stress. More than 1,000 pieces of *Pavona* are traded per year.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Pavona.* We gathered supplemental information that provided the following. With regard to thermal stress, Brown and Suharsono (1990) reported that less than half of the *Pavona* on the reef flats of two islands in the Thousand Islands of Indonesia died in the 1983 El Nino mass bleaching. In the mass bleaching event in 1998 in the Ryukyu Islands of Japan, *Pavona* was highly susceptible to bleaching, and mortality was 100 percent, higher than any other of the six genera included in the study (Kayanne *et al.,* 2002). In contrast, during the same 1998 bleaching event in Kenya, mortality of *Pavona* colonies was zero, and *Pavona* was one of five genera out of the 18 genera in the study that had no mortality (McClanahan *et al.,* 2004). *Pavona's* bleaching index was the second lowest of the 18 genera (McClanahan *et al.,* 2004). In a bleaching event on Palau in 2000, three species of *Pavona* had high levels of bleaching and high mortality. Forty-eight percent of all colonies of all species were bleached, and both bleaching and mortality of different

genera and species ranged from zero to near 100 percent (Bruno *et al.,* 2001). In a bleaching event on the GBR in 2002, between seven percent and 57 percent of six species of *Pavona* were affected (Done *et al.,* 2003b). In a bleaching event on Mauritius in 2004, *Pavona* had the fourth lowest bleaching of the 32 genera recorded (McClanahan *et al.,* 2005a). In a bleaching event on Howland and Baker Islands in 2010, between 32 and 37 percent of *Pavona* colonies bleached (Vargas-Angel *et al.,* 2011). During the same 2010 bleaching event in Thailand, between 47 and 67 percent of *Pavona* colonies bleached (Sutthacheep *et al.,* 2013).

In a broad study of 45 genera in the western Indian Ocean in 1998 to 2005, *Pavona* ranked 31st in bleaching susceptibility (McClanahan *et al.,* 2007a). *Pavona* had a low prevalence of disease in Guam, with 0.5% of colonies with disease, tied for sixth highest prevalence out of 12 genera, with the highest genus having 6.7 percent (Myers and Raymundo, 2009). There is no other supplemental information on the susceptibilities or vulnerabilities of *Pavona* to other threats.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Pavona* species to ocean warming, disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. There was a wide range of reported susceptibility of *Pavona* colonies to ocean warming and acidification. One study reported a moderate disease prevalence in *Pavona* and another reported a low prevalence. Thus, we conclude that an unstudied *Pavona* species is likely to have some susceptibility to ocean warming, disease, and acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Pavona* species is likely to be susceptible to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. The SRR reported that one study showed *Pavona decussata* had an intermediate level of susceptibility to sedimentation. Thus, we conclude that an unstudied *Pavona* species is likely to have some susceptibility to sedimentation. Although there is no genus-level or species-specific information on the susceptibilities of *Pavona* species to nutrients, the SRR rated it as ''low-medium'' importance to corals.. Thus, we conclude that an unstudied *Pavona* species is likely to have some susceptibility to nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Pavona* species is likely to have some susceptibility to sea-level rise. The SRR reported that *Pavona* was susceptible to starfish predation (but the level varied by species) and that the genus is traded in a moderate amount. Thus, we conclude that an unstudied *Pavona* species has some susceptibility to predation and to collection and trade.

In conclusion, an unstudied *Pavona* species is likely to have some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, nutrients, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Pavona diffluens

Introduction

The SRR and SIR provided the following information on *P. diffluens'* morphology and taxonomy. Morphology was described as submassive, and the taxonomy was described as having no taxonomic issues, but it is similar to *Pavona gigantea* and *Pavona explanulata*.

The public comments and information we gathered did not provide any new or supplemental information on morphology. There is high taxonomic uncertainty about colonies that appear similar to *P. diffluens* in the Pacific, but low taxonomic uncertainty about *P. diffluens* in the Red Sea and Indian Ocean. Both colonies in the Red Sea/Indian Ocean, and in the Pacific, are easily distinguished from other *Pavona.* Veron (2014) states that, ''We believe that Pacific *P. diffluens* is likely to be a similar but different species from western Indian Ocean *P. diffluens.''* We treat *P. diffluens* as the colonies in the Red Sea and Indian Ocean only, as this is the best currently available scientific information. Veron (2000; 2014) considers the species valid, and we consider it is sufficiently distinctive to be identified by experts, thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *P. diffluens'* distribution, habitat, and depth range. *Pavona diffluens* occurs from the Red Sea to the Arabian Gulf, and records show this species from the Marianas Islands and American Samoa, but the records from the Marianas Islands were unlikely. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, reef flats, and lagoons, in depths ranging from five to at least 20 m.

The public comments and information we gathered provided supplemental information on the distribution of *P. diffluens.* One public comment stated that the occurrence of *P. diffluens* in the Marianas indicates that this species has a broader range than has been recognized by the authors. We gathered supplemental information, including additional reports of *P. diffluens* from American Samoa (Fenner, 2014b; Kenyon *et al.,* 2010), but the taxonomic question for them remains. Veron (2014) reports that this species is confirmed in five of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional three, all of which are in the western Indian Ocean. The public comments and information we gathered provided nothing new or supplemental on *P. diffluens'* habitat and depth range.

Demographic Information

The SRR and SIR provided the following information on *P. diffluens'* abundance. *Pavona diffluens* has been reported as uncommon.

The public comments did not provide any new or supplemental information on *P. diffluens'* abundance, but we gathered supplemental information that provided the following: Veron (Fenner, 2014b; Veron, 2014) reported that *P. diffluens* occupied 0.47% of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.43 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance is characterized as

''rare,'' and overall abundance is described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *P. diffluens,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 20 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, these changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *P. diffluens* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *P. diffluens'* life history. The reproductive characteristics of *P. diffluens* have not been determined, but six other species in the genus are known to be gonochoric broadcast spawners. The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the above-described biological information.

Susceptibility to Threats

To describe *P. diffluens'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Pavona* of ocean warming, disease, acidification, sedimentation, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *P. diffluens.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule as follows: High vulnerability to ocean warming, moderate vulnerabilities to disease, ocean acidification, and trophic effects of fishing, low vulnerabilities to sedimentation, sea-level rise, predation, and collection and trade, and unknown vulnerability to nutrients.

Public comments did not provide any new or supplemental information on *P. diffluens'* threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *P. diffluens* has not been rated as moderately or highly susceptible to bleaching or disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). There is no species-specific information for the exposure or susceptibility of *P. diffluens* to any threat. Based on genus-level and species information described above, *P. diffluens* likely has some susceptibilities to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *P. diffluens* to the threats.

Regulatory Mechanisms

In the proposed rule we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *P. diffluens.* Criticisms of our approach received during public comment led us to the following analysis to attempt to analyze regulatory mechanisms on a species basis. Records confirm that *Pavona diffluens* occurs in five Indo-Pacific ecoregions that encompass 14 countries' EEZs. The 14 countries are Djibouti, Egypt, Eritrea, France (French Pacific Island Territories), Iran, Israel, Jordan, Madagascar, Oman, Pakistan, Saudi Arabia, Sudan, United Arab Emirates, and Yemen. The regulatory mechanisms relevant to *P. diffluens,* described first as the percentage of the above countries that utilize them to any degree, and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (21 percent with 7 percent limited in scope), coral collection (43 percent with 7 percent limited in scope), pollution control (64 percent with 7 percent limited in scope), fishing regulations on reefs (71 percent with 21 percent limited in scope), and managing areas for protection and conservation (79 percent with 21 percent limited in scope). The most common regulatory mechanisms in place for *P. diffluens* are reef fishing regulations and area management for protection and conservation. Pollution control laws are also common for the species. Coral collection and general coral protection laws are less common regulatory mechanisms for the management of *P. diffluens.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that *P. diffluens'* fairly moderate-to-low tolerance to thermal stress and the species' narrow distribution range increase the potential extinction risk. It listed factors that reduce potential extinction risk for *P. diffluens* including its moderate tolerance of sediment stress and its low susceptibility of the genus to disease and predation.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *P. diffluens,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is limited only to parts of the western Indian Ocean along coastal East Africa, the Red Sea, and the Gulf of Oman. This range exacerbates vulnerability to extinction over the foreseeable future because of its size and localized human impacts for coral reefs over the 21st century. In addition, parts of the Red Sea are projected to experience severe impacts from climate change more rapidly than other parts of the Indo-Pacific region. Its depth range of five to 25 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the

species occurs. Its habitat includes at least upper reef slopes, mid-slopes, lower reef crests, reef flats, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance of at least millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. However, its qualitative abundance is described as rare, which can exacerbate its vulnerability given its restricted range.

Listing Determination

In the proposed rule using the determination tool formula approach, *P. diffluens* was proposed for listing as threatened because of: Moderate vulnerability to ocean warming (ESA Factor E), disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, the listing determination for *P. diffluens* remained threatened. Based on the best available information provided above on *P. diffluens'* spatial structure, demography, threat susceptibilities, and management, it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Pavona diffluens* is susceptible to ocean warming (E), disease (C), ocean acidification (E), trophic effects of fishing (A), nutrients (A, E), and predation (C). In addition, the species has inadequate regulatory mechanisms for global threats (D);

(2) *Pavona diffluens'* distribution is mostly constrained to a small part of the Indian Ocean where projections of local threats (*e.g.,* land-based sources of pollution) and general effects of climate change are both frequent and severe over the foreseeable future. The Red Sea in particular is projected to experience frequent warming events sooner than most other parts of the Indo-Pacific region. A range constrained to a particular geographic area this size, predicted to experience increasing threat impacts, indicates that a high proportion of the population of this species is likely to be exposed to threats that occur throughout this range over the foreseeable future; and

(3) *Pavona diffluens'* qualitative abundance is rare, which means it does not possess as much buffering capacity in the form of variability in response between individuals or absolute abundance that would be afforded to a more abundant or common species. Combined with the limited range of this species, this level of abundance leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *P. diffluens'* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *P. diffluens'* distribution is constrained only to parts the western Indian Ocean along coastal East Africa, the Red Sea, and the Gulf of Oman, the species' range still includes heterogeneous habitat across its range, including at least upper reef slopes, mid-slopes, lower reef crests, reef flats, and lagoons. Thus, the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented or geographically constrained that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) While *P. diffluens'* qualitative abundance is rare, its absolute abundance is at least millions of colonies, which allows for some variation in the responses of individuals to threats. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its abundance indicates it is currently able to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events.

The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *P. diffluens.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* GHG emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Genus Pectinia

Genus Introduction

The family Pectiniidae includes five genera, *Pectinia, Echinomorpha, Echinophyllia, Oxypora* and *Mycedium.* Veron (2000) recognizes nine species of *Pectinia.* Colonies are laminar to branching, and may have high walls separating wide valleys. The SRR and SIR provided no genus-level introductory information on *Pectinia.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Pectinia.* A case study from the Waikiki Aquarium reported tolerance of *Pectinia alcicornis* to low pH. With regards to disease, the SRR referred to a study that reported crustacean parasites in *Pectinia lactuca* in American Samoa. However, taxonomists have not recorded any *Pectinia* species there so far (D. Fenner, personal comm.). Another study referred to in the SRR reported *Pectinia* was not infected by ciliate skeletal eroding band on the GBR. The SRR referred to two studies that reported that *Pectinia* is tolerant of sediment, one study that indicated it was tolerant of high nutrients, and one study that reported it decreased along a gradient of reduced water quality. The SRR reported that Pectinidae species are

highly susceptible to crown-of-thorns seastar. The SRR reported that the genus *Pectinia* is heavily exported—several thousand specimens are exported annually.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Pectinia.* We gathered supplemental information that provided the following. With regard to thermal stress, during a bleaching event on the GBR in 2002, between five and 11 percent of three species of *Pectinia* were affected (Done *et al.,* 2003a). In Palau in 2000, *Pectinia lactuca* and *Pectinia peonia* both had high levels of bleaching and high mortality. Forty-eight percent of all colonies of all species were bleached, and both bleaching and mortality of different genera and species ranged from zero to near 100 percent (Bruno *et al.,* 2001). Ruiz-Moreno *et al.* (2012) reported that the family Pectinidae had the highest disease prevalence of any family of corals in the Pacific, and third highest of all coral families they studied in the Caribbean and Indo-Pacific. However, the family Pectinidae has five genera, and the study did not report on the genus *Pectinia.* There is no other supplemental information on the susceptibilities of *Pectina* to threats.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Pectinia* species to ocean warming, disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. *Pectinia* shows a variable level of warming-induced bleaching, thus we conclude that an unstudied *Pectinia* is likely to have some susceptibility to ocean warming. Although there is no other genus-level or species-specific information on the susceptibility of *Pectinia* species to disease, the SRR rated it as ''high'' importance to corals, thus we conclude that an unstudied *Pectinia* is likely to have some susceptibility to disease. One study reported one species of *Pectinia* had some resistant to acidification, thus with only one study, we conclude that an unstudied *Pectinia* is likely to have some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Pectinia* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. Studies of the effects of sediment and nutrients on *Pectinia* were inconsistent, thus we conclude that an unstudied *Pectinia* species is likely to have some susceptibility to sediment and nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Pectinia* species is likely to have some susceptibility to sea-level rise. The SRR reported that Pectinidae species are highly susceptible to crown-of-thorns seastar, thus we conclude that an unstudied *Pectinia* species is likely to have some susceptibility to collection and trade. The SRR rated ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. The SRR reported that *Pectinia* is heavily traded, thus we conclude that an unstudied *Pectinia* species is likely to have some susceptibility to collection and trade.

In conclusion, an unstudied *Pectinia* species is likely to have some susceptibility to ocean warming, disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade.

Pectinia alcicornis

Introduction

The SRR and SIR provided the following information on *P. alcicornis'* morphology and taxonomy. Morphology was described as irregular clusters with thin, flat, grooved plates and tall, upward-projecting spires that can dominate its structure. The taxonomy was described as having no taxonomic issues but being similar in appearance to *Pectinia paeonia.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *P. alcicornis,* but a moderate level of species identification uncertainty exists. Veron (2014) states that *P. alcicornis* is sometimes confused with other *Pectinia* species and Veron (2000; 2014) considers the species valid, thus we conclude it can be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *P. alcicornis'* distribution, habitat, and depth range. The SRR and SIR described *P. alcicornis'* distribution as broadly distributed from the northern Indian Ocean to Fiji. It inhabits turbid water and other low-light environments in most coral reef habitats, including at least upper reef slopes, mid-slopes, lagoons, and caves, at depths of five to 25 m.

Public comments did not provide any new or supplemental information on *P. alcicornis'* distribution. We gathered supplemental information including, Veron (2014), which reports that this species is confirmed in 39 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 16.

Demographic Information

The SRR and SIR reported *P. alcicornis'* abundance as usually uncommon.

Public comments did not provide any new or supplemental information on *P. alcicornis'* abundance. We gathered supplemental information including Veron (2014), which reports that *P. alcicornis* occupied 16.6 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.6 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common,'' and overall abundance was described as ''usually uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from

total live coral cover trends and habitat types. For *P. alcicornis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 38 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *P. alcicornis* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR reported that *P. alcicornis* is a hermaphroditic broadcast spawner. The public comments and information we gathered provided no new or supplemental biological information.

Susceptibility to Threats

To describe *P. alcicornis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Pectinia* of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR also provided the following species-specific information on *P. alcicornis'* threats. *Pectinia alcicornis* showed very little mortality on the GBR in the 2001–2002 mass bleaching event. *Pectinia alcicornis* harbors Clade C zooxanthellae in Okinawa and the South China Sea, but contained Clade D zooxanthellae in Palau after the 2001 mass bleaching event. It is one of many species that has been raised in the Waikiki Aquarium, which is characterized by high-nutrient, low-pH waters. Although it is generally a sediment-tolerant genus, *P. alcicornis* decreased along a deteriorating water quality gradient on the Great Barrier Reef. *Pectinia alcicornis* exports were reported at the species level only for 2000–2003, with a total of 133 specimens reported. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *P. alcicornis.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *P. alcicornis'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and predation, and low vulnerability to sedimentation, nutrients, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *P. alcicornis'* threats susceptibilities. We gathered supplemental species-specific and genus-level information on this species' threat susceptibilities. *Pectinia alcicornis* has been rated as moderately or highly susceptible to bleaching but not to disease, however this rating is not based on species-specific data (Carpenter *et al.* 2008). With regard to thermal stress, eight percent of *P. alcicornis* was affected by bleaching on the GBR in 2002. The other two *Pectinia* species included in the study were affected by bleaching at rates of three percent and 12 percent, and the range for all members of family Pectiniidae was zero to 17 percent (Done *et al.,* 2003a). There is no other supplemental information on the effects of threats on this species. Based on genus-level and species-specific information described above, *P. alcicornis* likely has some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of this species' threat susceptibilities.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *P. alcicornis.* Public comments were critical of that approach and we therefore attempt to analyze regulatory mechanisms on a species basis in this final rule. Records confirm that *Pectinia alcicornis* occurs in 39 Indo-Pacific ecoregions that encompass 21 countries' EEZs. The 21 countries are Australia, Brunei, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Japan, Malaysia, Myanmar, Palau, Papua New Guinea, Philippines, Solomon Islands, Sri Lanka, Taiwan, Thailand, Timor-Leste, Vanuatu, and Vietnam. The regulatory mechanisms relevant to *P. alcicornis,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (33 percent with 10 percent limited in scope), coral collection (52 percent with 29 percent limited in scope), pollution control (38 percent with 14 percent limited in scope), fishing regulations on reefs (100 percent with 14 percent limited in scope), and managing areas for protection and conservation (95 percent with none limited in scope). The most common regulatory mechanisms in place for *P. alcicornis* are reef fishing regulations and area management for protection and conservation. Coral collection laws are also somewhat utilized for the species, but 29 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection and pollution control laws are less common regulatory mechanisms for the management of *P. alcicornis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that high bleaching rate is the primary threat of extinction for *Pectinia,* although *P. alcicornis* may be relatively resistant in some areas. Factors that increase potential extinction risk for *P. alcicornis* include susceptibility to bleaching, predation, and harvesting. It listed factors that reduce potential extinction risk including that *P. alcicornis* occupies a variety of habitat types and is broadly distributed both latitudinally and longitudinally in the Indo-Pacific.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed

to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *P. alcicornis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is from the northern Indian Ocean to Fiji. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is five to 25 m. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its inhabits turbid water and other low-light environments in most coral reef habitats, including at least upper reef slopes, mid-slopes, lagoons, and caves. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Turbidity in particular can moderate exposure to high irradiance by blocking light and resulting heat from the water column. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *P. alcicornis* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *P. alcicornis* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *P. alcicornis'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to likely become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Pectinia alcicornis'* distribution from the northern Indian Ocean through the western Pacific Ocean to Fiji includes tens of thousands of islands and reefs spread over a vast area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the central Pacific and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Pectinia alcicornis'* total population size is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) *Pectinia alcicornis* extends down to 25 meters depth, providing some buffering capacity against threat-induced mortality events that may be more severe in shallow habitats;

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *P. alcicornis* is not warranted for listing at this time under any of the listing factors.

Genus Acanthastrea

Genus Introduction

The family Mussidae has 13 genera, eight of which are restricted to the Indo-Pacific, including *Acanthastrea.* The genus *Acanthastrea* contains 12 known species. Most *Acanthastrea* are encrusting, but one is massive. The SRR and SIR provided no genus-level introductory information on *Acanthastrea.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Acanthastrea.* The genus *Acanthastrea* has been reported to be highly susceptibility to bleaching in Australia and in the western Indian Ocean. The genus sustained moderate bleaching in Palau in 1994 and several *Acanthastrea* species were relatively unaffected during the 2002 event on the GBR (Done *et al.,* 2003b). Although no exports of *Acanthastrea* were reported from 2000–2009, 1,000 *Acanthastrea* pieces were exported from Indonesia in 2010.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Acanthastrea.* We gathered supplemental information which provided the following details. All *Acanthastrea* in protected areas in Kenya were killed by mass bleaching in 1998 (McClanahan *et al.,* 2001). Out of

four *Acanthastrea* species on the GBR, three species were not affected by the 2002 GBR bleaching event, while 22 percent of one species was affected (Done *et al.,* 2003b). At Mauritius in a bleaching event in 2004, *Acanthastrea* had a bleaching index of nine, the 22nd highest of the 32 genera recorded, which was 14 percent of the index of the genus with the highest index (McClanahan *et al.,* 2005a). In the western Indian Ocean in 1998–2005, *Acanthastrea* had a bleaching index of 14.4 for eight countries, which was 24th highest of the 45 genera recorded, and 35 percent of the highest value (McClanahan *et al.,* 2007a).

With regard to land-based sources of pollution, Stafford-Smith (1993) reported that 14 of 20 *Acanthastrea echinata* samples cleared over 98 percent of sediment within 48 hours, the 12th best score. This score was 70 percent of the highest scoring species. There is no other supplemental information on the effects of threats on the genus *Acanthastrea.*

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Acanthastrea* species to ocean warming, disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. The above information on *Acanthastrea* shows a wide range of susceptibility to ocean warming, thus we conclude that an unstudied *Acanthastrea* species is likely to have some susceptibility to ocean warming. Although there is no genus-level or species-specific information on the susceptibilities of *Acanthastrea* species to disease and ocean acidification, the SRR rated it as ''medium-high'' importance to corals. Thus, we conclude that an unstudied *Acanthastrea* species is likely to have some susceptibility to disease and ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Acanthastrea* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. One study found an *Acanthastrea* species to have moderate sediment-clearing ability. Thus we conclude that an unstudied *Acanthastrea* species is likely to have some susceptibility to sedimentation. Although there is no genus-level or species-specific information on the susceptibilities of *Acanthastrea* species to nutrients, the SRR rated it as ''low-medium'' importance to corals. Thus, we conclude that an unstudied *Acanthastrea* species has some susceptibility to nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Acanthastrea* species is likely to have some susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. Although there is no genus-level or species-specific information on the susceptibilities of *Acanthastrea* species to predation, there is no information suggesting they are not susceptible to this threat. Thus, we conclude that an unstudied *Acanthastrea* species has some susceptibility to predation. Because the available information suggests that *Acanthastrea* species are lightly collected and traded, an unstudied *Acanthastrea* species is likely to have low susceptibility to collection and trade.

In conclusion, an unstudied *Acanthastrea* species is likely to have some susceptibility to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, and predation, and is likely to have low susceptibility to collection and trade.

Acanthastrea brevis

Introduction

The SRR and SIR provided the following information on *A. brevis'* morphology and taxonomy. Morphology was described as mostly submassive, attached and colonial, and the taxonomy was described as having no taxonomic issues but being similar in appearance to *Acanthastrea echinata.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *A. brevis,* but a moderate to high level of species identification uncertainty. Veron (2014) states that it is ''readily confused with *Acanthastrea echinata,''* but Veron (2000; 2014) considers the species valid, thus we conclude it can be identified by experts and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. brevis'* distribution, habitat, and depth range. *Acanthastrea brevis* is distributed from the Red Sea and western Indian Ocean to American Samoa in the central Pacific. Its habitat includes all coral reef habitats, in a depth range of one to 20 m.

Public comments provided the following information on distribution for *A. brevis.* One public comment stated that *A. brevis* likely occurs in the Marianas and will be included in an upcoming book. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 29 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 17. *Acanthastrea brevis* is found in the Northern Marianas and American Samoa as well (D. Fenner, personal comm.) and the Marianas are one of the predicted areas for *A. brevis* in the Veron (2014) information. Public comments and information we gathered did not provide any more information on the habitat and depth range of this species.

Demographic Information

The SRR and SIR reported *A. brevis'* abundance as uncommon but conspicuous.

Public comments did not provide any new or supplemental information on *A. brevis'* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. brevis* occupied 6.5 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.49 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was also described as ''uncommon.''

Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. brevis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. brevis* occurs in many areas affected by these broad changes, and likely has some susceptibility to both local and global threats, we conclude it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. brevis'* life history. Although specific larval descriptions have not been published for this species, the larvae of three other *Acanthastrea* species studied do not contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the above-described biological information.

Susceptibility to Threats

To describe *A. brevis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acanthastrea* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. brevis.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. brevis'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, and trophic effects of fishing, and low vulnerability to sedimentation, sea level rise, and collection and trade, and unknown vulnerability to nutrients.

Public comments did not provide any new or supplemental information on *A. brevis'* threats susceptibilities. We gathered supplemental species-specific and genus-level information on this species' threat susceptibilities. *Acanthastrea brevis* was not rated as moderately or highly susceptible to bleaching or coral disease by Carpenter *et al.* (2008), but they did not use species-specific data for their ratings. Based on genus-level and species information described above, *A. brevis* likely has some susceptibility to ocean warming, disease, ocean acidification, trophic effects of fishing, nutrients, sedimentation, sea-level rise, and predation, and low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. brevis.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *Acanthastrea brevis* occurs in 29 Indo-Pacific ecoregions that encompass 31 countries' EEZs. The 31 countries are Australia, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Jordan, Kiribati, Madagascar, Malaysia, Mauritius, New Zealand (Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Saudi Arabia, Seychelles, Solomon Islands, Sri Lanka, Sudan, Tonga, Tuvalu, United Kingdom (British Indian Ocean Territory), United States (American Samoa), Vietnam, and Yemen. The regulatory mechanisms relevant to *A. brevis,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (29 percent with 6 percent limited in scope), coral collection (65 percent with 26 percent limited in scope), pollution control (55 percent with 10 percent limited in scope), fishing regulations on reefs (90 percent with 19 percent limited in scope), and managing areas for protection and conservation (97 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. brevis* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are somewhat common for the species, but 26 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. brevis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that high susceptibility to bleaching is the primary factor that increases potential extinction risk for *A. brevis.* It listed factors that reduce potential extinction risk for *A. brevis* including the fact that it occupies a variety of habitat types and is broadly distributed, both latitudinally and longitudinally, in the Indo-Pacific.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. brevis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is from the Red Sea and western Indian Ocean to American Samoa in the central Pacific. Its geographic distribution moderates vulnerability to extinction because some

areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from one to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes all coral reef habitats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. brevis* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. brevis* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. brevis'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to likely become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Acanthastrea brevis'* distribution from the western Indian Ocean to the central Pacific across is spread over a vast area, approximately half of the Indo-Pacific region. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Acanthastrea brevis'*s absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. brevis* is not warranted for listing at this time under any of the listing factors.

Acanthastrea hemprichii

Introduction

The SRR and SIR provided the following information on *A. hemprichii'*s morphology and taxonomy. Morphology was described as encrusting to massive and frequently over one meter across, and the taxonomy was described as having no taxonomic issues but being similar in appearance to *Acanthastrea echinata, Acanthastrea bowerbanki,* and *Acanthastrea hillae.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *A. hemprichii* and a low to moderate level of species identification uncertainty. Veron (2014) states that *A. hemprichii* is usually distinctive and Veron (2000; 2014) considers the species valid, thus we conclude it can be identified by experts and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. hemprichii'*s distribution, habitat, and depth range. *Acanthastrea hemprichii'*s distribution extends from the Red Sea and east Africa to the central Indo-Pacific and central Pacific, it occupies most reef habitats, and its depth range is from two to 20 m depth.

Public comments did not provide any new or supplemental information on *A. hemprichii'*s distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 47 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 23.

Demographic Information

The SRR and SIR reported *A. hemprichii'*s abundance as uncommon.

Public comments did not provide any new or supplemental information on *A. hemprichii'*s abundance. We gathered supplemental information, including Veron (2014), which reports that *A. hemprichii* occupied 11.4 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.47 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as

''common,'' and overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *Acanthastrea hemprichii,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. hemprichii* occurs in many areas affected by these broad changes, and likely has some susceptibility to local and global threats, we conclude it has likely declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. hemprichii's* life history. Although specific larval descriptions have not been published for this species, the larvae of three other *Acanthastrea* species studied do not contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the above-described biological information.

Susceptibility to Threats

To describe *A. hemprichii's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acanthastrea* of ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *A. hemprichii's* threats. *Acanthastrea hemprichii* was relatively unaffected during the 2002 bleaching event on the Great Barrier Reef. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. hemprichii.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. hemprichii's* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and predation, low vulnerability to sedimentation, sea level rise, and collection and trade, and unknown susceptibility for nutrients.

Public comments did not provide any new or supplemental information on *A. hemprichii's* threats. We gathered supplemental species-specific and genus-level information on this species' threat susceptibilities. *Acanthastrea hemprichii* was not rated as moderately or highly susceptible to bleaching or disease by Carpenter *et al.* (2008), but they did not have species-specific data. Done *et al.* (2003b) reported no bleaching in *A. hemprichii* on the GBR in 2002. Eight of 14 species of Mussidae bleached with six to 26% of colonies bleached, and for species in other families, as much as 80% of colonies bleached. Based on genus-level and species-specific information described above, *A. hemprichii* likely has some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, nutrients, sedimentation, sea level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibility of *A. hemprichii* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. hemprichii.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *Acanthastrea hemprichii* occurs in 47 Indo-Pacific ecoregions that encompass 30 countries' EEZs. The 30 countries are Australia, China, Djibouti, Egypt, Eritrea, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (Andaman and Nicobar Islands), Indonesia, Israel, Japan, Jordan, Kenya, Madagascar, Malaysia, Marshall Islands, Myanmar, Papua New Guinea, Philippines, Saudi Arabia, Seychelles, Solomon Islands, Somalia, Sudan, Taiwan, Tanzania, Thailand, Vietnam, and Yemen. The regulatory mechanisms relevant to *A. hemprichii,* first described as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (20 percent with three percent limited in scope), coral collection (47 percent with 20 percent limited in scope), pollution control (43 percent with 10 percent limited in scope), fishing regulations on reefs (87 percent with 17 percent limited in scope), and managing areas for protection and conservation (90 percent with 10 percent limited in scope). The most common regulatory mechanisms in place for *A. hemprichii* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are somewhat common for the species, but 20 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. hemprichii.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that high susceptibility to bleaching is the primary factor that increases potential extinction risk for *A. hemprichii.* It listed factors that reduce potential extinction risk for *A. hemprichii* are includes the fact that it occupies a variety of habitat types and is broadly distributed, both latitudinally and longitudinally, in the Indo-Pacific.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed

to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. hemprichii,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Red sea and western Indian Ocean and many in the central Indo-Pacific and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from two to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes most reef habitats. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. hemprichii* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. hemprichii* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. hemprichii's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Acanthastrea hemprichii*'s distribution includes the Red Sea and east coast of Africa, plus many of the coral reef ecoregions in the central Indo-Pacific and central Pacific Ocean includes and is spread over a vast area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Acanthastrea hemprichii*'s absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. hemprichii* is not warranted for listing at this time under any of the listing factors.

Acanthastrea ishigakiensis

Introduction

The SRR and SIR provided the following information on *A. ishigakiensis'* morphology and taxonomy. Morphology was described as massive and usually hemispherical and often more than 0.5 meters across, and taxonomy was described as having no taxonomic issues but being similar in appearance to *Acanthastrea hillae* and *Symphyllia erythraea*.

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *A. ishigakiensis,* but that there is a moderate level of species identification uncertainty for this species. Veron (2014) states that *A. ishigakiensis* is readily confused with *A. hillae,* but Veron (2000; 2014) also considers the species valid, thus we conclude it can be identified by experts and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *Acanthastrea ishigakiensis'* distribution, habitat, and depth range. *Acanthastrea ishigakiensis'* distribution extends from the Red Sea and east coast of Africa to the central Pacific, but excludes Australia. Its habitat includes upper reef slopes, lagoons and other areas protected from wave action, in depths from one to 15 m depth.

Public comments provided the following information on *A. ishigakiensis'* distribution. One public

comment stated that R.H. Randall recalls seeing this species in Guam at 60 m deep. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 25 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 19.

Demographic Information

The SRR and SIR reported *A. ishigakiensis'* abundance as uncommon but conspicuous.

Public comments did not provide any new or supplemental information on *A. ishigakiensis'* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. ishigakiensis* occupied 2.9 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.3 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was described as ''uncommon but conspicuous.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. ishigakiensis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 34 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. ishigakiensis* occurs in many areas affected by these broad changes, and likely has some susceptibility to local and global threats, we conclude it has likely declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the lack of species specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. ishigakiensis'* life history. Although specific larval descriptions have not been published for this species, the larvae of three other *Acanthastrea* species studied do not contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis. The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the above-described biological information.

Susceptibility to Threats

To describe *A. ishigakiensis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acanthastrea* of ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. ishigakiensis.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. ishigakiensis'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and predation, low vulnerability to sedimentation, sea level rise, and collection and trade, and unknown susceptibility to nutrients.

Public comments did not provide any new or supplemental information on *A. ishigakinesis'* threats susceptibilities. We gathered supplemental species-specific and genus-level information on this species' threat susceptibilities. *Acanthastrea ishigakiensis* was not rated as moderately or highly susceptible to bleaching or disease by Carpenter *et al.* (2008), but they did not have species-specific data. No species-specific information is available for the susceptibility of *A. ishigakiensis* to any threat. Based on genus-level information described above, *A. ishigakiensis* likely has some susceptibility to ocean warming, disease, ocean acidification, trophic effects of fishing, nutrients, sedimentation, sea level rise, predation, and low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. ishigakiensis.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm *A. ishigakiensis* occurs in 24 Indo-Pacific ecoregions that encompass 25 countries' EEZs. The 25 countries are Egypt, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Israel, Japan, Jordan, Kenya, Madagascar, Malaysia, Mauritius, Mozambique, Papua New Guinea, Philippines, Saudi Arabia, Seychelles, Solomon Islands, Sudan, Tanzania, United States (CNMI, Guam), Vanuatu, Vietnam, and Yemen. Regulatory mechanisms relevant to *A. ishigakiensis,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (21 percent with eight percent limited in scope), coral collection (63 percent with 25 percent limited in scope), pollution control (50 percent with 13 percent limited in scope), fishing regulations on reefs (88 percent with 21 percent limited in scope), and managing areas for protection and conservation (100 percent with eight percent limited in scope). The most common regulatory mechanisms in place for *A. ishigakiensis* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are somewhat common the species, but 25 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. ishigakiensis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that high susceptibility to bleaching is the primary factor that increases potential extinction risk for *A. ishigakiensis.* It listed factors that reduce potential extinction risk including the fact that *A. ishigakiensis* is broadly distributed, both latitudinally and longitudinally, in the Indo-Pacific.

Subsequent to the proposed rule, we received and gathered supplemental

species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. ishigakiensis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Red Sea and western Indian Ocean and many in the western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from one to 15 meters, and there is one anecdotal record from Guam of this species observed at 60 meters depth. On one hand, its depth range may moderate vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. On the other hand, its depth range may exacerbate vulnerability to extinction over the foreseeable future if the species occurs predominantly in the shallower portion of its depth range, since those areas will have higher irradiance and thus be more severely affected by warming-induced bleaching. Its habitat includes upper reef slopes, lagoons, and other areas protected from wave action. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. ishigakiensis* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on wide geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. ishigakiensis* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. ishigakiensis'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Acanthastrea ishigakiensis'* distribution includes the Red Sea and most of the western Indian Ocean along with many of the coral reef ecoregions in the western and central Pacific. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Acanthastrea ishigakiensis'* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. ishigakiensis* is not warranted for listing at this time under any of the listing factors.

Acanthastrea regularis

Introduction

The SRR and SIR provided the following information on *A. regularis'* morphology and taxonomy. Morphology was described as massive and with corallites united by fused compound walls, and taxonomy was described as having no taxonomic issues but being similar in appearance to *Montastraea* and *Favia* underwater.

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *A. regularis,* and a moderate level of species identification uncertainty for this species. Veron (2014) states that *A.*

regularis is readily confused with *Favia* species but Veron (2000; 2014) considers the species valid, thus we conclude it can be identified by experts and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *A. regularis'* distribution, habitat, and depth range. *Acanthastrea regularis'* distribution is restricted, and includes the Coral Triangle and some islands in the west and central Pacific. Its habitat includes most reef habitats, including upper reef slopes, mid-slopes, lower reef crests, reef flats, and lagoons in depths from two to 20 m.

Public comments provided the following information on distribution of *A. regularis.* One public comment stated that *A. regularis* is likely in the Marianas. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 17 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 16.

Demographic Information

The SRR and SIR reported *A. regularis'* abundance as uncommon.

Public comments did not provide any new or supplemental information on *A. regularis'* abundance. We gathered supplemental information, including Veron (2014), which reports that *A. regularis* occupied 5.1 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.21 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *A. regularis,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *A. regularis* occurs in many areas affected by these broad changes, and likely has some susceptibility to local and global threats, we conclude it has likely declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *A. regularis'* life history. Although specific larval descriptions have not been published for this species, the larvae of three other *Acanthastrea* species studied do not contain zooxanthellae that can supplement maternal provisioning with energy sources provided by their photosynthesis.

The public comments did not provide new or supplemental information, and we did not find new or supplemental information on the above-described biological information.

Susceptibility to Threats

To describe *A. regularis'* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Acanthastrea* of ocean warming, acidification, disease, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *A. regularis.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *A. regularis'* vulnerabilities as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, and trophic effects of fishing, and predation, low vulnerability to sedimentation, sea level rise, and collection and trade, and unknown vulnerability to nutrients.

Public comments did not provide any new or supplemental information on *A. regularis'* threat susceptibilities. We gathered supplemental species-specific and genus-level information on this species' threat susceptibilities. *Acanthastrea regularis* was not rated as moderately or highly susceptible to bleaching or disease by Carpenter *et al.* (2008), but they did not have species-specific data. Based on genus-level information presented above, *A. regularis* likely has some susceptibility to ocean warming, disease, ocean acidification, trophic effects of fishing, nutrients, sedimentation, sea-level rise, and predation, and low susceptibility to collection and trade.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *A. regularis.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *A. regularis* occurs in 17 Indo-Pacific ecoregions that encompass eight countries' EEZs. The eight countries are Australia, Federated States of Micronesia, Fiji, Indonesia, Malaysia, Papua New Guinea, Philippines, and Vietnam. The regulatory mechanisms relevant to *A. regularis,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (25 percent with none limited in scope), coral collection (63 percent with 25 percent limited in scope), pollution control (63 percent with 25 percent limited in scope), fishing regulations on reefs (100 percent with 13 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *A. regularis* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 25 percent of those laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *A. regularis.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the

baseline environment and future projections of threats. The SRR stated that high susceptibility to bleaching is the primary factor that increases potential extinction risk for *A. regularis*. This species occupies a variety of habitat types and extends down to 20 meters depth which are factors listed in the SRR that reduce potential extinction risk.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *A. regularis,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. *Acanthastrea regularis* is not highly susceptible to any of the nine most important threats, although it has some susceptibility to each. Its geographic distribution is mostly constrained to parts of the Coral Triangle and western equatorial Pacific Ocean—areas which are projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. For a species that is highly susceptible to climate change related threats, this range would exacerbate vulnerability to extinction but *A. regularis* is not highly susceptible susceptibility. Vulnerability to extinction may be exacerbated by the severe nature of local threats predicted within its range, however, *A. regularis* is not highly susceptible to any local sources of impact either. Its depth range is from two to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes upper reef slopes, mid-slopes, lower reef crests, reef flats, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *A. regularis* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *A. regularis* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *A. regularis'* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) While *A. regularis'* distribution is mostly constrained to parts of the Coral Triangle and western equatorial Pacific Ocean, its distribution is spread over a large area across the Coral Triangle, the Marianas archipelago, Palau, Micronesia, and Fiji. While some areas within its range are projected to be affected by warming and acidification, *A. regularis* is not highly susceptible to ocean warming, acidification, or any of the nine most important threats. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Acanthastrea regularis'* absolute abundance is at least millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *A. regularis* is not warranted for listing at this time under any of the listing factors.

Genus Barabattoia

Genus Introduction

The family Favidae includes 24 genera, more than any other family, including *Barabattoia. Barabattoia* contains two species, *B. laddi* and *B. amicorum*. Colonies are massive or encrusting. The SRR and SIR provided no genus-level introductory information on *Barabattoia*.

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Barabattoia. Barabattoia amicorum* has low-to-moderate bleaching susceptibility with an unknown degree of resultant mortality (Bruno *et al.,* 2001).

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Barabattoia.* We gathered supplemental information that provided the following. With regard to thermal stress, *B. amicorum* experienced low to moderate bleaching in Palau in 2000, but mortality was not reported (Bruno *et al.,* 2001). Forty-eight percent of all colonies of all species were bleached, and bleaching of different genera and species ranged from none to very high, and mortality of different genera and species ranged from none to near 100 percent (Bruno *et al.,* 2001). There is no information on the susceptibilities of *Barabattoia* to any other threats.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Barabattoia* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. The one available study on the effects of ocean warming on *Barabattoia* found that *B. amicorum* in Palau experienced low to moderate bleaching (Bruno *et al.,* 2001). Even though there is only one study available, since there are only two species within the genus *Barabattoia,* it is reasonable to make inferences about the susceptibility of *B. laddi* to ocean warming. Although there is no other genus-level or species-specific information on the susceptibilities of *Barabattoia* species to ocean warming, disease, and acidification, the SRR rated them as ''high'' or ''medium-high'' importance to corals. Thus, we conclude that an unstudied *Barabattoia* species is likely to have some susceptibility to ocean warming, disease, and acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Barabattoia* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation, nutrients, and sea-level rise as ''low-medium'' importance to corals overall. Although there is no genus-level or species-specific information on the susceptibilities of *Barabattoia* species to sedimentation and nutrients, there is no information suggesting they are not susceptible to these threats. Thus we conclude that an unstudied *Barabattoia* species is likely to have some susceptibility to sedimentation and nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Barabattoia* species is likely to have some susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. Because there is no information on the effects of predation and ornamental trade on *Barabattoia,* we conclude that *Barabattoia* has some susceptibility to predation and ornamental trade.

In conclusion, an unstudied *Barabattoia* species is likely to have some susceptibility to ocean warming, disease, acidification, disease, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade.

Barabattoia laddi

Introduction

The SRR and SIR provided the following information on *B. laddi*'s morphology and taxonomy: the morphology was described as clusters of tubular corallites, and the taxonomy was described as having no taxonomic issues but being similar in appearance to *B. amicorum* and *Montastraea* sp.

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *B. laddi,* and that there is a low to moderate level of species identification uncertainty for this species, since it is so rare that surveyors get little experience with it. Veron (2014) states that *B. laddi* is distinctive and Veron (2000; 2014) considers the species valid, thus we conclude it is sufficiently distinctive to be identified by experts, and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *B. laddi*'s distribution, habitat, and depth range. *Barabattoia laddi*'s range is somewhat restricted, centered on the Coral Triangle and extending to the central Pacific including perhaps French Polynesia. The SRR and SIR described *B. laddi*'s habitat as recorded only from shallow lagoons, and the depth range as 0 to 10 m. The public comments provided the following details. One public comment stated that *B. laddi* tentatively occurs in Apra Harbor, Guam. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 22 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 15. Surveys in Indonesia record the species at multiple sites with depths greater than 10 m (Bigot and Amir, 2009; Donnelly *et al.,* 2003; Turak and DeVantier, 2003) and surveys in the Maldives record the species at multiple sites with depths up to 20 m (Bigot and Amir, 2009; Donnelly *et al.,* 2003; Turak and DeVantier, 2003). These surveys were done in different habitats, including reef slopes and lagoons. Thus, based on all the available information, *B. laddi*'s habitat includes at least upper reef slopes, mid-slope terraces, and lagoons in depths ranging from zero to 20 m.

Demographic Information

The SRR and SIR reported *B. laddi*'s abundance as rare. The public comments did not provide any new or supplemental information on *B. laddi*'s abundance, but we gathered supplemental information, including Veron (2014), which reports that *B. laddi* occupied 5.2 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.33 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was described as ''rare.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction

above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *B. laddi,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 35 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *B. laddi* occurs in many areas affected by these broad changes, and likely has some susceptibility to local and global threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on the limited species specific information.

Other Biological Information

The SRR and SIR provided the following information on *B. laddi*'s life history. The reproductive characteristics of *B. laddi* have not been determined. There is only one other species in the genus, *B. amoricum,* which is a hermaphroditic broadcast spawner that participated in multispecies spawning events at Magnetic Island and Orpheus Island on the Great Barrier Reef. The larvae of *B. amoricum* do not contain zooxanthellae that might supplement maternal provisioning with energy from photosynthesis. The public comments and information we gathered provided no new or supplemental biological information.

Susceptibility to Threats

To describe *B. laddi*'s threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Barabattoia* of ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *B. laddi.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *B. laddi*'s vulnerabilities as follows: Moderate vulnerability to ocean warming, disease, acidification, trophic effects of fishing, and nutrients, low vulnerability to sedimentation, sea level rise, and collection and trade, and unknown vulnerability to predation.

Public comments did not provide any new or supplemental information on *B. laddi*'s threats. We gathered the following species-specific supplemental information on this species' threat susceptibilities. *Barabattoia laddi* has not been rated as moderately or highly susceptible to bleaching or disease, but this rating is not based on species-specific data (2008). No other species-specific information is available for the susceptibility of *B. laddi* to any other threat. Based on the available genus-level information described above, *B. laddi* likely has some susceptibility to ocean warming, disease, acidification, trophic effects of fishing, sedimentation, nutrients, predation, sea-level rise, and collection and trade. The available information does not support more precise ratings of the susceptibility of *B. laddi* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *B. laddi.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm *B. laddi* occurs in 22 Indo-Pacific ecoregions that encompass 15 countries' EEZs. The 15 countries are Australia, Brunei, China, France (French Pacific Island Territories), Indonesia, Malaysia, Marshall Islands, Palau, Papua New Guinea, Philippines, Solomon Islands, Taiwan, United Kingdom (Pitcairn Islands), United States (PRIAs), and Vietnam. The regulatory mechanisms relevant to *B. laddi,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (33 percent with none limited in scope), coral collection (67 percent with 33 percent limited in scope), pollution control (47 percent with 20 percent limited in scope), fishing regulations on reefs (93 percent with 27 percent limited in scope), and managing areas for protection and conservation (100 percent with 13 percent limited in scope). The most common regulatory mechanisms in place for *B. laddi* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat common for the species, but 33 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *B. laddi.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk are the species' limited western Pacific distribution, its occurrence in shallow lagoons and its rare abundance.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *B. laddi,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. *Barabattoia laddi* has not been rated highly susceptible to ocean warming or disease, the two most important threats to corals in this final rule, nor is it highly susceptible to the other threats identified in this rule. Its geographic distribution includes coral reef ecoregions in the western and central Pacific Ocean from Malaysia to the Pitcairn Islands. Its geographic distribution in combination with its low to moderate susceptibility to threats, moderates vulnerability to extinction because it is spread across a large area.

While its range includes the Coral Triangle, it also includes some areas projected to have less than average warming and acidification over the foreseeable future, including the central Pacific so portions of the population in these areas will be less exposed to severe conditions, plus those that are exposed may not show negative responses because of low or moderate susceptibility. Its depth range is from zero to 20 meters. This would exacerbate vulnerability to extinction over the foreseeable future for a species with high susceptibility to the nine most important threats, but *B. laddi* is not highly susceptible. Its habitat includes at least upper reef slopes, mid-slope terraces, and lagoons. Its absolute abundance of at least tens of millions of colonies, combined with low to moderate susceptibility and spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *B. laddi* was proposed for listing as threatened because of: Moderate vulnerability to ocean warming (ESA Factor E), disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on moderate geographic distribution and shallow depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *B. laddi* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *B. laddi's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Barabattoia laddi's* distribution includes many of the coral reef ecoregions in the western and central Pacific, from Malaysia as far east as the Pitcairn Islands, and is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Barabattoia laddi's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) The best available information suggests that *Barabattoia laddi* is not highly susceptible to any of the nine threats identified in this rule, so even if a proportion of its population overlaps in time and space with a threat event, many colonies may not exhibit a negative response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *B. laddi* is not warranted for listing at this time under any of the listing factors.

Genus Caulastrea

Genus Introduction

The family Favidae includes 24 genera, more than any other family, including *Caulastrea.* The genus *Caulastrea* contains five species, including *C. echinulata.* Colonies are branching, and branches may be short or close together. The SRR and SIR provided no genus-level introductory information on *Caulastrea.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Caulastrea. Caulastrea furcata* was not observed to bleach in 1998 in Palau.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Caulastrea.* We gathered supplemental information which provided the following details. In a study of warming-induced bleaching of over 100 coral species on the GBR in 2002, approximately 10 percent of *C. furcata* colonies were affected by bleaching, making it one of the least affected species in the study (Done *et al.,* 2003b). There is no information on the susceptibilities or vulnerabilities of *Caulastrea* to any other threats.

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Caulastrea* species to ocean warming, disease, acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. *Caulastrea* has shown low levels or no thermal-induced bleaching in two studies, one reported in the SRR, and one reported above (Done *et al.,* 2003b). Thus, we conclude that an unstudied *Caulastrea* is likely to have low susceptibility to ocean warming. Although there is no other genus-level or species-specific information on the susceptibilities of *Caulastrea* species to disease and ocean acidification, the SRR rated them as ''high'' and ''medium-high'' importance to corals, respectively. Thus, we conclude that an unstudied *Caulastrea*

species is likely to have some susceptibility to disease and ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Caulastrea* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation and nutrients as ''low-medium'' importance to corals overall. Although there is no genus-level or species-specific information on the susceptibilities of *Caulastrea* species to sedimentation and nutrients, there is no information suggesting they are not susceptible to these threats. Thus, we conclude that an unstudied *Caulastrea* species is likely to have some susceptibility to sedimentation and nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Caulastrea* species is likely to have some susceptibility to sea-level rise. The SRR rated predation and ornamental trade (referred to in the proposed rule as Collection and Trade) as ''low'' importance to corals overall. There is no information on the effects of predation and collection and trade on *Caulastrea,* thus we conclude that *Caulastrea* likely has some susceptibility to predation and collection and trade.

In conclusion, an unstudied *Caulastrea* species is likely to have low susceptibility to ocean warming, and some susceptibility to disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade.

Caulastrea echinulata

Introduction

The SRR and SIR provided the following information on *C. echinulata's* morphology and taxonomy. Morphology was described as elongated, closely compacted corallites on the ends of branches, and taxonomy was described as having no taxonomic issues but being similar in appearance to *Caulastrea furcata.*

The public comments and information we gathered did not provide any new or supplemental information on morphology, and indicated that there is moderate taxonomic uncertainty for *C. echinulata* and a moderate level of species identification uncertainty for this species. Veron (2014) states that *C. echinulata* is commonly confused with *C. furcata,* but the species can be identified by experts (Fenner, 2014b), thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *C. echinulata's* distribution, habitat, and depth range. The distribution includes the Coral Triangle and GBR and a few nearby areas. Its primary habitat is horizontal substrates protected from wave action and with turbid water, which can occur in a variety of reef habitats, including at least upper reef slopes, mid-slopes, and lagoons. Its depth range is one to 20 meters.

The public comments did not provide any new or supplemental information on *C. echinulata's* distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 15 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 12.

Demographic Information

The SRR and SIR reported *C. echinulata's* abundance as uncommon. The public comments did not provide any new or supplemental information on *C. echinulata's* abundance. We gathered supplemental information, including Veron (2014), which reports that *C. echinulata* occupied 0.34 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.3 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare,'' and overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *C. echinulata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *C. echinulata* occurs in many areas affected by these broad changes, and likely has some susceptibility to local and global threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited species-specific information.

Other Biological Information

The public comments and information we gathered did not provide any other biological information on this species.

Susceptibility to Threats

The SRR and SIR provided the following species-specific information on *C. echinulata's* threats. Trade in *C. echinulata* is heavy. From 1999 to 2009, gross exports averaged 8,713 specimens annually, with the vast majority originating in Indonesia. Take quotas over that same period increased from 9,000 in 1999 to 10,670 in 2010. Some general (*i.e.,* family-level and coral-level) information was also provided for the effects of ocean warming, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *C. echinulata.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *C. echinulata's* vulnerabilities as follows: Moderate vulnerability to ocean warming, disease, acidification, trophic effects of fishing, and nutrients, low vulnerability to sea

level rise and collection and trade, and unknown vulnerability to sedimentation and predation.

Public comments did not provide any new or supplemental information on *C. echinulata*'s threat susceptibilities. We gathered the following species-specific and genus-level supplemental information on this species' threat susceptibilities. *Caulastrea echinulata* has not been rated as moderately or highly susceptible to bleaching or disease, but this rating is not based on species-specific data (Carpenter *et al.,* 2008). Based on genus information described above, *C. echinulata* is likely to have low susceptibility to ocean warming, and likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *C. echinulata* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *C. echinulata.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm *C. echinulata* occurs in 15 Indo-Pacific ecoregions that encompass 12 countries' EEZs. The 12 countries are Australia, Brunei, China, Fiji, Indonesia, Japan, Malaysia, Palau, Papua New Guinea, Philippines, Solomon Islands, and Taiwan. The regulatory mechanisms relevant to *C. echinulata,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (25 percent with none limited in scope), coral collection (67 percent with 42 percent limited in scope), pollution control (42 percent with 8 percent limited in scope), fishing regulations on reefs (100 percent with 25 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *C. echinulata* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 42 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *C. echinulata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *C. echinulata* are its uncommon abundance and that it is heavily traded. It listed factors that reduce potential extinction risk including that the species distribution is broad latitudinally, and that its preferred habitat type (turbid conditions) may provide some refuge from global threats such as bleaching (to which it may have relatively low susceptibility).

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of C. *echinulata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. *Caulastrea echinulata* has low susceptibility to ocean warming-induced bleaching, based on species-specific and genus-level information. Its geographic distribution is mostly constrained to parts of the Coral Triangle and western equatorial Pacific Ocean—areas which are projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. For a species that is highly susceptible to climate change related threats, this range would exacerbate vulnerability to extinction but *C. echinulata* has low susceptibility. Vulnerability to extinction may be exacerbated by the severe nature of local threats predicted within its range, however, *C. echinulata* is not highly susceptible to any local sources of impact either. Its depth range is from one to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes horizontal substrates protected from wave action and with turbid water, which can occur on at least upper reef slopes, mid-slopes, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. In addition, turbidity can mitigate against the effects of high irradiance by blocking it from the water column in turbid environments. Its absolute abundance of at least millions of colonies, combined with its low susceptibility to ocean warming, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. Further, its absolute abundance of at least tens of millions of colonies also provides buffering capacity against collection pressures for the purposes of international trade.

Listing Determination

In the proposed rule using the determination tool formula, *C. echinulata* was proposed for listing as threatened because of: Moderate vulnerability to ocean warming (ESA Factor E), disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *C. echinulata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity

of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *C. echinulata*'s spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Caulastrea echinulata*'s low sensitivity to bleaching and depth range down to 20 m, along with its preference for turbid water habitat, all combine to provide refuge from thermal stress and may decrease synergistic impacts from other threats;

(2) While *Caulastrea echinulata*'s distribution is mostly constrained to parts of the Coral Triangle and western equatorial Pacific Ocean, its distribution is spread over a large area across the Coral Triangle, southern Japan and Fiji. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(3) *Caulastrea echinulata*'s absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. Its absolute abundance also provides buffering capacity against collection pressures for purposes of international trade. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and worsen in severity and the species' exposure to the threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *C. echinulata* is not warranted for listing at this time under any of the listing factors.

Genus Euphyllia

Genus Introduction

The family Euphyllidae contains five genera, all in the Indo-Pacific, including *Euphyllia.* The genus *Euphyllia* contains eight species. The SRR and SIR provided no genus-level introductory information on *Euphyllia.*

Genus Susceptibility to Threats

The SRR and SIR provided the following information on the threat susceptibilities of the genus *Euphyllia. Euphyllia* species experienced high bleaching, but mortality is unknown, following the 1997/1998 mass bleaching event in Palau. In Indonesia, the family Euphyllidae had no prevalence of coral disease. When raised in acidified conditions, *Euphyllia paradivisa* showed little change in skeletal morphology, while *Galaxea* and *Stylophora* showed substantial skeletal change and *Pocillopora* died. The SRR reported that abundance of *Euphyllia* recruits was enhanced in areas where fish were excluded, indicating it may be more tolerant of the shaded conditions created by increased algal biomass in overfished areas. *Euphyllia divisa* was fairly sensitive to exposure to cyanide; concentrations at or below those used in cyanide fishing caused a progressive tissue detachment, microbial infection, and death. Large patches of *Euphyllia* species can form in turbid areas in Indonesia, suggesting a toleration of high sediment loads. *Euphyllia cristata* is heavily used in the aquarium trade with species-specific exports or quotas from Indonesia, Fiji, Malaysia, and Tonga. Actual reported annual exports from Indonesia alone averaged over 36,000 pieces from 2000 to 2008.

The public comments did not provide any new or supplemental information on the threat susceptibilities of the genus *Euphyllia,* except for a public comment on a study cited in the SRR on the effects of ocean acidification on *E. paradivisa,* which is discussed in the description of that species below. We gathered supplemental information which provided the following. The 1998 Palau bleaching event affected at least three *Euphyllia* species (*E. divisa, E. glabrescens,* and *E. paraancora*), and all three species reported high levels of bleaching (Bruno *et al.,* 2001). *Euphyllia* was the largest live trade genus from 1985 to 1997 (Green and Shirley, 1999) and in 1999 (Bruckner, 2001). There is no other supplemental information on the effects of threats on the genus *Euphyllia.*

Genus Conclusion

Based on the information from the SRR, SIR, public comments, and supplemental information, we can make the following inferences about the susceptibilities of an unstudied *Euphyllia* species to ocean warming, disease, ocean acidification, sedimentation, nutrients, trophic effects of fishing, sea-level rise, predation, and collection and trade. The SRR rated ocean warming and disease as ''high'' importance, and ocean acidification as ''medium-high'' importance, to corals. These were rated as the three most important threats to reef-building corals overall. The one available study reporting the effects of ocean warming on *Euphyllia* reported high levels of bleaching. We conclude that an unstudied *Euphyllia* species is likely to have high susceptibility to ocean warming. Family Euphyllidae was found to be disease-free in Indonesia. However, this single study provides inadequate information to conclude low susceptibility to disease, thus we conclude that an unstudied *Euphyllia* species is likely to have some susceptibility to disease. The one available study on a *Euphyllia* species in acidified water did not show effects on skeletal growth. This is the Tibbits (2009) study on *E. paradivisa* that a public comment stated is flawed. As described below in the *E. paradivisa* species description below, we reviewed the study and we concur that the methods were flawed, thus the study does not provide an adequate basis to conclude low susceptibility. Therefore, we conclude that an unstudied *Euphyllia* species is likely to have some susceptibility to ocean acidification.

The SRR rated the trophic effects of fishing as ''medium'' importance, the fourth most important threat to corals overall. This threat was not addressed at the genus or species level in the SRR or SIR, because it is an ecosystem-level process. That is, removal of herbivorous fish from coral reef systems by fishing

alters trophic interactions by reducing herbivory on algae, thereby providing a competitive advantage for space to algae over coral. Thus, the SRR did not discuss this threat in terms of coral taxa, as its effects are difficult to distinguish between coral genera and species. Therefore, an unstudied *Euphyllia* species is likely to have some susceptibility to the trophic effects of fishing.

The SRR rated sedimentation and nutrients as ''low-medium'' importance to corals overall. One study reported *Euphyllia* tolerates turbid waters, suggesting tolerance of sedimentation, and one study suggested that *Euphyllia* may be tolerant of increased algae due to nutrients. However, these single studies provide inadequate information to conclude low susceptibilities, thus we conclude that an unstudied *Euphyllia* species is likely to have some susceptibility to sedimentation and nutrients. Sea-level rise was not addressed at the genus or species level in the SRR or SIR. Increasing sea levels may increase land-based sources of pollution due to inundation, resulting in changes to coral community structure, thus an unstudied *Euphyllia* species is likely to have some susceptibility to sea-level rise. Although there is no genus-level or species-specific information on the susceptibility of *Euphyllia* species to predation, there is no information suggesting they are not susceptible to these threats. Thus, we conclude that an unstudied *Euphyllia* species is likely to have some susceptibility to predation. Some *Euphyllia* species are heavily exploited in the ornamental trade, thus we conclude that an unstudied *Euphyllia* species is likely to have high susceptibility to collection and trade.

In conclusion, an unstudied *Euphyllia* species is likely to have high susceptibility to ocean warming and collection and trade, and some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, and predation.

Euphyllia cristata

Introduction

The SRR and SIR provided the following information on *E. cristata*'s morphology and taxonomy. Morphology was described as branching separate corallites without a shared wall but close together, and solitary polyps are common, and taxonomy was described as having no taxonomic issues.

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *E. cristata,* and a moderate level of species identification uncertainty. Veron (2014) states that *E. cristata* is sometimes confused with *Euphyllia glabrescens.* However, it can be identified by experts (Fenner, 2014b), thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *E. cristata*'s distribution, habitat, and depth range. *Euphyllia cristata*'s distribution is the central Indo-Pacific and the central Pacific. Its habitat includes most coral reef environments, and its depth range is one to 35 meters.

Public comments did not provide any new or supplemental information on *E. cristata*'s distribution. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 37 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 12. Public comments and information we gathered did not provide any more information on *E. cristata*'s habitat and depth range.

Demographic Information

The SRR and SIR reported *E. cristata*'s abundance as uncommon.

Public comments did not provide any new or supplemental information on *E. cristata*'s abundance. We gathered supplemental information, including Veron (2014), which reports that *E. cristata* occupied 12.1 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.33 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common,'' and overall abundance was described as ''uncommon but conspicuous.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *E. cristata,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *E. cristata* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on limited species specific information.

Other Biological Information

The public comments and information we gathered did not provide any other biological information on this species.

Susceptibility to Threats

The SRR and SIR provided the following species-specific information on *E. cristata*'s threats. *Euphyllia cristata* is heavily used in the aquarium trade with species-specific exports or quotas from Indonesia, Fiji, Malaysia, and Tonga. Actual reported annual exports from Indonesia alone averaged over 36,000 pieces from 2000 to 2008. Genus-level information is provided for the effects on *Euphyllia* of ocean warming, disease, ocean acidification, land-based sources of pollution (sedimentation, nutrients, toxins, and salinity), predation, and collection/trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *E. cristata.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *E. cristata*'s vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, predation, and collection and trade.

Public comments did not provide any new or supplemental information on *E. cristata*'s threat susceptibilities. We gathered supplemental species-specific and genus-level information on this

species' threat susceptibilities. *Euphyllia cristata* was not rated as moderately or highly susceptible to bleaching or coral disease by Carpenter *et al.* (2008), but they did not have species-specific data. There are no studies of the effects of any threat on this species. Based on genus-level information presented above, *E. cristata* is likely to have high susceptibility to ocean warming and collection and trade, and some susceptibility to disease, ocean acidification, trophic effects of fishing, nutrients, sedimentation, sea-level rise, and predation.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *E. cristata.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm *E. cristata* occurs in 37 Indo-Pacific ecoregions that encompass 21 countries' EEZs. The 21 countries are Australia, Brunei, China, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), Indonesia, Japan, Malaysia, Maldives, Myanmar, Palau, Papua New Guinea, Philippines, Solomon Islands, Taiwan, Thailand, Timor-Leste, United States (CNMI, Guam), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *E. cristata,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (38 percent with five percent limited in scope), coral collection (62 percent with 29 percent limited in scope), pollution control (43 percent with 14 percent limited in scope), fishing regulations on reefs (100 percent with 14 percent limited in scope), and managing areas for protection and conservation (95 percent with none limited in scope). The most common regulatory mechanisms in place for *E. cristata* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 29 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *E. cristata.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase potential extinction risk for *E. cristata* include its heavy involvement in international trade combined with its rare existence but conspicuous colonies, suggesting it is vulnerable to overexploitation. *Euphyllia cristata* appears to be susceptible to bleaching. The SRR noted that its geographic distribution is moderate, although wider than its congeners under consideration in this review.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *E. cristata,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes many of the coral reef ecoregions from the northern Indian Ocean through the western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is from one to 35 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes most coral reef environments. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. Further, its absolute abundance of at least tens of millions of colonies also provides buffering capacity against collection pressures for the purposes of international trade.

Listing Determination

In the proposed rule using the determination tool formula approach, *E. cristata* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); moderate overall distribution (based on moderate geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *E. cristata* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *E. cristata's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Euphyllia cristata's* distribution in the northern Indian Ocean, central Indo-Pacific, and central Pacific is spread

over a vast area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future;

(2) *Euphyllia cristata's* absolute abundance is at least tens of millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. Its absolute abundance also provides buffering capacity against collection pressures for purposes of international trade. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

(3) *Euphyllia cristata* occurs from one to 35 meters of depth which provides vertical moderation of exposure to threats and increases the absolute area of potential occupancy within the species range, therefore buffering against extinction risk.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *E. cristata* is not warranted for listing at this time under any of the listing factors.

Euphyllia paraancora

Introduction

The SRR and SIR provided the following information on *E. paraancora's* morphology and taxonomy. Morphology was described as branching separate corallites without a shared wall, and tentacles have anchor-shaped ends. Taxonomy was described as having no taxonomic issues but tentacles are similar to *Euphyllia ancora,* and the skeleton is the same as *Euphyllia glabrescens, Euphyllia paraglabrescens,* and *Euphyllia paradivisa.*

Public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *E. paraancora,* but there is a low level of species identification uncertainty for this species. The species can be easily identified by experts, thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *E. paraancora's* distribution, habitat, and depth range. *Euphyllia paraancora* is found in the Coral Triangle, Taiwan, the Mariana Islands, New Caledonia and Vanuatu. The SIR reports that colonies found in Guam were in turbid environments. Its habitat includes reef environments protected from wave action, including at least upper reef slopes, mid-slopes, lower reef slopes, and lagoons, from three to 30 m deep.

One public comment confirmed the presence of *E. paraancora* in Guam. We gathered supplemental information, including Veron (2014), which reports that this species is confirmed in 19 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 15. *Euphyllia paraancora* has been reported in water as deep as 70 m (Carpenter *et al.,* 2008; Rooney *et al.,* 2012). Based on all the available information, its habitat includes least upper reef slopes, mid-slopes, lower reef slopes, lagoons, and mesophotic areas, from three to 70 m deep.

Demographic Information

The SRR and SIR reported *E. paraancora's* abundance as uncommon. However, it has reportedly been found in large monospecific stands at six to 8 m depth in Taiwan.

Public comments did not provide any new or supplemental information on *E. paraancora's* abundance. We gathered supplemental information that provides the following. *Euphyllia paraancora* has been reported from large monospecific stands at 60 to 70 m depth in Saipan (Rooney *et al.,* 2012). Veron (2014) reports that *E. paraancora* occupied 1.9 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.46 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''uncommon,'' and overall abundance was also described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *E. paraancora,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 36 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 14 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *E. paraancora* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible based on limited species specific information.

Other Biological Information

The public comments and information we gathered did not

provide any other biological information on this species.

Susceptibility to Threats

To describe *E. paraancora's* threat susceptibilities, the SRR and SIR provided the following species-specific information on *E. paraancora's* threats. *Euphyllia paraancora* and its congeners experienced high bleaching but mortality is unknown following the 1997/1998 mass bleaching event in Palau (Bruno *et al.,* 2001). *Euphyllia paraancora* in Taiwan contained both Clades C and D zooxanthellae, with Clade D primarily in stressful environments like shallow waters and reef edges. *Euphyllia paraancora* is specifically listed in the CITES databases with a 2008 annual export quota of ~ 5000 (up from 1000 in 2004) ''maricultured'' pieces from Indonesia although the meaning of ''maricultured'' is unclear. Genus-level information is provided for the effects on *Euphyllia* of ocean warming, ocean acidification, disease, land-based sources of pollution (sedimentation, nutrients, toxins, and salinity), predation, and collection/trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *E. paraancora.* We interpreted threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *E. paraancora's* vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and nutrients, and low vulnerability to sedimentation, sea level rise, and collection and trade.

Public comments did not provide any new or supplemental information on *E. paraancora's* threats susceptibilities. We gathered supplemental species-specific and genus-level information on this species' threat susceptibilities. *Euphyllia paraancora* was not rated as moderately or highly susceptible to bleaching or disease by Carpenter *et al.* (2008), but they did not have species-specific data. In Palau in 2000, *E. paraancora* had high levels of bleaching, but an unknown level of mortality. In that event, 48 percent of all coral colonies of all species were bleached, with bleaching of different genera and species ranging from none to very high, and mortality from none to near 100 percent (Bruno *et al.,* 2001). There are no other studies of the effects of any threat on this species. Combined with genus-level information presented above, *E. paraancora* is likely to have high susceptibility to ocean warming and collection and trade. Further based on genus level information, *E. paraancora* can be predicted to have some susceptibility to disease, ocean acidification, trophic effects of fishing, nutrients, sedimentation, sea-level rise, and predation.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *E. paraancora.* We received criticism of that approach in public comments and in response we present a species-specific analysis of regulatory mechanisms in this final rule. Records confirm that *Euphyllia paraancora* occurs in 19 Indo-Pacific ecoregions that encompass 16 countries' EEZs. The 16 countries Australia, Brunei, China, Federated States of Micronesia, France (French Pacific Island Territories), Indonesia, Japan, Malaysia, Palau, Papua New Guinea, Philippines, Solomon Islands, Taiwan, Timor-Leste, United States (CNMI, Guam), and Vietnam. The regulatory mechanisms relevant to *E. paraancora,* described first as the percentage of the above countries that utilize them to any degree, and second as the percentage of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (38 percent with none limited in scope), coral collection (63 percent with 25 percent limited in scope), pollution control (44 percent with 19 percent limited in scope), fishing regulations on reefs (100 percent with 19 percent limited in scope), and managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *E. paraancora* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 25 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *E. paraancora.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase potential extinction risk for *E. paraancora* include its heavy involvement in international trade combined with its rare existence but conspicuous colonies, suggesting it is vulnerable to overexploitation. The species appears bleaching-susceptible. Its geographic distribution is also somewhat restricted, centered in the threat-prone Coral Triangle Region.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *E. paraancora,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution occurs in the Coral Triangle, the western equatorial Pacific Ocean, the Mariana Islands, and New Caledonia. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range goes down to 70 meters which stretches into the mesophotic zone. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes at least upper reef slopes, mid-slopes, lower reef slopes, lagoons, and mesophotic areas. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its absolute abundance of at least millions of colonies, combined with spatial

variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. Further, its absolute abundance of at least tens of millions of colonies also provides buffering capacity against collection pressures for the purposes of international trade.

Listing Determination

In the proposed rule using the determination tool formula approach, *E. paraancora* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); wide overall distribution (based on moderate geographic distribution and wide depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *E. paraancora* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *E. paraancora's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus is not warranted for listing at this time, because:

(1) *Euphyllia paraancora's* depth distribution of three to 70 m is exceptionally broad and deep for most reef-building coral species. The ability to occupy a broad range of depths likely provides refugia from threats that may be more severe in shallow environments because irradiance is usually lower at depths at the deeper end of this species' range. It also increases the absolute area of potential occupancy throughout the species range. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future; and

(2) *Euphyllia paraancora's* absolute abundance is at least millions of colonies, providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. Its absolute abundance also provides buffering capacity against collection pressures for purposes of international trade. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response.

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future as global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *E. paraancora* is not warranted for listing at this time under any of the listing factors.

Euphyllia paradivisa

Introduction

The SRR and SIR provided the following information on *E. paradivisa's* morphology and taxonomy. Morphology was described as branching separate corallites without a shared wall and branching tentacles. The taxonomy was described as having no taxonomic issues but having tentacles similar to *Euphyllia divisa* and skeleton that is the same as *Euphyllia glabrescens, Euphyllia paraglabrescens,* and *Euphyllia paraancora.*

The public comments and information we gathered did not provide any new or supplemental information on morphology, and confirmed that there are no known taxonomic problems for *E. paradivisa,* and a low level of species identification uncertainty for this species. Veron (2014) states that *E. paradivisa* is very distinctive. The species can be easily identified by experts, thus we conclude that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *E. paradivisa's* distribution, habitat, and depth range. *Euphyllia paradivisa's* distribution is restricted to the Coral Triangle, and its habitat is shallow or mid-slope reef environments protected from wave action, from five to 20 meters depth.

The public comments did not provide any new or supplemental information on *E. paradivisa's* distribution. We gathered supplemental information, including Veron (2014) which reports that *E. paradivisa* is confirmed in eight of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional eight. Fenner (2013a) reported *E. paradivisa* (supported by photographs), from American Samoa at about 25 m deep protected from wave action. Veron (2014) reports it from American Samoa based on that record. Thus, based on all the available information, *E. paradivisa's* habitat includes environments protected from wave action on at least upper reef slopes, mid-slope terraces, and lagoons in depths ranging from two to 25 m depth.

Demographic Information

The SRR and SIR reported that *E. paradivisa's* abundance is uncommon.

The public comments did not provide any new or supplemental information on *E. paradivisa's* abundance. We gathered supplemental information, including Veron (2014) which reported that *E. paradivisa* occupied 0.2 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.5 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''rare,'' and overall abundance was described as ''uncommon.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species

Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *E. paradivisa,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 38 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *E. paradivisa* occurs in many areas affected by these broad changes, and likely has some susceptibility to both global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited species-specific information.

Other Biological Information

The public comments and information we gathered did not provide any other biological information on this species.

Susceptibility to Threats

To describe *E. paradivisa's* threat susceptibilities, the SRR and SIR provided genus-level information for the effects on *Euphyllia* of ocean warming, disease, acidification, sedimentation, predation, and collection and trade. The SRR and SIR also provided the following species-specific information on *E. paradivisa's* threats. When raised in acidified conditions, *E. paradivisa* showed little change in skeletal morphology, while *Galaxea* and *Stylophora* showed substantial skeletal change and *Pocillopora* died. *Euphyllia paradivisa* is specifically listed in the CITES databases with annual export quotas of up to 2380 ''maricultured'' pieces from Indonesia, although the meaning of ''maricultured'' is unclear. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *E. paradivisa.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *E. paradivisa's* vulnerabilities to threats as follows: High vulnerability to ocean warming, moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and nutrients, low vulnerability to sedimentation, sea level rise, and collection and trade, and unknown vulnerability to predation.

The public comments provided the following supplemental information on *E. paradivisa's* threat susceptibilities. A public comment stated that the SRR appeared to rely solely upon collection and trade to rate the extinction risk of this species, subsequently leading to the proposed Endangered listing. However, the SRR (and the Determination Tool in the proposed rule) both considered the susceptibilities and vulnerabilities of this species to multiple threats to help determine its extinction risk and proposed listing status. Likewise, as explained in the Determination Framework section above, this final rule considers the susceptibilities, exposures, and vulnerabilities of each species to the nine major threats to determine its extinction risk and listing status, including for *E. paradivisa.*

The public comment also stated that an unpublished study cited by the SRR on the effects of ocean acidification on *E. paradivisa* (Tibbits, 2009) is flawed. The study reported that the skeletal morphology of *E. paradivisa* specimens kept in acidified conditions over a three month period ''did not change noticeably.'' We reviewed the study, and we concur with the public comment, in that the methods used in the study to lower pH were flawed, thus the results should not be considered reliable information on the potential effects of ocean acidification on *E. paradivisa.*

We gathered the following species-specific supplemental information on this species' threat susceptibilities. *Euphyllia paradivisa* was not rated as moderately or highly susceptible to bleaching and disease, but these ratings are not based on species-specific data (Carpenter *et al.,* 2008). Based on the genus and species-specific information described above, *E. paradivisa* is likely to have high susceptibility to ocean warming and collection and trade, some susceptibility to disease, acidification, trophic effects of fishing, nutrients, and predation, and low susceptibility to sedimentation and sea-level rise. The available information does not support more precise ratings of the susceptibilities of *E. paradivisa* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanism or conservation efforts for *E. paradivisa.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm that *Euphyllia paradivisa* occurs in eight Indo-Pacific ecoregions that encompass 15 countries' EEZs. The 15 countries are Brunei, Fiji, France (French Pacific Island Territories), Indonesia, Malaysia, New Zealand (Tokelau), Niue, Papua New Guinea, Philippines, Samoa, Timor-Leste, Tonga, Tuvalu, United States (American Samoa), and Vietnam. The regulatory mechanisms relevant to *E. paradivisa,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (33 percent with none limited in scope), coral collection (80 percent with 40 percent limited in scope), pollution control (53 percent with 20 percent limited in scope), fishing regulations on reefs (100 percent with 20 percent limited in scope), managing areas for protection and conservation (100 percent with none limited in scope). The most common regulatory mechanisms in place for *E. paradivisa* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also common for the species, but 40 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are much less common regulatory mechanisms for the management of *E. paradivisa.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated that factors that increase the potential extinction risk for *E. paradivisa* include its heavy involvement in international trade combined with its rare existence but conspicuous colonies, suggesting it is vulnerable to overexploitation. The species appears bleaching-susceptible. Its geographic distribution is also

somewhat restricted, centered in the threat-prone Coral Triangle Region. No known factors were noted by the BRT to reduce the extinction risk of this species.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *E. paradivisa,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution is mostly limited to parts of the Coral Triangle. Despite the large number of islands and environments that are included in the species' range, this range exacerbates vulnerability to extinction over the foreseeable future because it is mostly limited to an area projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century. Its depth range of two to 25 meters moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance than surface waters, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes environments protected from wave action on at least upper reef slopes, mid-slope terraces, and lagoons. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range, moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time. However, its qualitative abundance is described as rare, which can exacerbate its vulnerability given its restricted range.

Listing Determination

In the proposed rule using the determination tool formula, *E. paradivisa* was proposed for listing as endangered because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); uncommon generalized range wide abundance (E); narrow overall distribution (based on narrow geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed our listing determination of *E. paradivisa* from endangered to threatened. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information provided above on *E. paradivisa's* spatial structure, demography, threat susceptibilities, and management indicate that it is likely to become endangered throughout its range within the foreseeable future, and thus warrants listing as threatened at this time, because:

(1) *Euphyllia paradivisa* is susceptible to warming-induced bleaching (ESA Factor E), disease (C), ocean acidification (E), trophic effects of fishing (A), nutrients (A, E), predation (C), and collection and trade (B). These threats are expected to continue and worsen into the future. In addition, the species has inadequate existing regulatory mechanisms for global threats (D).

(2) *Euphyllia paradivisa's* distribution is limited mostly to the Coral Triangle, which is projected to have the most rapid and severe impacts from climate change and localized human impacts for coral reefs over the 21st century, as described in the Threats Evaluation. Multiple ocean warming events have already occurred within the Coral Triangle that suggest future ocean warming events may be more severe than average in this part of the world. A range constrained to this particular geographic area that is likely to experience severe and increasing threats indicates that a high proportion of the population of this species is likely to be exposed to those threats over the foreseeable future; and

(3) *Euphyllia paradivisa's* semi-quantitative abundance is rare. Considering the limited range of this species in an area where severe and increasing impacts are predicted, this level of abundance leaves the species vulnerable to becoming of such low abundance within the foreseeable future that it may be at risk from depensatory processes, environmental stochasticity, or catastrophic events, as explained in more detail in the Corals and Coral Reefs and Risk Analyses sections.

The combination of these characteristics and projections of future threats indicates that the species is likely to be in danger of extinction within the foreseeable future throughout its range and warrants listing as threatened at this time due to factors A, C, D, and E.

The available information above on *E. paradivisa's* spatial structure, demography, threat susceptibilities, and management also indicate that the species is not currently in danger of extinction and thus does not warrant listing as Endangered because:

(1) While *E. paradivisa'* range is mostly within the Coral Triangle, which increases it extinction risk as described above, its habitat includes environments protected from wave action on at least upper reef slopes, mid-slope terraces, and lagoons. This moderates vulnerability to extinction currently because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time, as described in more detail in the Coral Habitat and Threats Evaluation sections. There is no evidence to suggest that the species is so spatially fragmented that depensatory processes, environmental stochasticity, or the potential for catastrophic events currently pose a high risk to the survival of the species; and

(2) While *Euphyllia paradivisa's* qualitative abundance is rare, its absolute abundance is millions of colonies, which allows for some variation in the responses of individuals to threats. There is no evidence of depensatory processes such as reproductive failure from low density of reproductive individuals and genetic processes such as inbreeding affecting this species. Thus, its absolute abundance indicates it is currently able

to avoid high mortality from environmental stochasticity, and mortality of a high proportion of its population from catastrophic events. The combination of these characteristics indicates that the species does not exhibit the characteristics of one that is currently in danger of extinction, as described previously in the Risk Analyses section, and thus does not warrant listing as endangered at this time.

Range-wide, a multitude of conservation efforts are already broadly employed that are likely benefiting *E. paradivisa.* However, considering the global scale of the most important threats to the species, and the ineffectiveness of conservation efforts at addressing the root cause of global threats (*i.e.,* greenhouse gas emissions), we do not believe that any current conservation efforts or conservation efforts planned in the future will result in affecting the species status to the point at which listing is not warranted.

Genus Physogyra

Genus Introduction

The family Euphyllidae consists of five genera: *Euphyllia, Catalaphyllia, Nemenzophyllia, Plerogyra,* and *Physogyra.* The genus *Physogyra* is monospecific, meaning it only includes *P. lichtensteini* (Veron, 2000), so there is no need to provide genus-level information.

Physogyra lichtensteini

Introduction

The SRR and SIR provided the following information on *P. lichtensteini's* morphology and taxonomy. Morphology was described as massive or thick, platy and meandroid forms with short, widely separated valleys, and taxonomy was described as having no taxonomic issues, but being similar to *Plerogyra sinuosa.*

The public comments did not provide any new or supplemental information on morphology or taxonomy. We gathered supplemental information, including Veron (2014), which states that *P. lichtensteini* is one of the world's most distinctive species. In addition, Veron (2000; 2014) considers the species valid, thus we conclude it can be identified by experts and that the distribution and abundance information described below for this species is sufficiently reliable (Fenner, 2014b).

Spatial Information

The SRR and SIR provided the following information on *P. lichtensteini's* distribution, habitat, and depth range. *Physogyra lichtensteini* is distributed from the Red Sea and the Indian Ocean to the western and central Pacific Ocean. The SRR described *P. lichtensteini's* habitat as turbid reef environments, crevices and overhangs, especially in turbid water with tidal currents, and shallow but shaded waters such as caves on the GBR, with a depth range of one to 20 meters. The SIR added that the species is also known to occur in clear water.

The public comments did not provide any new or supplemental information on *P. lichtensteini's* distribution. We gathered supplemental information, including Veron (2014), which reports that *P. lichtensteini* is confirmed in 54 of his 133 Indo-Pacific ecoregions, and strongly predicted to be found in an additional 18. In addition to shaded habitats, including turbid and clear water, *P. lichtensteini* also occurs in full sun (D. Fenner, personal comm.), thus the species occurs in variety of habitats. Thus, based on all the available information, *P. lichtensteini's* occurs in both turbid and clear upper reef slopes, mid-slopes, lower reef crests, reef flats, lagoons, and caves in depth ranging from one to 20 m depth.

Demographic Information

The SRR and SIR reported *P. lichtensteini's* abundance as common in turbid water and crevices and overhangs, especially in turbid water with tidal currents.

The public comments did not provide any new or supplemental information on *P. lichtensteini's* abundance. We gathered supplemental information, including Veron (2014), which reports that *P. lichtensteini* occupied 30.9 percent of 2,984 dive sites sampled in 30 ecoregions of the Indo-Pacific, and had a mean abundance rating of 1.31 on a 1 to 5 rating scale at those sites in which it was found. Based on this semi-quantitative system, the species' abundance was characterized as ''common,'' and overall abundance was described as ''common in protected habitats.'' Veron did not infer trends in abundance from these data. As described in the Indo-Pacific Species Determinations introduction above, based on results from Richards *et al.* (2008) and Veron (2014), the absolute abundance of this species is likely at least tens of millions of colonies.

Carpenter *et al.* (2008) extrapolated species abundance trend estimates from total live coral cover trends and habitat types. For *P. lichtensteini,* the overall decline in abundance (''Percent Population Reduction'') was estimated at 37 percent, and the decline in abundance before the 1998 bleaching event (''Back-cast Percent Population Reduction'') was estimated at 15 percent. However, as summarized above in the Inter-basin Comparison sub-section, live coral cover trends are highly variable both spatially and temporally, producing patterns on small scales that can be easily taken out of context. Thus, quantitative inferences to species-specific trends should be interpreted with caution. At the same time, an extensive body of literature documents broad declines in live coral cover and shifts to reef communities dominated by hardier coral species or algae over the past 50 to 100 years (Birkeland, 2004; Fenner, 2012; Pandolfi *et al.,* 2003; Sale and Szmant, 2012). These changes have likely occurred, and are occurring, from a combination of global and local threats. Given that *P. lichtensteini* occurs in many areas affected by these broad changes, and likely has some susceptibility to global and local threats, we conclude that it is likely to have declined in abundance over the past 50 to 100 years, but a precise quantification is not possible due to the limited species-specific information.

Other Biological Information

The SRR and SIR provided the following information on *P. lichtensteini's* life history. *Physogyra lichtensteini* is a gonochoric broadcast spawner. Larvae do not contain zooxanthellae. The public comments provided no additional biological information. We gathered supplemental information, including the following: Darling *et al.* (2012) found that *P. lichtensteini* has a ''stress-tolerant'' life history strategy, defined as slow growth and large colonies which can survive through stress and disturbances.

Susceptibility to Threats

The SRR and SIR provided the following species-specific information on *P. lichtensteini's* threats. *Physogyra lichtensteini* has been identified as vulnerable to extinction due to its high bleaching rate, low diversity of its genus, and narrow habitat range. The species bleached at 31°C in Palau in 1998. *Physogyra lichtensteini* contains Clade C zooxanthellae in the South China Sea. *Physogyra lichtensteini* is preyed upon on by butterflyfish in Indonesia. Since *P. lichtensteini* prefers turbid waters the risk of sediment impacts are low. The genus *Physogyra* is heavily traded, primarily exported from Indonesia. Between 1999 and 2010, the trade quota for Indonesia has been approximately 10,000 specimens annually. The SRR and SIR also provided genus-level and coral-level

information for the effects on *Physogyra* of thermal stress, acidification, disease, predation, sedimentation, nutrients, and collection and trade. The SRR and SIR did not provide any other species-specific information on the effects of these threats on *P. lichtensteini.* We interpreted the threat susceptibility and exposure information from the SRR and SIR in the proposed rule for *P. lichtensteini's* vulnerabilities as follows: High vulnerability to ocean warming; moderate vulnerability to disease, ocean acidification, trophic effects of fishing, and nutrients, low vulnerability to sedimentation, sea level rise, and collection and trade, and unknown vulnerability to predation.

Public comments did not provide any new or supplemental information on *P. lichtensteini's* threat susceptibilities. We gathered supplemental information, which provided the following species-specific and genus-level information on this species' threat susceptibilities. *Physogyra lichtensteini* was not rated as moderately or highly susceptible to bleaching and coral disease by Carpenter *et al.* (2008), but they did not have species-specific data. In the western Indian Ocean in 1998–2005, the genus *Physogyra* (which only includes *P. lichtensteini*) had a bleaching index of 16.7 for eight countries, which was 19th highest of the 45 genera recorded, and 45 percent of the highest value. In this study, *P. lichtensteini* was identified as vulnerable to extinction due to its high bleaching rate, low diversity of its genus, and narrow habitat range, and the genus *Physogyra* was rated as having the fifth highest extinction risk of the 45 genera in the study (McClanahan *et al.,* 2007a). In Palau in 2000, *P. lichtensteini* experienced very high levels of bleaching and mortality. In that event, 48 percent of all coral colonies of all species were bleached, with bleaching of different genera and species ranging from none to very high, and mortality from none to near 100 percent (Bruno *et al.,* 2001). There are no other studies of the effects of threats on this genus or species. Based on the species-specific information above, *P. lichtensteini* is likely highly susceptible to ocean warming. Based on the threat susceptibility information for other reef-building coral genera in this final rule, *P. lichtensteini* likely has some susceptibility to disease, ocean acidification, trophic effects of fishing, sedimentation, nutrients, sea-level rise, predation, and collection and trade. The available information does not support more precise ratings of the susceptibilities of *P. lichtensteini* to the threats.

Regulatory Mechanisms

In the proposed rule, we did not provide any species-specific information on the regulatory mechanisms or conservation efforts for *P. lichtensteini.* Criticisms of our approach received during public comment led us to attempt the following analysis of regulatory mechanisms on a species basis. Records confirm *P. lichtensteini* occurs in 54 Indo-Pacific ecoregions that encompass 35 countries' EEZs. The 35 countries are Australia, Brunei, China, Egypt, Federated States of Micronesia, Fiji, France (French Pacific Island Territories), India (including Andaman and Nicobar Islands), Indonesia, Israel, Japan, Jordan, Kenya, Madagascar, Malaysia, Maldives, Marshall Islands, Mauritius, Myanmar, Palau, Papua New Guinea, Philippines, Saudi Arabia, Seychelles, Solomon Islands, Sri Lanka, Sudan, Taiwan, Tanzania, Thailand, Timor-Leste, United Kingdom (British Indian Ocean Territory), United States (PRIAs), Vanuatu, and Vietnam. The regulatory mechanisms relevant to *P. lichtensteini,* described first as the percentage of the above countries that utilize them to any degree and second, as the percentages of those countries whose regulatory mechanisms may be limited in scope, are as follows: General coral protection (29 percent with 9 percent limited in scope), coral collection (57 percent with 29 percent limited in scope), pollution control (43 percent with 9 percent limited in scope), fishing regulations on reefs (89 percent with 20 percent limited in scope), managing areas for protection and conservation (97 percent with 11 percent limited in scope). The most common regulatory mechanisms in place for *P. lichtensteini* are reef fishing regulations and area management for protection and conservation. Coral collection and pollution control laws are also somewhat utilized for the species, but 29 percent of coral collection laws are limited in scope and may not provide substantial protection. General coral protection laws are less common regulatory mechanisms for the management of *P. lichtensteini.*

Vulnerability to Extinction

As explained above in the Risk Analyses section, a species' vulnerability to extinction results from the combination of its spatial and demographic characteristics, threat susceptibilities, and consideration of the baseline environment and future projections of threats. The SRR stated factors that increase the potential extinction risk for *P. lichtensteini* are its high bleaching rate and that it's heavily collected. It listed factors that reduce potential extinction risk including that *P. lichtensteini* has a wide latitudinal distribution, is common, and tolerates difficult (turbid) environments.

Subsequent to the proposed rule, we received and gathered supplemental species- or genus-specific information, described above, that expands our knowledge regarding the species abundance, distribution, and threat susceptibilities. We developed our assessment of the species' vulnerability to extinction using all the available information. As explained in the Risk Analyses section, our assessment in this final rule emphasizes the ability of the species' spatial and demographic traits to moderate or exacerbate its vulnerability to extinction, as opposed to the approach we used in the proposed rule, which emphasized the species' susceptibility to threats.

The following characteristics of *P. lichtensteini,* in conjunction with the information described in the Corals and Coral Reefs section, Coral Habitat sub-section, and Threats Evaluation section above, affect its vulnerability to extinction currently and over the foreseeable future. Its geographic distribution includes most of the coral reef ecoregions in the Indian Ocean and western and central Pacific Ocean. Its geographic distribution moderates vulnerability to extinction because some areas within its range are projected to have less than average warming and acidification over the foreseeable future, including the western Indian Ocean, the central Pacific, and other areas, so portions of the population in these areas will be less exposed to severe conditions. Its depth range is one to 20 meters. This moderates vulnerability to extinction over the foreseeable future because deeper areas of its range will usually have lower irradiance, and acidification is generally predicted to accelerate most in waters that are deeper and cooler than those in which the species occurs. Its habitat includes both turbid and clear upper reef slopes, mid-slopes, lower reef crests, reef flats, lagoons, and caves. This moderates vulnerability to extinction over the foreseeable future because the species is not limited to one habitat type but occurs in numerous types of reef environments that will, on local and regional scales, experience highly variable thermal regimes and ocean chemistry at any given point in time. Its abundance of at least tens of millions of colonies, combined with spatial variability in ocean warming and acidification across the species range,

moderates vulnerability to extinction because the increasingly severe conditions expected in the foreseeable future will be non-uniform and therefore will likely be a large number of colonies that are either not exposed or do not negatively respond to a threat at any given point in time.

Listing Determination

In the proposed rule using the determination tool formula approach, *P. lichtensteini* was proposed for listing as threatened because of: High vulnerability to ocean warming (ESA Factor E); moderate vulnerability to disease (C) and acidification (E); common generalized range wide abundance (E); wide overall distribution (based on wide geographic distribution and moderate depth distribution (E); and inadequacy of existing regulatory mechanisms (D).

In this final rule, we changed the listing determination for *P. lichtensteini* from threatened to not warranted. We made this determination based on a more species-specific and holistic assessment of whether this species meets the definition of either a threatened or endangered coral largely in response to public comments, including more appropriate consideration of the buffering capacity of this species' spatial and demographic traits to lessen its vulnerability to threats. Thus, based on the best available information above on *P. lichtensteini's* spatial structure, demography, threat susceptibilities, and management, none of the five ESA listing factors, alone or in combination, are causing this species to be likely to become endangered throughout its range within the foreseeable future, and thus it is not warranted for listing at this time, because:

(1) *Physogyra lichtensteini's* distribution across the Red Sea, Indian Ocean and most of the Pacific is spread over a very large area. While some areas within its range are projected to be affected by warming and acidification, other areas are projected to have less than average warming and acidification, including the western Indian Ocean, the central Pacific, and other areas. This distribution and the heterogeneous habitats it occupies reduce exposure to any given threat event or adverse condition that does not occur uniformly throughout the species range. As explained above in the Threats Evaluation section, we have not identified any threat that is expected to occur uniformly throughout the species range within the foreseeable future);

(2) *Physogyra lichtensteini's* total absolute abundance is at least tens of millions of colonies providing buffering capacity in the form of absolute numbers of colonies and variation in susceptibility between individual colonies. As discussed in the Corals and Coral Reefs section above, the more colonies a species has, the lower the proportion of colonies that are likely to be exposed to a particular threat at a particular time, and all individuals that are exposed will not have the same response; and

Notwithstanding the projections through 2100 that indicate increased severity over time of the three high importance threats, the combination of these biological and environmental characteristics indicates that the species possesses sufficient buffering capacity to avoid being in danger of extinction within the foreseeable future throughout its range. It is possible that this species' extinction risk may increase in the future if global threats continue and increase in severity and the species exposure to threats increases throughout its range. Should the species experience reduced abundance or range constriction of a certain magnitude, the ability of these characteristics to moderate exposure to threats will diminish. However, the species is not likely to become of such low abundance or so spatially fragmented as to be in danger of extinction due to depensatory processes, the potential effects of environmental stochasticity, or the potential for mortality from catastrophic events within the foreseeable future throughout its range. Therefore, *P. lichtensteini* is not warranted for listing at this time under any of the listing factors.

Summary of Determinations

In this final rule, we are responsible for determining whether each of the proposed coral species meet the definition of either threatened or endangered under the ESA based on the best available information including that which supported the proposed rule, and public comments received and information we gathered since the proposed rule was published. Section 4(b)(1)(A) of the ESA requires us to make listing determinations based solely on the best scientific and commercial data available after conducting reviews of the statuses of the species and after taking into account efforts being made by any state or foreign nation to protect the species. We conclude that conservation efforts are not protecting any of the coral species determined to be warranted for listing in this final rule in a way that would reduce extinction risk such that a threatened determination would no longer be warranted. Finally, section 4(b)(1)(B) of the ESA requires us to give consideration to species which (1) have been designated as requiring protection from unrestricted commerce by any foreign nation, or (2) have been identified as in danger of extinction, or likely to become so within the foreseeable future, by any state agency or by any agency of a foreign nation. All stony corals are listed under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which regulates international trade of species to ensure survival. *Dendrogyra cylindrus,* which we are listing as threatened, is also listed as threatened by the State of Florida and all stony corals are protected under the U.S. Virgin Islands Indigenous and Endangered Species Act of 1990. All of the corals in this final rule, including those we are listing under the ESA, are listed in the IUCN Red List of Threatened Species as vulnerable, endangered, or critically endangered. The final rule takes into consideration this information in its listing determinations.

In the proposed rule we determined that 12 species warranted listing as endangered: five in the Caribbean (*Dendrogyra cylindrus, Orbicella annularis, Orbicella faveolata, Orbicella franksi,* and *Mycetophyllia ferox*); and seven in the Indo-Pacific (*Millepora foveolata, Pocillopora elegans* (eastern Pacific), *Acropora jacquelineae, Acropora lokani, Acropora rudis, Anacropora spinosa,* and *Euphyllia paradivisa*). We also determined that 54 species warranted listing as threatened: two in the Caribbean (*Agaricia lamarcki* and *Dichocoenia stokesii);* and 52 in the Indo-Pacific (*Millepora tuberosa, Pocillopora danae, Pocillopora elegans (Indo-Pacific), Seriatopora aculeata, Acropora aculeus, Acropora acuminata, Acropora aspera, Acropora dendrum, Acropora donei, Acropora globiceps, Acropora horrida, Acropora listeri, Acropora microclados, Acropora palmerae, Acropora paniculata, Acropora pharaonis, Acropora polystoma, Acropora retusa, Acropora speciosa, Acropora striata, Acropora tenella, Acropora vaughani, Acropora verweyi, Anacropora puertogalerae, Astreopora cucullata, Isopora crateriformis, Isopora cuneata, Montipora angulata, Montipora australiensis, Montipora calcarea, Montipora caliculata, Montipora dilatata/flabellata/turgescens, Montipora lobulata, Montipora patula/verrilli, Alveopora allingi, Alveopora fenestrata, Alveopora verrilliana, Porites horizontalata, Porites napopora, Porites*

nigrescens, Acanthastrea brevis, Acanthastrea hemprichii, Acanthastrea ishigakiensis, Acanthastrea regularis, Pachyseris rugosa, Pectinia alcicornis, Barabattoia laddi, Pavona diffluens, Caulastrea echinulata, Euphyllia cristata, Euphyllia paraancora, and *Physogyra lichtensteini).* Finally, we determined that two species in the Caribbean currently listed as threatened (*Acropora palmata* and *Acropora cervicornis*) warranted reclassification as endangered.

In this final rule we have determined that no species warrants listing as endangered. We have determined the following 20 species warrant listing as threatened: five in the Caribbean (*Dendrogyra cylindrus, Orbicella annularis, Orbicella faveolata, Orbicella franksi,* and *Mycetophyllia ferox*); and 15 in the Indo-Pacific (*Acropora globiceps, Acropora jacquelineae, Acropora lokani, Acropora pharaonis, Acropora retusa, Acropora rudis, Acropora speciosa, Acropora tenella, Anacropora spinosa, Euphyllia paradivisa, Isopora crateriformis, Montipora australiensis, Pavona diffluens, Porites napopora,* and *Seriatopora aculeata*). For the two species in the Caribbean currently listed as threatened *(Acropora cervicornis* and *Acropora palmata*), through this final rule we have conducted an updated status review and threats assessment, and determined they still warrant listing as threatened. We also determined that 43 proposed species do not warrant listing as endangered or threatened: two in the Caribbean (*Agaricia lamarcki, Dichocoenia stokesii*); and 41 in the Indo-Pacific (*Acanthastrea brevis, Acanthastrea hemprichii, Acanthastrea ishigakiensis, Acanthastrea regularis, Acropora aculeus, Acropora acuminata, Acropora aspera, Acropora dendrum, Acropora donei, Acropora horrida, Acropora listeri, Acropora microclados, Acropora palmerae, Acropora paniculata, Acropora polystoma, Acropora striata, Acropora vaughani, Acropora verweyi, Alveopora allingi, Alveopora fenestrata, Alveopora verrilliana, Anacropora puertogalerae, Astreopora cucullata, Barabattoia laddi, Caulastrea echinulata, Euphyllia cristata, Euphyllia paraancora, Isopora cuneata, Millepora foveolata, Millepora tuberosa, Montipora angulata, Montipora calcarea, Montipora caliculata, Montipora dilatata/flabellata/turgescens, Montipora lobulata, Montipora patula/verrilli, Pachyseris rugosa, Pectinia alcicornis, Physogyra lichtensteini, Porites horizontalata,* and *Porites nigrescens*). Three coral species were not determinable due to taxonomic uncertainty (*Pocillopora danae, Pocillopora elegans* (eastern Pacific), *Pocillopora elegans* (Indo-Pacific)).

As described previously in the Risk Analyses section, in this final rule we took a more holistic approach in response to public comments and reconsidered these coral species' demographic and distribution traits that buffer or moderate exposure to threats, and the resulting capacity to respond to changing conditions into the foreseeable future. This approach led to changes in listing status from the proposed rule for 58 of the 68 species while determinations for 10 species remained the same. While in some cases, a warranted species possesses one particularly compelling characteristic that increases its vulnerability to extinction (*e.g.,* a small effective population size, a depth restriction to shallow waters, or a highly constrained geographic range), no one factor in isolation led to a species being warranted for listing and the final determinations are all based on the suite of demographic, spatial, and susceptibility components that influence the species' vulnerability to extinction in the face of continuing threats over the foreseeable future.

Similarly, many of the not warranted species either lack one compelling characteristic that increases vulnerability to extinction or possess one or more compelling characteristics that reduce vulnerability to extinction (*e.g.,* a vast geographic distribution, low susceptibility to high importance threats, a depth range extending into deeper waters, or a large absolute abundance estimate), but no one factor in isolation led to a species being not warranted for listing and the final determinations are all based on the suite of demographic, spatial, and susceptibility components that influence the species' vulnerability to extinction, in the face of continuing threats over the foreseeable future.

Effects of Listing

Conservation measures provided for species listed as endangered or threatened under the ESA may include recovery plans (16 U.S.C. 1553(f)), critical habitat designations, Federal agency consultation requirements (16 U.S.C. 1536), and prohibitions on taking (16 U.S.C. 1538). Recognition of the species' plight through listing promotes conservation actions by Federal and state agencies, private groups, and individuals, as well as the international community. For listed species, a recovery program could be implemented, and critical habitat will be designated to the maximum extent prudent and determinable, for species that occur in U.S. jurisdiction. Protective regulations for threatened corals may be developed for the conservation of the species. Federal, state and private sector cooperation and participation will be necessary to effectively and efficiently conserve the listed coral species and the ecosystems upon which they depend.

Identifying Section 7 Consultation Requirements

Section 7(a)(2) of the ESA and NMFS/FWS regulations require Federal agencies to consult with us on any actions they authorize, fund, or carry out if those actions may affect the listed species or designated critical habitat. Based on currently available information, examples of Federal actions that may affect the 22 coral species listed as threatened include, but are not limited to: Energy projects, discharge of pollution from point sources, non-point source pollution, dredging, pile-driving, setting of water quality standards, vessel traffic, aquaculture facilities, military activities, and fisheries management practices.

Critical Habitat

Critical habitat is defined in section 3 of the ESA as: ''(i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of this title, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species'' (16 U.S.C. 1532(5)(A)). ''Conservation'' means the use of all methods and procedures needed to bring the species to the point at which listing under the ESA is no longer necessary (16 U.S.C. 1532(3)). Section 4(a)(3)(A) of the ESA requires that, to the maximum extent prudent and determinable, critical habitat be designated concurrently with the final listing of a species (16 U.S.C. 1533(a)(3)(A)(i)). Further, ESA implementing regulations at 50 CFR 424.12(h) specify that critical habitat shall not be designated within foreign countries or in other areas outside of U.S. jurisdiction.

The existing designated critical habitat for *Acropora palmata* and *A.*

cervicornis in the Caribbean (50 CFR 226.216) remains effective with this final rule. The designation of critical habitat is not determinable for any of the newly listed corals at this time due to the extremely complex biological and physical requirements of the species. Although we have gathered information through the status review and public comment processes on the habitats occupied by these species, we currently do not have enough information to determine which of features within those habitats are essential to the conservation of any of the listed corals and may require special management considerations or protection. We will continue to gather and review other ongoing studies on the habitat use and requirements of the newly listed corals to attempt to identify these features. Additionally, we need more time to gather the information needed to perform the required analyses of the impacts of the designation. Designations of critical habitat must be based on the best scientific data available and must take into consideration the economic, national security, and other relevant impacts of specifying any particular area as critical habitat. To the maximum extent prudent and determinable, we will publish proposed designations of critical habitat for the newly listed corals in a separate rule or rules. Once critical habitat is designated (only in U.S. jurisdictions), section 7 of the ESA requires Federal agencies to ensure that they do not fund, authorize, or carry out any actions that are likely to destroy or adversely modify that habitat. This requirement is in addition to the section 7 requirement that Federal agencies ensure that their actions are not likely to jeopardize the continued existence of listed species.

ESA Section 9 Take Prohibitions

ESA section 9(a) take prohibitions (16 U.S.C. 1538(a)(1)(B)) apply to all species listed as endangered. These section 9(a) prohibitions include prohibitions against importing, exporting, engaging in foreign or interstate commerce, or ''taking'' of the species. ''Take'' is defined under the ESA as ''to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.'' These prohibitions apply to all persons subject to the jurisdiction of the United States, including in the United States, its territorial sea, or on the high seas. In the case of threatened species, section 9 prohibitions do not automatically apply. Section 4(d) of the ESA directs the Secretary to issue regulations she considers necessary and advisable for the conservation of the species, which may include applying some or all of the section 9 prohibitions to these species. Therefore, pursuant to ESA section 4(d), subsequent to this rulemaking we will evaluate whether there are protective regulations necessary and advisable for the conservation of any of the 20 species newly-listed as threatened in this final rule, including application of some or all of the take prohibitions. The existing 4(d) rule for *Acropora palmata* and *A. cervicornis* (50 CFR 223.208) will remain in effect for these threatened species.

Policies on Role of Peer Review

In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review establishing minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation. The OMB Bulletin, implemented under the Information Quality Act (Public Law 106–554) is intended to enhance the quality and credibility of the Federal government's scientific information, and applies to influential or highly influential scientific information disseminated on or after June 16, 2005. To satisfy our requirements under the OMB Bulletin, the BRT obtained independent peer review of the draft Status Review Report, and NMFS obtained independent peer review of the draft Management Report. Independent specialists were selected from the academic and scientific community, Federal and state agencies, and/or the private sector for this review. All peer reviewer comments were addressed prior to dissemination of the final SRR and Management Report.

We determined that the peer review conducted pursuant to the OMB Bulletin also satisfied the requirements of the Services' 1994 policy for peer review of scientific data included in listing decisions (59 FR 34270).

Solicitation of Information

We are soliciting information on features and areas that may support designations of critical habitat for the 20 newly listed coral species. Information provided should identify the physical and biological features essential to the conservation of the species and areas that contain these features for the coral species proposed to be listed. Areas outside the occupied geographical area should also be identified if such areas themselves are essential to the conservation of the species. Essential features may include, but are not limited to, features specific to individual species' ranges, habitats and life history characteristics within the following general categories of habitat features: (1) Space for individual growth and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for reproduction and development of offspring; and (5) habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of the species (50 CFR 424.12(b)). ESA implementing regulations at 50 CFR 424.12(h) specify that critical habitat shall not be designated within foreign countries or in other areas outside of U.S. jurisdiction. Therefore, we request information only on potential areas of critical habitat within waters in U.S. jurisdiction.

For features and areas potentially qualifying as critical habitat, we also request information describing: (1) Activities or other threats to the essential features or activities that could be affected by designating them as critical habitat, and (2) the positive and negative economic, national security and other relevant impacts, including benefits to the recovery of the species, likely to result if these areas are designated as critical habitat.

Classification

National Environmental Policy Act

The 1982 amendments to the ESA, in section 4(b)(1)(A), restrict the information that may be considered when assessing species for listing. Based on this limitation of criteria for a listing decision and NOAA Administrative Order 216–6 (Environmental Review Procedures for Implementing the National Environmental Policy Act), we have concluded that ESA listing actions are not subject to requirements of the National Environmental Policy Act.

Executive Order 12866, Regulatory Flexibility Act, and Paperwork Reduction Act

As noted in the Conference Report on the 1982 amendments to the ESA, economic impacts cannot be considered when assessing the status of a species. Therefore, the economic analysis requirements of the Regulatory Flexibility Act are not applicable to listing actions.

In addition, this final rule is exempt from review under E.O. 12866.

This final determination does not contain a collection of information requirement for the purposes of the Paperwork Reduction Act.

Executive Order 13132, Federalism

In accordance with E.O. 13132, agencies are required to take into account any federalism impacts of regulations under development. This Executive Order includes specific consultation directives for situations where a regulation will preempt state law, or impose substantial direct compliance costs on state and local governments (unless required by statute). Neither of those circumstances is applicable to this final listing determination. In keeping with the intent of the Administration and Congress to provide continuing and meaningful dialogue on issues of mutual state and Federal interest, the proposed rule was provided to the relevant agencies in each state in which the subject species occurs, and these agencies were invited to comment. Their comments were addressed with other comments in the Summary of Comments Received section.

Executive Order 12898, Environmental Justice

Executive Order 12898 requires that Federal actions address environmental justice in the decision-making process. In particular, the environmental effects of the actions should not have a disproportionate effect on minority and low-income communities. This final rule is not expected to have a disproportionately high effect on minority populations or low-income populations.

List of Subjects in 50 CFR Part 223

Endangered and threatened species; Exports; Imports; Transportation.

Dated: August 26, 2014.

Eileen Sobeck,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 223 is amended as follows:

PART 223—THREATENED MARINE AND ANADROMOUS SPECIES

■ 1. The authority citation for part 223 continues to read as follows:

Authority: 16 U.S.C. 1531–1543; subpart B, § 223.201–202 also issued under 16 U.S.C. 1361 *et seq.;* 16 U.S.C. 5503(d) for § 223.206(d)(9).

■ 2. In § 223.102, in the table, amend paragraph (e) by removing the two existing entries under the ''Corals'' subheading and adding the following 22 entries to read as follows:

§ 223.102 Enumeration of threatened marine and anadromous species.

* * * * *

(e) * * *

Species [1]			Citation(s) for listing determination(s)	Critical habitat	ESA rules
Common name	Scientific name	Description of listed entity			
*	*	*	*	*	*
Corals					
Coral, [no common name]	*Acropora globiceps*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Acropora jacquelineae*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Acropora lokani*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Acropora pharaonis*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Acropora retusa*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Acropora rudis*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Acropora speciosa*	Entire species.	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Acropora tenella*	Entire species.	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Anacropora spinosa*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Euphyllia paradivisa*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Isopora crateriformis*	Entire species.	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Montipora australiensis*	Entire species.	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Pavona diffluens*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Porites napopora*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, [no common name]	*Seriatopora aculeata*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, boulder star	*Orbicella franksi*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, elkhorn	*Acropora palmata*	Entire species	[Insert FR citation] 9/10/2014	226.216	223.208
Coral, lobed star	*Orbicella annularis*	Entire species	[Insert FR citation] 9/10/2014	NA	NA

Species [1]			Citation(s) for listing determination(s)	Critical habitat	ESA rules
Common name	Scientific name	Description of listed entity			
Coral, mountainous star	*Orbicella faveolata*	Entire species	[Insert FR citation & date of publication in the **Federal Register**	NA	NA
Coral, pillar	*Dendrogyra cylindrus*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, rough cactus	*Mycetophyllia ferox*	Entire species	[Insert FR citation] 9/10/2014	NA	NA
Coral, staghorn	*Acropora cervicornis*	Entire species	[Insert FR citation] 9/10/2014	226.216	223.208
*	*	*	*	*	*

* * * * *

[FR Doc. 2014–20814 Filed 9–9–14; 8:45 am]

BILLING CODE 3510–22–P

FEDERAL REGISTER

Vol. 79 Wednesday,

No. 175 September 10, 2014

Part III

General Services Administration

48 CFR Parts 515, 538, and 552

General Services Administration Acquisition Regulation; Federal Supply Schedule Contracting (Administrative Changes); Proposed Rule

GENERAL SERVICES ADMINISTRATION

48 CFR Parts 515, 538, and 552

[GSAR Case 2013–G502; Docket 2014–0009; Sequence 1]

RIN 3090–AJ41

General Services Administration Acquisition Regulation; Federal Supply Schedule Contracting (Administrative Changes)

AGENCY: Office of Acquisition Policy, General Services Administration.

ACTION: Proposed rule with request for comments.

SUMMARY: The General Services Administration (GSA) is proposing to amend the General Services Administration Acquisition Regulation (GSAR) to clarify and update the contracting by negotiation GSAR section and incorporate existing Federal Supply Schedule Contracting policies and procedures, and corresponding provisions and clauses.

DATES: Interested parties should submit written comments to the Regulatory Secretariat on or before November 10, 2014 to be considered in the formulation of a final rule.

ADDRESSES: Submit comments identified by GSAR Case 2013–G502, Federal Supply Schedule Contracting (Administrative Changes), by any of the following methods:

- *Regulations.gov: http://www.regulations.gov.*

Submit comments by searching for ''GSAR Case 2013–G502''. Select the link ''Comment Now'' and follow the instructions provided at the ''You are commenting on'' screen. Please include your name, company name (if any), and ''GSAR Case 2013–G502'', on your attached document.

- *Fax:* 202–501–4067.
- *Mail:* U.S. General Services Administration, Regulatory Secretariat Division (MVCB), 1800 F Street, NW., 2nd Floor, ATTN: Hada Flowers, Washington, DC 20405–0001.

Instructions: Please submit comments only and cite GSAR Case 2013–G502 in all correspondence related to this case. All comments received will be posted without change to *http://www.regulations.gov,* including any personal and/or business confidential information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Dana Munson, General Services Acquisition Policy Division, GSA, 202–357–9652 or email *Dana.Munson@gsa.gov,* for clarification of content. For information pertaining to status or publication schedules, contact the Regulatory Secretariat at 202–501–4755. Please cite GSAR Case 2013–G502.

SUPPLEMENTARY INFORMATION:

I. Background

GSA is proposing to amend the General Services Administration Acquisition Regulation (GSAR) to update the text addressing GSAR part 515, Contracting by Negotiation, GSAR part 538, Federal Supply Schedule Contracting, and corresponding provisions and clauses in GSAR part 552, Solicitation Provisions and Contract Clauses.

GSAR Part 538 will be amended to include MAS policies contained in FAS Acquisition Letters (ALs) and Instructional Letters (ILs). Bringing these policies into the GSAM will allow for greater transparency and an opportunity for the public to comment on these longstanding procedures.

The proposed changes included in this rulemaking are as follows:

1. GSAR 538.273 is restructured to be more consistent with the formation of Federal Supply Schedule (FSS) solicitations and contracts. The previous structure of GSAR 538.273 was based upon whether the FSS was single-award or multiple-award. A more practical structure outlines where each provision or clause shall be located in FSS solicitations and contracts (*e.g.,* as an addendum to FAR clause 52.212–1 or 52.212–4).

2. Thirty five (35) new FSS-specific clauses and provisions, previously implemented through internal FAS policy and currently in FSS solicitations and contracts will be incorporated into GSAR parts 538 and 552. Bringing these clauses and provisions into the GSAM allows for greater transparency, and consolidates all regulations into one area, while updating administrative information to ensure currency and consistency within the FSS program. This also allows the public an opportunity to comment on these longstanding procedures. The thirty-five (35) new clauses, prescriptions, and a brief description are as follows:

New #	New name	Prescription	Description/Purpose of the provision/Clause
552.238–82	Delivery Schedule	Use only in FSS solicitations and contracts for supplies.	This clause provides to the Offeror the requirement to address normal commercial delivery times in its offer.
552.238–83	GSA Advantage!	Use in all FSS solicitations and contracts except the Department of Veterans Affairs Federal Supply Schedules.	This clause outlines to the Contractor that it must participate in the GSA Advantage!® online shopping service. This clause is not applicable to the Department of Veterans Affairs.
552.238–84	Cover Page for Worldwide Federal Supply Schedules.	Use in all FSS solicitations. Use Alternate I for single award Federal Supply Schedules.	This provision notifies the Offeror of the industry and types of products/services being solicited.
552.238–85	Significant Changes	Use in all supply and service solicitation refreshes containing revisions since the previous posting to the Government's point of entry.	This provision outlines to Offerors the most recent solicitation revisions since its previous posting to the Government's point of entry.
552.238–86	Notice of Total Small Business Set-Aside.	Use in supply and service solicitations containing special item numbers (SINs) that are set aside for small business.	This provision notifies small business Offerors which Special Item Numbers (SINs) are set aside.
552.238–87	Information Collection Requirements	Use in all FSS solicitations.	This provision informs Offerors that only required regulations are contained in the solicitation.

New #	New name	Prescription	Description/Purpose of the provision/ Clause
552.238–88	Notice: Requests for Explanation or Information and Hours of Operation.	Use in all FSS solicitations.	This provision contains the contact information to address questions regarding the solicitation and the hours of operation.
552.238–90	Introduction of New Supplies/Services (INSS).	Use only in FSS solicitations allowing the introduction of new supplies/services. Note: GSA Form 1649, Notification of Federal Supply Schedule Improvement, may be required if revising a Special Item Number (SIN).	This provision notifies offerors of the method to propose new services or supplies not covered by the Schedule.
552.238–91	Authorized Negotiators	Use in all FSS solicitations.	This provision ensures only authorized personnel represent the contractor.
552.238–93	Use of Non-Government Employees to Review Offers.	Use only in FSS solicitations when non-government employees may be utilized to review solicitation responses.	This provision provides notification to Offerors that non-government employees may be utilized to review their solicitation response.
552.238–94	Examination of Records by GSA (Federal Supply Schedule).	Use in all FSS solicitations and contracts.	This clauses notifies the Offeror that GSA shall have access to and the right to examine any books, documents, papers, and records involving transactions related to its FSS contract.
552.238–99	Deliveries to the U.S. Postal Service	Use only in FSS solicitations and contracts for mailable articles when delivery to a U.S. Postal Service (USPS) facility is contemplated.	This clause provides requirements for the delivery of mailable articles delivered direct to a USPS facility. The clause ensures the use of the USPS to reduce unnecessary costs of shipping.
552.238–100	Characteristics of Electric Current	Use only in FSS solicitations and contracts when the supply of equipment which uses electrical current is contemplated.	This clause requires the contractor to provide equipment with electrical currents suitable for the location in which the equipment is to be used, as specified on the order.
552.238–101	Marking and Documentation Requirements for Shipping.	Use only in FSS solicitations and contracts for supplies when the need for outlining the minimum information and documentation required for shipping is contemplated.	This clause defines the responsibility of ordering activities and contractors for the marking and documentation of shipping information.
552.238–102	Inspection	Use only in FSS solicitations and contracts when all items are to be inspected at a destination by a Government representative. Use Alternate I when it is anticipated that additional terms and conditions regarding responsibility for rejected supplies and additional costs for inspection and testing are required.	This clause informs contractors that items are to be inspected at a destination by an authorized Government representative. Alternate I includes terms and conditions regarding responsibility for rejected supplies and additional costs for inspection and testing.
552.238–103	Vendor Managed Inventory (VMI) Program (MAS).	Use only in FSS solicitations and contracts for supplies when a VMI Program is contemplated.	This clause allows Contractors that commercially provide a VMI type system to enter into similar partnerships with customers under a Blanket Purchase Agreements.
552.238–104	Order Acknowledgement	Use only in FSS solicitations and contracts for supplies.	This clause requires Contractors to acknowledge orders which state ''Order Acknowledgement Required'' within 10 calendar days after receipt to the ordering activity placing the order and contain information pertinent to the order, including the anticipated delivery date.
552.238–105	Urgent Requirements	Use only in FSS solicitations and contracts for supplies.	This clause assists with ordering activities to receive accelerated delivery when the FSS contract delivery period does not meet the bona fide urgent delivery requirements of an ordering activity.
552.238–106	Post-Award Samples	Use only in FSS solicitations and contracts for the acquisition of carpet.	This clause instructs the Contractor of submission requirements.

New #	New name	Prescription	Description/Purpose of the provision/ Clause
552.238–107	Restriction on the Acceptance of Orders	Use only in FSS solicitations and contracts for electrostatic copying equipment, supplies (toner, developer, fuser oil) for such equipment, repair or replacement parts for such equipment, and maintenance or repair service for such equipment.	This clause sets restrictions on orders and deliveries in connection with the United States Navy and the Military Sealift Command.
552.238–108	Separate Charge for Performance Oriented Packaging (POP).	Use only in FSS solicitations and contracts for items defined as hazardous under Federal Standard No. 313.	This clause ensures both parties, contractors and ordering activities, are aware of a separate charge for preservation, packaging, packing and marking and labeling of domestic and overseas HAZMAT SURFACE SHIPMENTS.
552.238–109	Additional Service Charge for Delivery Within Consignee's Premises.	Use only in FSS solicitations and contracts for supplies when allowing offerors to propose separate charges for deliveries within the consignee's premises.	This clause ensures both parties, contractors and ordering activities, are aware of a separate charges for deliveries within the consignee's premises.
552.238–110	Shipping Points	Use only in FSS solicitations and contracts for supplies when F.O.B. Origin shipments are contemplated.	This clause instructs the Offeror to provide shipping information, inclusive of carrier and address, for F.O.B. Origin shipments.
552.238–111	Contact for Contract Administration	Use in all FSS solicitations and contracts.	This clause instructs Offerors to provide points of contact for domestic and/or overseas contact information for contract administration.
552.238–112	Clauses for Overseas Coverage	Use only in FSS solicitations and contracts when overseas acquisition is contemplated. The following clauses and provisions shall also be inserted in full text, when applicable.	This clause ensures all applicable overseas clauses are included in the solicitation and contract.
552.238–113	Parts and Service	Use in all FSS solicitations and contracts.	This clause is used to ensure that the parts and services (including the performance of warranty or guarantee service) submitted by Offerors (dealers/distributors) is good for the entire contract period.
552.238–114	Delivery Prices Overseas	Use only in FSS solicitations and contracts when overseas acquisition is contemplated.	This clause is for use for F.O.B. Destination in overseas deliveries to ensure that all parties are aware of delivery terms.
552.238–115	Transshipments	Use in all FSS solicitations and contracts.	This clause states the terms and conditions for transshipments, and provides information to contractors with the necessary Department of Defense forms.
552.238–116	Foreign Taxes and Duties	Use only in FSS solicitations and contracts when overseas acquisition is contemplated.	This clause delineates which fees, taxes and other foreign governmental costs are exempt/non-exempt by the U.S. Government.
552.238–117	English Language and U.S. Dollar Requirements.	Use in all FSS solicitations and contracts.	This clause is used to instruct Contractors that all documents shall be produced in the English language, including, but not limited to, price lists and catalogs.
552.238–118	Delivery Prices	Use in all FSS solicitations and contracts.	This clause ensures all parties are aware of the delivery terms of the contract.
552.238–119	Federal Excise Tax	Use only in FSS solicitations and contracts for tire and tube acquisitions.	This clause instructs ordering activities on the procedures for invoicing the Federal Excise Tax, and requires contractors to quote this tax separately.
552.238–120	Guarantee	Use only in FSS solicitations and contracts for major appliances.	This clause outlines the guarantee afforded to the Government for a period of one year from the date of delivery.
552.238–121	Electronic Commerce	Use in all FSS solicitations and contracts except the Department of Veterans Affairs Federal Supply Schedules.	This clause outlines the use of electronic commerce/data interchange to conduct contract processes and procedures.

New #	New name	Prescription	Description/Purpose of the provision/ Clause
552.238–122	Imprest Funds (Petty Cash)	Use in all FSS solicitations and contracts.	This clause outlines to the Contractor that it agrees to accept cash payment for purchases under the terms of the contract in accordance with FAR 13.305.
552.238–123	Dissemination of Information by Contractor.	Use in all FSS solicitations and contracts.	This clause provides to the Contractor the responsibility of distributing Authorized Federal Supply Schedule Price Lists to all authorized sales outlets.
552.238–124	Deliveries Beyond the Contractual Period—Placing of Orders.	Use only in FSS solicitations and contracts for supplies.	This clause allows orders to be processed if they were received prior to the expiration of the contract.
552.238–125	Interpretation of Contract Requirements	Use in all FSS solicitations and contracts.	This indicates that only written clarifications regarding interpretation of contract clauses may only be made by the Contracting Officer or his/her designated representative.
552.238–126	Export Traffic Release (Supplies)	Use in FSS solicitations and contracts for supplies, except vehicles.	This clause informs contractors of the requirements for exporting items under the contract.
552.238–127	Export Traffic Release (Vehicles)	Use only in FSS solicitations and contracts for vehicles.	This clause informs contractors of the requirements for exporting vehicles under the contract.
552.238–128	Carload Shipments	Use only in FSS solicitations and contracts for vehicles.	This clause provides the requirements to ship cars by rail.
552.238–129	Spare Parts Kit	Use only in FSS solicitations and contracts for items requiring spare part kits.	This clause ensures requirements for spare part kits are understood by all parties.
552.238–130	Authentication Supplies and Services ...	Use in Federal Supply Schedule 70 solicitations only, and only contracts awarded Special Item Numbers (SINs) associated with the Homeland Security Presidential Directive 12 (HSPD–12).	This clause outlines requirements for the Homeland Security Presidential Directive 12 (HSPD–12).
552.238–131	Commercial Satellite Communication (COMSATCOM) Services.	Use only in FSS solicitations and contracts for COMSATCOM services.	This clause provides minimum requirements for COMSATCOM services.
552.238–132	Environmental Protection Agency Registration Requirement.	Use only in FSS solicitations and contracts for supplies when items may require registration with the Environmental Protection Agency.	This clause ensures items in FSC Group 68 items (insecticides, etc.) are properly registered with EPA.

3. Prescriptions for the following seven (7) existing clauses are updated to reflect current practices:

Clause	Name	Prescription	Description/Purpose of the provision/ Clause
552.238–70	Identification of Electronic Office Equipment Providing Accessibility for the Handicapped.	Use only in FSS solicitations for electronic office equipment.	This clause instructs the Offeror to identify accessible electronic office equipment included in its proposal.
552.238–71	Submission and Distribution of Authorized Federal Supply Schedule (FSS) Price Lists.	Use in all FSS solicitations and contracts.	This clause instructs the Offeror on how and when to submit and distribute its authorized FSS pricelists.
552.238–72	Identification of Products that have Environmental Attributes.	Use only in FSS solicitations and contracts that contemplate items with environmental attributes.	This provision instructs the Offeror to identify products included in its proposal that have environmental attributes.
552.238–73	Cancellation	Use in all FSS solicitations and contracts.	This clause provides instructions to the Offeror on cancelling its FSS contracts.
552.238–74	Industrial Funding Fee and Sales Reporting.	Use in all FSS solicitations and contracts.	This clause provides instructions to the Offeror on submitting the IFF.
552.238–75	Price Reductions	Use in all FSS solicitations and contracts. Use in all FSS solicitations and contracts. Use Alternate I in solicitations and contracts for— (i) Federal Supply Schedule 70;	This clause outlines the evaluation methodology triggering the PRC.

Clause	Name	Prescription	Description/Purpose of the provision/ Clause
		(ii) The Consolidated Schedule containing information technology Special Item Numbers; (iii) Federal Supply Schedule 84; and (iv) Federal Supply Schedules for recovery purchasing (see 538.7102).	
552.238–81	Modifications (Federal Supply Schedules).	Use in all FSS solicitations and contracts. (i) Use Alternate I for Federal Supply Schedules that only accept eMod.	This clause provides to the Offeror instructions on adding and deleting, special item numbers, products and services from its contract.

4. Six (6) FSS-specific provisions and clauses that were removed from the GSAR as part of a previous General Services Administration Acquisition Manual (GSAM) rewrite are reinstated and given new clause numbers. Specifically, GSAR Case 2006–G507, ''*Rewrite of GSAR Part 538, Federal Supply Schedule Contracting,*'' was published in the **Federal Register** at 74 FR 4596 on January 26, 2009 and removed the clauses. Since then, the clauses have been and are retained by GSA Acquisition Letter (AL) V–09–10 (and its supplements). The clauses and provisions contained therein are proposed to be reinstated into GSAR Parts 538 and 552 in order to ensure consistency and transparency and to provide the public an opportunity to comment.

THE REINSTATED CLAUSES ARE AS FOLLOWS:

Clause title	New GSAR location	New number	Previous number (s)
Contractor's Remittance (Payment) Address	538.273(b)(2)	552.238–89	552.232–82
Evaluation—Commercial Items (Federal Supply Schedule)	538.273(c)(1)	552.238–92	552.212–73
Discount for Prompt Payment (Federal Supply Schedule)	538.273(d)(10)	552.238–95	552.232–8
Contractor's Billing Responsibilities	538.273(d)(11)	552.238–96	552.232–83
Payment by Credit Card	538.273(d)(12)	552.238–97	552.232–79
Warranty (Federal Supply Schedule)	538.273(d)(13)	552.238–98	552.246–73

5. The GSAR clause at 552.215–71, Examination of Records by GSA (Multiple Award Schedule), is relocated to GSAR part 538. As part of the GSAR rewrite, GSA is relocating the instructions for using all clauses and provisions dealing with the FSS Program to GSAM part 538. Bringing these instructions into one area ensures currency and consistency within the FSS program. This provides better guidance to FSS contracting officers when developing FSS solicitations and contracts.

6. Typographical errors are corrected and minor administrative changes are made to GSAR parts 538 and 552 (*e.g.,* renumbers existing provisions and clauses, changes ''MAS'' to ''FSS'' to be more consistent with the FAR).

II. Executive Orders 12866 and 13563

Executive Orders (E.O.s) 12866 and 13563 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). E.O. 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This is not a significant regulatory action and, therefore, was not subject to review under section 6(b) of E.O. 12866, Regulatory Planning and Review, dated September 30, 1993. This rule is not a major rule under 5 U.S.C. 804.

III. Regulatory Flexibility Act

GSA does not expect this proposed rule to have a significant economic impact on a substantial number of small entities within the meaning of the Regulatory Flexibility Act 5 U.S.C. 601, *et seq.,* because the proposed rule will incorporate a number of provisions and clauses that are currently in use in FSS solicitations and contracts and most contractors are familiar with and are currently complying with these practices. However, since this is the first time these proposed changes and existing policies and procedures that impact the public are being published, an Initial Regulatory Flexibility Analysis (IRFA) has been prepared. The Secretariat has submitted a copy of the IRFA to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the IRFA may be obtained from the Regulatory Secretariat. GSA will consider comments from small entities concerning the affected GSAR parts in accordance with 5 U.S.C. 610. Comments must be submitted separately and shall cite 5 U.S.C. 601, *et seq.* (GSAR Case 2013–G502), in correspondence. The analysis is summarized as follows:

This IRFA has been prepared consistent with the criteria of 5 U.S.C. 604.

There are approximately 20,500 FSS contracts that are affected by this proposed change. Of these, approximately eighty percent (16,400) of FSS contracts are held by small businesses. The proposed rule is unlikely to affect small businesses awarded GSA FSS contracts as it implements a number of provisions and clauses currently in use in FSS solicitations and contracts, yet not vetted via public comment. The information collected is used by FAS to evaluate vendors' offers, ordering activities when placing orders against the contract, and other FSS vendors to conduct market research when submitting proposals. Therefore, this rule does not pose any new projected reporting, recordkeeping, or additional compliance requirements. Bringing these regulations into the GSAM consolidates all regulations into one area, allowing for any future changes to receive public comment.

There are a total of 31 Schedules, with 14 possessing an array of Special Item Numbers (SINs) set-aside for small businesses. Overall, small businesses have benefited from GSA providing access to the Federal marketplace via the Pre-award phase (Pathway to Success), the Post-award phase (New Contractor Orientation), and Contractor Assistance Visits (CAVs). FSS contracts are negotiated as volume purchase agreements, with generally very favorable pricing. The ability of small businesses to receive awards under the FSS Program has enabled them to grow in the Federal marketplace as well as realize significant cost savings.

IV. Paperwork Reduction Act

The Paperwork Reduction Act (44 U.S.C. chapter 35) applies because the proposed rule contains information collection requirements. Accordingly, the Regulatory Secretariat has submitted a request for approval of a new information collection requirement concerning OMB Control Number 3090–0303; Administrative Changes to the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

A. Annual Reporting Burden

The information collected is used by FAS to evaluate vendors' offers, ordering activities when placing orders against the contract, and other FSS vendors to conduct market research when submitting proposals.

Total public reporting burden for this collection of information is estimated to average 2,988 total hours, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Annual reporting burdens include the estimated respondents with 1 submission per respondent multiplied by preparation hours per response to get the total response burden hours. The estimated burden hours to the public for the below clauses are as follows:

The new provision at GSAR 552.238–89, Contractor Remittance (Payment) Address, requires the offeror to indicate the payment address to which checks shall be mailed for payment of invoices and to identify participating dealers and provide their addresses for receiving orders and payments on behalf of the contractor.

Respondents: 20,500.
Responses per respondent: 1.
Total annual responses: 20,500.
Preparation hours per response: 0.0333.
Total response burden hours: 683.

The new provision at GSAR 552.238–91, Authorized Negotiators, requires the offeror to outline its point-of-contact information for negotiations.

Respondents: 20,500.
Responses per respondent: 1.
Total annual responses: 20,500.
Preparation hours per response: 0.0333.
Total response burden hours: 683.

The new clause at GSAR 552.238–95, Discounts for Prompt Payment (Federal Supply Schedules), requires the offeror to provide the Government a discount for early payment, if applicable.

Respondents: 20,500.
Responses per respondent: 1.
Total annual responses: 20,500.
Preparation hours per response: 0.0167.
Total response burden hours: 342.

The new clause at GSAR 552.238–108, Separate Charge for Performance Oriented Packaging, requires the offeror to list any separate charge for preservation, packaging, packing and marking, and labeling of domestic and overseas HAZMAT surface shipments.

Respondents: 8,000.
Responses per respondent: 1.
Total annual responses: 8,000.
Preparation hours per response: 0.0167.
Total response burden hours: 134.

The new clause at GSAR 552.238–109, Additional Service Charge for Delivery within Consignee's Premises, requires the offeror to list any separate cost for shipping when the delivery is within the consignee's premises (inclusive of items that are comparable in size and weight).

Respondents: 8,000.
Responses per respondent: 1.
Total annual responses: 8,000.
Preparation hours per response: 0.0167.
Total response burden hours: 134.

The new clause at GSAR 552.238–110, Shipping Points, requires the offeror to provide shipping information, inclusive of carrier and address, for F.O.B. Origin shipments.

Respondents: 8,000.
Responses per respondent: 1.
Total annual responses: 8,000.
Preparation hours per response: 0.0167.
Total response burden hours: 134.

The new clause at 552.238–111, Contact for Contract Administration, requires the offeror to provide points of contact for domestic and/or overseas contact information.

Respondents: 20,500.
Responses per respondent: 1.
Total annual responses: 20,500.
Preparation hours per response: 0.0167.
Total response burden hours: 342.

The new clause at 552.238–113, Parts and Service, requires the offeror to include in the price list, the names and addresses of all supply and service points maintained in the geographic area in which the offeror will perform, whether or not a complete stock of repair parts for items offered is carried at that point, and whether or not mechanical service is available.

Respondents: 8,000.
Responses per respondent: 1.
Total annual responses: 8,000.
Preparation hours per response: 0.0167.
Total response burden hours: 134.

The new clause at 552.238–114, Delivery Prices Overseas, requires the offeror to identify the intended geographic area(s)/countries/zones which are to be covered.

Respondents: 8,000.
Responses per respondent: 1.
Total annual responses: 8,000.
Preparation hours per response: 0.0167.
Total response burden hours: 134.

The new clause at 552.238–118, Delivery Prices, requires the offeror to identify the intended geographic area(s)/countries/zones that are to be covered.

Respondents: 8,000.
Responses per respondent: 1.
*Total annual respo*nses: 8,000.
Preparation hours per response: 0.0167.
Total response burden hours: 134.

The new clause at 552.238–134, Environmental Protection Agency Registration Requirement, requires the offeror to list the manufacturer's and/or distributor's name and EPA Registration Number for each item requiring registration with the EPA.

Respondents: 8,000.
Responses per respondent: 1.
Total annual responses: 8,000.
Preparation hours per response: 0.0167.
Total response burden hours: 134.

The new clause at GSAR 552.238–96, Contractor's Billing Responsibilities, contains a recordkeeping requirement that is subject to the Paperwork Reduction Act (44 U.S.C. 3501, *et seq.*). The clause provides for the contractor to require all dealers participating in the performance of the contract to agree to maintain certain records on sales made under the contract on behalf of the contractor. However, it does not add burden to what is already estimated for the existing GSAR clause at 552.238–74, Industrial Funding Fee and Sales Reporting by a previous information collection (see OMB Control Number 3090–0121; Industrial Funding Fee and Sales Reporting).

B. Requests for Comments Regarding Paperwork Burden

Submit comments, including suggestions for reducing this burden,

not later than November 10, 2014 to: GSA Desk Officer, OMB, Room 10102, NEOB, Washington, DC 20503, and a copy to the General Services Administration, Regulatory Secretariat Division (MVCB), ATTN: Ms. Flowers, 1800 F Street NW., 2nd Floor, Washington, DC 20405.

Public comments are particularly invited on: whether this collection of information is necessary for the proper performance of functions of the FAR, and will have practical utility; whether our estimate of the public burden of this collection of information is accurate, and based on valid assumptions and methodology; ways to enhance the quality, utility, and clarity of the information to be collected; and ways in which we can minimize the burden of the collection of information on those who are to respond, through the use of appropriate technological collection techniques or other forms of information technology.

Requesters may obtain a copy of the supporting statement from the General Services Administration, Regulatory Secretariat (MVCB), ATTN: Ms. Flowers, 1800 F Street NW., 2nd Floor, Washington, DC 20405.

Please cite OMB Control Number 9000–0303, (GSAR) Administrative Changes; GSAR Case 2013–G502, in all correspondence.

List of Subjects in 48 CFR Parts 515, 538, and 552

Government procurement.

Dated: August 20, 2014.

Jeffrey A. Koses,

Senior Procurement Executive, Office of Acquisition Policy, Office of Government-wide Policy.

Therefore, GSA proposes to amend 48 CFR parts 515, 538, and 552 as set forth below:

PART 515—CONTRACTING BY NEGOTIATION

■ 1. The authority citation for 48 CFR part 515 is revised to read as follows:

Authority: 40 U.S.C. 121(c).

515.209–70 [Amended]

■ 2. Amend section 515.209–70 by removing the undesignated center heading ''Clause for Multiple Award Schedules'' and paragraphs (c) and (d).

PART 538—FEDERAL SUPPLY SCHEDULE CONTRACTING

■ 3. The authority citation for 48 CFR part 538 continues to read as follows:

Authority: 40 U.S.C. 121(c).

■ 4. Amend section 538.270 by revising the section heading; and removing from the introductory text of paragraph (c) and paragraph (c)(7) ''MAS'' and adding ''FSS'' in their places. The revised heading reads as follows:

538.270 Evaluation of Federal Supply Schedule (FSS) offers.

* * * * *

■ 5. Amend section 538.271 by revising the section heading; and removing from paragraphs (a) and (b) ''MAS'' and adding ''FSS'' in their places. The revised heading reads as follows:

538.271 FSS contract awards.

* * * * *

■ 6. Amend section 538.272 by revising the section heading to read as follows:

538.272 FSS price reductions.

* * * * *

■ 7. Revise section 538.273 to read as follows:

538.273 FSS solicitation provisions and contract clauses.

(a) As prescribed in this section, insert the following provisions in the beginning of FSS solicitations:

(1) *552.238–84, Cover Page for Federal Supply Schedules.* Use in all FSS solicitations. Use Alternate I for single award Federal Supply Schedules.

(2) *552.238–85, Significant Changes.* Use in all supply and service solicitation refreshes containing revisions since the previous posting to the Government's point of entry.

(3) *552.238–86, Notice of Total Small Business Set-Aside.* Use in supply and service solicitations containing one or more special item numbers (SINs) that are set aside for small business.

(4) *552.238–87, Information Collection Requirements.* Use in all FSS solicitations.

(5) *552.238–88, Notice: Requests for Explanation or Information and Hours of Operation.* Use in all FSS solicitations.

(b) As prescribed in this section, insert the following provisions as an addendum to 52.212–1, Instructions to Offerors—Commercial Items:

(1) *552.238–70, Identification of Electronic Office Equipment Providing Accessibility for the Handicapped.* Use only in FSS solicitations for electronic office equipment.

(2) *552.238–89, Contractor's Remittance (Payment) Address.* Use in all FSS solicitations.

(3) *552.238–90, Introduction of New Supplies/Services (INSS).* Use in all FSS solicitations. Note: GSA Form 1649, Notification of Federal Supply Schedule Improvement, may be required if revising a Special Item Number (SIN).

(4) *552.238–91, Authorized Negotiators.* Use in all FSS solicitations.

(c) As prescribed in this section, insert the following provisions as an addendum to 52.212–2, Evaluation—Commercial Items, when required within the scope of the solicitation:

(1) *552.238–92, Evaluation—Commercial Items (Federal Supply Schedules).* Use in FSS standing solicitations. Use Alternate I for non-standing FSS solicitations.

(2) *552.238–93, Use of Non-Government Employees to Review Offers.* Use only in FSS solicitations when non-government employees may be utilized to review solicitation responses.

(d) As prescribed in this section, insert the following clauses as an addendum to Clause 52.212–4, Contract Terms and Conditions—Commercial Items:

(1) *552.238–71, Submission and Distribution of Authorized Federal Supply Schedule (FSS) Price Lists.* Use in all FSS solicitations and contracts.

(i) Use Alternate I, in solicitations and contracts for—

(A) Federal Supply Schedule 70;

(B) The Consolidated Schedule contracts containing information technology Special Item Numbers;

(C) Federal Supply Schedule 84; and

(D) Federal Supply Schedules for recovery purchasing (see 538.7102), use Alternate I.

(ii) If GSA is not prepared to accept electronic submissions for a particular schedule delete—

(A) The paragraph identifier ''(i)'' in (b)(1) and the word ''and'' at the end of paragraph (b)(1)(i); and

(B) Paragraphs (b)(1)(ii) and (b)(3).

(2) *552.238–72, Identification of Products that have Environmental Attributes.* Use only in FSS solicitations and contracts that contemplate items with environmental attributes.

(3) *552.238–73, Cancellation.* Use in all FSS solicitations and contracts.

(4) *552.238–74, Industrial Funding Fee and Sales Reporting.* Use in all FSS solicitations and contracts.

(5) *552.238–75, Price Reductions.* Use in all FSS solicitations and contracts. Use Alternate I in solicitations and contracts for—

(i) Federal Supply Schedule 70;

(ii) The Consolidated Schedule containing information technology Special Item Numbers;

(iii) Federal Supply Schedule 84; and

(iv) Federal Supply Schedules for recovery purchasing (see 538.7102).

(6) *552.238–81, Modifications (Federal Supply Schedules).* Use in all FSS solicitations and contracts. Use Alternate I for Federal Supply Schedules that only accept eMod.

(7) *552.238–82, Delivery Schedule.* Use only in FSS solicitations and contracts for supplies.

(8) *552.238–83 GSA Advantage!®.* Use in all FSS solicitations and contracts except the Department of Veterans Affairs Federal Supply Schedules.

(9) *552.238–94 Examination of Records by GSA Federal Supply Schedules.* Use in all FSS solicitations and contracts. With the Senior Procurement's Executive approval, the Contracting Officer may modify the clause at 552.238–9 to provide for post-award access to and the right to examine records to verify that the pre-award/modification pricing, sales or other data related to the supplies or services offered under the contract which formed the basis for the award/modification was accurate, current, and complete. The following procedures apply:

(i) Such a modification of the clause must provide for the right of access to expire 2 years after award or modification.

(ii) Before modifying the clause, the Contracting Officer must make a determination that absent such access there is a likelihood of significant harm to the Government and submit it to the Senior Procurement Executive for approval.

(iii) The determinations under paragraph (d)(2) of this section must be made on a schedule-by-schedule basis.

(10) *552.238–95, Discounts for Prompt Payments (Federal Supply Schedules).* Use in all FSS solicitations and contracts.

(11) *552.238–96, Contractor's Billing Responsibilities.* Use in all FSS solicitations and contracts.

(12) *552.238–97, Payment by Credit Card.* Use in all FSS solicitations and contracts.

(13) *552.238–98, Warranty (Federal Supply Schedules).* Use in all FSS solicitations and contracts.

(14) *552.238–99, Deliveries to the U.S. Postal Service.* Use only in FSS solicitations and contracts for mailable articles when delivery to a U.S. Postal Service (USPS) facility is contemplated.

(15) *552.238–100, Characteristics of Electric Current.* Use only in FSS solicitations and contracts when the supply of equipment which uses electrical current is contemplated.

(16) *552.238–101, Marking and Documentation Requirements for Shipping.* Use only in FSS solicitations and contracts for supplies when the need for outlining the minimum information and documentation required for shipping is contemplated.

(17) *552.238–102, Inspection.* Use only in FSS solicitations and contracts when all items are to be inspected at a destination by a Government representative. Use Alternate I when it is anticipated that additional terms and conditions regarding responsibility for rejected supplies and additional costs for inspection and testing are required.

(18) *552.238–103, Vendor Managed Inventory (VMI) Program.* Use only in FSS solicitations and contracts for supplies when a VMI Program is contemplated.

(19) *552.238–104, Order Acknowledgement.* Use only in FSS solicitations and contracts for supplies.

(20) *552.238–105, Urgent Requirements.* Use only in FSS solicitations and contracts for supplies.

(21) *552.238–106, Post-Award Samples.* Use only in FSS solicitations and contracts for the acquisition of carpet.

(22) *552.238–107, Restriction on the Acceptance of Orders.* Use only in FSS solicitations and contracts for electrostatic copying equipment, supplies (toner, developer, fuser oil) for such equipment, repair or replacement parts for such equipment, and maintenance or repair service for such equipment.

(23) *552.238–108, Separate Charge for Performance Oriented Packaging (POP).* Use only in FSS solicitations and contracts for items defined as hazardous under Federal Standard No. 313.

(24) *552.238–109, Additional Service Charge for Delivery within Consignee's Premises.* Use only in FSS solicitations and contracts for supplies when allowing offerors to propose separate charges for deliveries within the consignee's premises.

(25) *552.238–110, Shipping Points.* Use only in FSS solicitations and contracts for supplies when F.O.B. Origin shipments are contemplated.

(26) *552.238–111, Contact for Contract Administration.* Use in all FSS solicitations and contracts.

(27) *552.238–112, Clauses for Overseas Coverage.* Use only in FSS solicitations and contracts when overseas acquisition is contemplated. The following clauses and provisions shall also be inserted in full text, when applicable.

(i) 52.214–34, Submission of Offers in the English Language.

(ii) 52.214–35, Submission of Offers in U.S. Currency.

(iii) 52.247–34, FOB Destination.

(iv) 52.247–38, FOB Inland Carrier, Country of Exportation.

(v) 52.247–39, FOB Inland Point, Country of Importation.

(vi) 552.238–100, Characteristics of Electric Current.

(vii) 552.238–101, Marking and Documentation Requirements Per Shipment.

(viii) 552.238–113, Parts and Service.

(ix) 552.238–114, Delivery Prices Overseas.

(x) 552.238–115, Transshipments.

(xi) 552.238–116, Foreign Taxes and Duties.

(28) *552.238–117, English Language and U.S. Dollar Requirements.* Use in all FSS solicitations and contracts.

(29) *552.238–118, Delivery Prices.* Use in all FSS solicitations and contracts.

(30) *552.238–119, Federal Excise Tax.* Use only in FSS solicitations and contracts for tire and tube acquisitions.

(31) *552.238–120, Guarantee.* Use only in FSS solicitations and contracts for major appliances.

(32) *552.238–121, Electronic Commerce.* Use in all FSS solicitations and contracts except the Department of Veterans Affairs Federal Supply Schedules.

(33) *552.238–122, Imprest Funds (Petty Cash).* Use in all FSS solicitations and contracts.

(34) *552.238–123, Dissemination of Information by Contractor.* Use in all FSS solicitations and contracts.

(35) *552.238–124, Deliveries Beyond the Contractual Period—Placing of Orders.* Use only in FSS solicitations and contracts for supplies.

(36) *552.238–125, Interpretation of Contract Requirements.* Use in all FSS solicitations and contracts.

(37) *552.238–126, Export Traffic Release (Supplies).* Use in FSS solicitations and contracts for supplies, except vehicles.

(38) *552.238–127, Export Traffic Release (Vehicles).* Use only in FSS solicitations and contracts for vehicles.

(39) *552.238–128, Carload Shipments.* Use only in FSS solicitations and contracts for vehicles.

(40) *552.238–129, Spare Parts Kit.* Use only in FSS solicitations and contracts for items requiring spare part kits.

(41) *552.238–130, Authentication Supplies and Services.* Use in Federal Supply Schedule 70 solicitations only. When the Federal Supply Schedule 70 contract is awarded, use only if the awarded contract includes Special Item Numbers (SINs) associated with the Homeland Security Presidential Directive 12 (HSPD–12).

(42) *552.238–131, Commercial Satellite Communication (COMSATCOM) Services.* Use only in FSS solicitations and contracts for COMSATCOM services.

(43) *552.238—132, Environmental Protection Agency Registration Requirement.* Use only in FSS solicitations and contracts for supplies when items may require registration with the Environmental Protection Agency.

■ 8. Amend section 538.7004 by revising paragraphs (a), (b), and (c) to read as follows:

538.7004 Solicitation provisions and contract clauses.

(a) As an addendum to 52.212–4, Contract Terms and Conditions—Commercial Items the contracting officer shall insert the clause at 552.238–77, Definition (Federal Supply Schedules), in solicitations and contracts for:

(1) Federal Supply Schedule 70;

(2) The Consolidated Schedule containing information technology SINs; and

(3) Federal Supply Schedule 84.

(b) As an addendum to 52.212–4, Contract Terms and Conditions—Commercial Items the contracting officer shall insert the clause at 552.238–78, Scope of Contract (Eligible Ordering Activities), in solicitations and contracts for:

(1) Federal Supply Schedule 70; and

(2) The Consolidated Schedule containing information technology SINs; and

(3) Federal Supply Schedule 84.

(c) As an addendum to 52.212–4, Contract Terms and Conditions—Commercial Items the contracting officer shall insert the clause at 552.238–79, Use of Federal Supply Schedule Contracts by Certain Entities—Cooperative Purchasing, in solicitations and contracts for:

(1) Federal Supply Schedule 70;

(2) The Consolidated Schedule containing information technology SINs; and

(3) Federal Supply Schedule 84.

* * * * *

■ 9. Amend section 538.7104 by revising paragraphs (a), (b), and (c) to read as follows:

538.7104 Solicitation provisions and contract clauses.

(a) As an addendum to 52.212–4, Contract Terms and Conditions—Commercial Items the contracting officer shall insert the clause at 552.238–76, Definition (Federal Supply Schedules)–Recovery Purchasing, in Federal Supply Schedule solicitations and contracts which contain products and services determined by the Secretary of Homeland Security to facilitate recovery from major disasters, terrorism, or nuclear, biological, chemical, or radiological attack.

(b) As an addendum to 52.212–4, Contract Terms and Conditions—Commercial Items the contracting officer shall insert the clause at 552.238–78, Scope of Contract (Eligible Ordering Activities), with Alternate I in Federal Supply Schedule solicitations and contracts which contain products and services determined by the Secretary of Homeland Security to facilitate recovery from major disasters, terrorism, or nuclear, biological, chemical, or radiological attack.

(c) As an addendum to 52.212–4, Contract Terms and Conditions—Commercial Items the contracting officer shall insert the clause at 552.238–80, Use of Federal Supply Schedule Contracts by Certain Entities—Recovery Purchasing, in Federal Supply Schedule solicitations and contracts which contain products and services determined by the Secretary of Homeland Security that facilitate recovery from major disasters, terrorism, or nuclear, biological, chemical, or radiological attack.

* * * * *

PART 552—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

■ 10. The authority citation for 48 CFR part 552 continues to read as follows:

Authority: 40 U.S.C. 121(c).

552.215–71 [Removed and Reserved]

■ 11. Remove and reserve section 552.215–71.

■ 12. Amend section 552.238–70 by revising the introductory text and the date of the provision; and removing from the end of the section ''(End of clause)'' and adding ''(End of provision)'' in its place.

552.238–70 Identification of Electronic Office Equipment Providing Accessibility for the Handicapped.

As prescribed in 538.273(b)(1), insert the following provision:

Identification of Electronic Office Equipment Providing Accessibility for the Handicapped (Date)

* * * * *

■ 13. Amend section 552.238–71 by revising the section heading, the introductory text, and the clause heading to read as follows:

552.238–71 Submission and Distribution of Authorized Federal Supply Schedule (FSS) Price Lists.

As prescribed in 538.273(d)(1), insert the following clause:

Submission and Distribution of Authorized Federal Supply Schedule (FSS) Price Lists (Date)

* * * * *

552.238–72 [Amended]

■ 14. Amend section 552.238–72 by removing from the introductory text ''538.273(a)(3)'' and adding ''538.273(d)(2)'' in its place.

552.238–73 [Amended]

■ 15. Amend section 552.238–73 by removing from the introductory text ''538.273(a)(4)'' and adding ''538.273(d)(3)'' in its place.

552.238–74 [Amended]

■ 16. Amend section 552.238–74 by removing from the introductory text ''538.273(b)(1)'' and adding ''538.273(d)(4)'' in its place.

■ 17. Amend section 552.238–75 by:

■ a. Removing from the introductory text ''538.273(b)(2)'' and adding ''538.273(d)(5)'' in its place; and

■ b. Revising the date and introductory text of Alternate I to read as follows:

552.238–75 Price Reductions.

* * * * *

Alternate I (Date): As prescribed in 538.273(d)(5) substitute the following paragraph:

* * * * *

■ 18. Amend section 552.238–78 by—

■ a. Revising the date of the clause; and removing from paragraph (f)(2) ''552.232–79'' and adding ''552.238–97'' in its place (twice); and

■ b. Amending Alternate I by revising the date of the Alternate; and removing from paragraph (a)(8) ''GSA'' and adding ''GSA/VA'' in its place (twice).

The revisions read as follows:

552.238–78 Scope of Contract (Eligible Ordering Activities).

* * * * *

Scope of Contract (Eligible Ordering Activities) (Date)

* * * * *

Alternate I (Date). * * *

■ 19. Amend section 552.238–81 by—

■ a. Removing from the introductory text ''538.273(b)'' and adding ''538.273(d)(6)'' in its place; and

■ b. Amending Alternate I by revising the introductory text to read as follows:

552.238–81 Modification (Federal Supply Schedule).

* * * * *

Alternate I (Date): As prescribed in 538.273(d)(6)(i), add the following paragraph (f) to the basic clause:

* * * * *

■ 20. Add sections 552.238–82 through 552.238–134 to read as follows:

552.238.82 Delivery Schedule.

As prescribed in 538.273(d)(7), insert the following clause:

Delivery Schedule (Date)

(a) *Time of Delivery.* The Contractor shall deliver to destination within the number of

calendar days after receipt of order (ARO) in the case of F.O.B. Destination prices; or to place of shipment in transit in the case of F.O.B. Origin prices, as set forth below. Offerors shall insert in the ''Time of Delivery (days ARO)'' column in the schedule of Items a definite number of calendar days within which delivery will be made. In no case shall the offered delivery time exceed the Contractor's normal business practice. The Government requires the Contractor's normal delivery time, as long as it is less than the ''stated'' delivery time(s) shown below. If the Offeror does not insert a delivery time in the schedule of items, the Offeror will be deemed to offer delivery in accordance with the Government's stated delivery time, as stated below *[The contracting officer shall insert the solicited items or Special Item Numbers (SIN) as well as a reasonable delivery time that corresponds with each item or SIN, if known]:*

Items or group of items (special item no. or nomenclature)	Government's stated delivery time (days ARO)	Contractor's delivery time
_____	*_____*	_____
_____	*_____*	_____
_____	*_____*	_____

(b) *Expedited Delivery Times.* For those items that can be delivered quicker than the delivery times in paragraph (a) of this clause, the Offeror is requested to insert below, a time (hours/days ARO) that delivery can be made when expedited delivery is requested.

Items or group of items (special item no. or nomenclature)	Expedited delivery time (hours/days ARO)
_____	_____
_____	_____
_____	_____

(c) *Overnight and 2-Day Delivery Times.* Ordering activities may require overnight or 2-day delivery. The Offeror is requested to annotate its price list or by separate attachment identify the items that can be delivered overnight or within 2 days. Contractors offering such delivery services will be required to state in the cover sheet to its FSS price list details concerning this service.

(End of clause)

552.238–83 GSA ADVANTAGE!®

As prescribed in 538.273(d)(8), insert the following clause:

GSA Advantage!® (Date)

(a) The Contractor shall participate in the GSA Advantage!® online shopping service. Information and instructions regarding Contractor participation are contained in clause 552.238–121, Electronic Commerce.

(b) The Contractor shall refer to contract clauses 552.238–71, Submission and Distribution of Authorized FSS Price Lists (which provides for submission of price lists on a common-use electronic medium), I–FSS–600, Contract Price Lists (which provides information on electronic contract data), and 552.238–81, Modifications (which addresses electronic file updates).

(End of clause)

552.238–84 Cover Page for Federal Supply Schedules.

As prescribed in 538.273(a)(1), insert the following provision:

Cover Page for Federal Supply Schedules (Date)

Solicitation No. [The contracting officer shall insert the solicitation number here] *_____*

Geographic Area. *[The contracting officer shall indicate whether the solicitation is CONUS or Worldwide] Federal Supply Schedule Contract for *_____*.*

[For supplies, the Contracting Officer shall complete the information required by paragraph (a) and delete paragraph (b) in its entirety. For services, the Contracting Officer shall complete the information required by paragraph (b) and delete (a) in its entirety. For solicitations containing both supplies and services, the Contracting Officer shall complete paragraphs (a) and (b).]

(a) Federal Supply Classification (FSC) GROUP: *_____* PART: *_____* SECTION: *_____*

SUPPLY: *_____* FSC CLASS(ES)/PRODUCT CODE(S)/NAICS: *_____*.

(b) STANDARD INDUSTRY GROUP: *_____* SERVICE: *_____* SERVICE CODE(S)/NAICS: *_____*.

(End of provision)

Alternate I (Date): As prescribed at 538.237(a)(1), add the following paragraph (c) to the basic provision:

(c) PERIOD: *_____* THROUGH *_____*.

552.238–85 Significant Changes.

As prescribed in 538.273(a)(2), insert the following provision:

Significant Changes (Date)

The following significant changes have been made to the solicitation since the issuance of the last refresh: *[The Contracting Officer shall insert the most recent solicitation revisions since its previous posting to the Government's point of entry *_____*].*

(End of provision)

552.238–86 Notice of Total Small Business Set-Aside.

As prescribed in 538.273(a)(3), insert the following provision:

Notice of Total Small Business Set-Aside (Date)

The clause entitled ''Notice of Total Small Business Set-Aside,'' applies to the following: *[The contracting officer shall insert the special item numbers (SINs) set aside for small businesses] *_____*.*

(End of provision)

552.238–87 Information Collection Requirements.

As prescribed in 538.273(a)(4), insert the following provision:

Information Collection Requirements (Date)

The information collection requirements contained in this solicitation/contract are either required by regulation or approved by the Office of Management and Budget pursuant to the Paperwork Reduction Act and assigned OMB Control No. 3090–0163.

(End of provision)

552.238–88 Notice: Requests for Explanation or Information and Hours of Operation.

As prescribed in 538.273(a)(5), insert the following provision:

Notice: Requests for Explanation or Information and Hours of Operation (Date)

(a) Oral or written requests for explanation or information regarding this solicitation shall be directed to [*The contracting officer shall insert the contact information for the office responsible for responding to questions regarding the solicitation*]: *_____*; or Phone *_____*; or Email: *_____*. IMPORTANT: DO NOT ADDRESS OFFERS, MODIFICATIONS OR WITHDRAWALS TO THE ABOVE ADDRESS. THE ADDRESS DESIGNATED FOR RECEIPT OF OFFERS IS CONTAINED ELSEWHERE IN THIS SOLICITATION.

(b) GSA's hours of operation are 8:00 a.m. to 4:30 p.m. eastern standard time.

(End of provision)

552.238–89 Contractor's Remittance (Payment) Address.

As prescribed in 538.273(b)(2), insert the following provision:

Contractor's Remittance (Payment) Address (Date)

(a) Payment by electronic funds transfer (EFT) is the preferred method of payment. However, under certain conditions, the ordering activity may elect to make payment by check. The Offeror shall indicate below the payment address to which checks shall be mailed for payment of proper invoices submitted under a resultant contract.

Payment Address:	

(b) Offeror shall furnish by attachment to this solicitation, the remittance (payment) addresses of all authorized participating dealers receiving orders and accepting payment by check in the name of the Contractor in care of the dealer, if different from their ordering address(es) specified elsewhere in this solicitation. If a dealer's ordering and remittance address differ, both must be furnished and identified as such.

(c) All Offerors are cautioned that if the remittance (payment) address shown on an actual invoice differs from that shown in paragraph (b) of this provision or on the attachment, the remittance address(es) in paragraph (b) of this provision or attached will govern. Payment to any other address, except as provided for through EFT payment methods, will require an administrative change to the contract.

Note: All orders placed against a Federal Supply Schedule contract are to be paid by the individual ordering activity placing the order. Each order will cite the appropriate ordering activity payment address, and proper invoices shall be sent to that address. Proper invoices shall be sent to GSA and/or VA only for orders placed by GSA and/or VA.

(End of provision)

552.238–90 Introduction of New Supplies/Services (INSS).

As prescribed in 538.273(b)(3), insert the following provision:

Introduction of New Supplies/Services (INSS) (Date)

(a) *Definition.* Introduction of New Supplies/Services Special Item Number (INSS SIN) means a new or improved supply or service—within the scope of the Federal Supply Schedule (FSS), but not currently available under any Federal Supply Schedule contract—that provides a new service, function, task, or attribute that may provide a more economical or efficient means for ordering activities to accomplish their missions. It may significantly improve an existing supply or service. It may be a supply or service existing in the commercial market, but not yet introduced to the Federal Government.

(b) Offerors are encouraged to introduce new or improved supplies or services via INSS SIN at any time by clearly identify the INSS SIN item in the offer.

(c) The Contracting Officer has the sole discretion to determine whether a supply or service will be accepted as an INSS SIN item. The Contracting Officer will evaluate and process the offer and may perform a technical review. The INSS SIN provides temporary placement until the Contracting Officer formally categorizes the new supply or service.

(d) If the Contractor has an existing schedule contract, the Government may, at the sole discretion of the Contracting Officer, modify the existing contract to include the INSS SIN item in accordance with 552.238–81, Modifications (Federal Supply Schedules).

(End of provision)

552.238–91 Authorized Negotiators.

As prescribed in 538.273(b)(4), insert the following provision:

Authorized Negotiators (Date)

The offeror shall provide the names of all persons authorized to negotiate with the Government in connection with this request for proposals or quotations. (List the names, titles, telephone numbers and electronic mail address of the authorized negotiators.)

(End of provision)

552.238–92 Evaluation—Commercial Items (Federal Supply Schedule)

As prescribed in 538.273(c)(1), insert the following provision:

Evaluation—Commercial Items (Federal Supply Schedule) (Date)

(a) The Government may make multiple awards for the supplies or services offered in response to this solicitation that meet the definition of a ''commercial item'' in FAR 52.202–1. Awards may be made to those responsible offerors that offer reasonable pricing, conforming to the solicitation, and will be most advantageous to the Government, taking into consideration the multiplicity and complexity of items of various manufacturers and the differences in performance required to accomplish or produce required end results, production and distribution facilities, price, compliance with delivery requirements, and other pertinent factors. By providing a selection of comparable supplies or services, ordering activities are afforded the opportunity to fulfill their requirements with the item(s) that constitute the best value and that meet their needs at the lowest overall cost.

(b) A written notice of award or acceptance of an offer, mailed or otherwise furnished to the offeror within the time for acceptance specified in the offer, shall result in a binding contract without further action by either party. Before the offer's specified expiration time, the Government may accept an offer (or part of an offer), whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award.

(End of provision)

Alternate I (Date): As prescribed by 538.273(c)(1) add the following paragraph (c) to the basic provision:

(c) The Government reserves the right to award only one contract for all or a part of a manufacturer's product line. When two or more offerors (*e.g.,* dealers/resellers) offer the identical product, award may be made competitively to only one offeror on the basis of the lowest price. (Discounts for early payment will not be considered as an evaluation factor in determining the low offeror). During initial open season for an option period, any offers that are equal to or lower than the current contract price received for identical items will be considered. Current Contractors will also be allowed to submit offers for identical items during this initial open season. The current Contractor which has the identical item on contract will be included in the evaluation process. The Government will evaluate all offers and may award only one contract for each specified product or aggregate group.

552.238–93 Use of Non-Government Employees To Review Offers.

As prescribed in 538.273(c)(2), insert the following provision:

Use of Non-Government Employees to Review Offers (Date)

(a) The Government may employ individual technical consultants/advisors/contractors from the below listed organizations to review limited portions of the technical, management and price proposals to assist the government in both pre-award and post-award functions. [*The Contracting Officer shall insert a list of organizations used to review solicitation responses and execute a non-disclosure and organizational conflict of interest statement for all individuals conducting reviews.*] *_____*.

(b) These representatives will be used to advise on specific technical, management, and price matters and shall not, under any circumstances, be used as voting evaluators. However, the Government may consider the advice provided in its evaluation process. In addition, Contractor personnel may be used in specific contract administration tasks (*e.g.,* administrative filing, review of deliverables, etc.).

(c) If individual technical consultants/advisors/contractors are utilized as described in paragraph (b) of this section, they will be required to execute a non-disclosure and organizational conflict of interest statements.

(End of provision)

552.238–94 Examination of Records by GSA (Federal Supply Schedules).

As prescribed in 538.273(d)(9) insert the following clause:

Examination of Records by GSA (Federal Supply Schedules) (Date)

The Contractor agrees that the Administrator of General Services or any

duly authorized representative shall have access to and the right to examine any books, documents, papers and records of the contractor involving transactions related to this contract for overbillings, billing errors, compliance with the Price Reduction clause and compliance with the Industrial Funding Fee and Sales Reporting clause of this contract. This authority shall expire 3 years after final payment. The basic contract and each option shall be treated as separate contracts for purposes of applying this clause.

(End of clause)

552.238–95 Discounts for Prompt Payment (Federal Supply Schedules).

As prescribed in 538.273(d)(10), insert the following clause:

Discounts for Prompt Payment (Federal Supply Schedules) (Date)

(a) Discounts for early payment (hereinafter referred to as ''discounts'' or ''the discount'') will be considered in evaluating the relationship of the Offeror's concessions to the Government vis-a-vis the Offeror's concessions to its commercial and Federal non-schedule customers, but only to the extent indicated in this clause.

(b) Discounts will not be considered to determine the low Offeror in the situation described in the ''Offers on Identical Products'' provision of this solicitation.

(c) Uneconomical discounts will not be considered as meeting the criteria for award established by the Government. In this connection, a discount will be considered uneconomical if the annualized rate of return for earning the discount is lower than the ''value of funds'' rate established by the Department of the Treasury and published quarterly in the **Federal Register**. The ''value of funds'' rate applied will be the rate in effect on the date specified for the receipt of offers.

(d) Discounts for early payment may be offered either in the original offer or on individual invoices submitted under the resulting contract. Discounts offered will be taken by the ordering activity if payment is made within the discount period specified.

(e) Discounts that are included in offers become a part of the resulting contracts and are binding on the Contractor for all orders placed under the contract. Discounts offered only on individual invoices will be binding on the Contractor only for the particular invoice on which the discount is offered.

(f) In connection with any discount offered for prompt payment, time shall be computed from the date of the invoice. For the purpose of computing the discount earned, payment shall be considered to have been made on the date which appears on the payment check or the date on which an electronic funds transfer was made.

(End of clause)

552.238–96 Contractor's Billing Responsibilities.

As prescribed in 538.273(d)(11) insert the following clause:

Contractor's Billing Responsibilities (Date)

(a) The Contractor is required to perform all billings made pursuant to this contract. However, if the Contractor has dealers that participate on the contract and the billing/payment process by the Contractor for sales made by the dealer is a significant administrative burden, the following alternative procedures may be used. Where dealers are allowed by the Contractor to bill ordering activities and accept payment in the Contractor's name, the Contractor agrees to obtain from all dealers participating in the performance of the contract a written agreement, which will require dealers to—

(1) Comply with the same terms and conditions as the Contractor for sales made under the contract;

(2) Maintain a system of reporting sales under the contract to the manufacturer, which includes—

(i) The date of sale;

(ii) The ordering activity to which the sale was made;

(iii) The service or supply/model sold;

(iv) The quantity of each service or supply/model sold;

(v) The price at which it was sold, including discounts; and

(vi) All other significant sales data.

(3) Be subject to audit by the Government, with respect to sales made under the contract; and

(4) Place orders and accept payments in the name of the Contractor in care of the dealer.

(b) An agreement between a Contractor and its dealers pursuant to this procedure will not establish privity of contract between dealers and the Government.

(End of clause)

552.238–97 Payment by Credit Card.

As prescribed in 538.1203(d)(12) insert the following clause:

Payment by Credit Card (Date)

(a) *Definitions.*

Credit card or Charge card means any credit or charge card used to pay for purchases, including the Government-wide Commercial Purchase Card.

Government-wide commercial purchase card means a uniquely numbered charge card issued by a Contractor under GSA's Government-wide Contract for Fleet, Travel, and Purchase Card Services to named individual Government employees or entities to pay for official Government purchases.

Oral order means an order placed orally either in person or by telephone.

(b) The Contractor must accept credit and charge cards for payments equal to or less than the micro-purchase threshold (see Federal Acquisition Regulation 2.101) for oral or written orders under this contract.

(c) The Contractor and the ordering activity may agree to use of a credit or charge card for purchases in dollar amounts over the micro-purchase threshold, and the Government encourages the Contractor to accept payment by the credit or charge card. The dollar value of a credit or charge card transaction must not exceed the ordering activity's established limit. If the Contractor will not accept payment by the credit or charge card for an order exceeding the micro-purchase threshold, the Contractor must so advise the ordering agency within 24 hours of receipt of the order.

(d) The Contractor shall not process a transaction for payment through the credit or charge card clearinghouse until the purchased supplies have been shipped or services performed. Unless the credit or charge cardholder requests correction or replacement of a defective or faulty item under other contract requirements, the Contractor must immediately credit a cardholder's account for items returned as defective or faulty.

(e) Payments made using the Government-wide commercial purchase card are not eligible for any negotiated prompt payment discount. Payment made using an ordering activity debit card shall receive the applicable prompt payment discount.

(End of clause)

552.238–98 Warranty (Federal Supply Schedules).

As prescribed in 538.1203(d)(13), insert the following clause:

Warranty (Federal Supply Schedules) (Date)

(a) Applicable to domestic locations. Unless specified otherwise in this contract, the Contractor's standard warranty as stated in the Contractor's price list applies to this contract.

(b) Applicable to overseas destinations. Unless specified otherwise in this contract, the Contractor's standard warranty as stated in the price list applies to this contract, except as follows:

(1) The Contractor must provide, at a minimum, a warranty on all non-consumable parts for a period of 90 days from the date that the ordering activity accepts the supply.

(2) The Contractor must supply parts and labor required under the warranty provisions free of charge.

(3) The Contractor must bear the transportation costs of returning the supplies to and from the repair facility, or the costs involved with Contractor personnel traveling to the ordering activity facility for the purpose of repairing the supply onsite, during the 90-day warranty period.

(End of clause)

552.238–99 Deliveries to the U.S. Postal Service.

As prescribed in 538.273(d)(14), insert the following clause:

Deliveries to the U.S. Postal Service (Date)

(a) *Applicability.* This clause applies to orders placed for the U.S. Postal Service (USPS) and accepted by the Contractor for the delivery of supplies to a USPS facility (consignee).

(b) *Mode/Method of Transportation.* Unless the Contracting Officer grants a waiver of this requirement, any shipment that meets the USPS requirements for mailability (*i.e.,* 70 pounds or less, combined length and girth not more than 108 inches, etc.) delivery shall be accomplished via the use of the USPS. Other commercial services shall not be used, but this does not preclude the Contractor

from making delivery by the use of the Contractor's own vehicles.

(c) *Time of Delivery.* Notwithstanding the required time for delivery to destination as may be specified elsewhere in this contract, if shipments under this clause are mailed not later than five (5) calendar days before the required delivery date, delivery shall be deemed to have been made timely.

(End of clause)

552.238–100 Characteristics of Electric Current.

As prescribed in 538.273(d)(15), insert the following clause:

Characteristics of Electric Current (Date)

Contractors supplying equipment which uses electrical current are required to supply equipment suitable for the electrical system at the location at which the equipment is to be used as specified on the order.

(End of clause)

552.238–101 Marking and Documentation Requirements for Shipping.

As prescribed in 538.273(d)(16), insert the following clause:

Marking and Documentation Requirements for Shipping (Date)

(a) It shall be the responsibility of the ordering activity to determine the full marking and documentation requirements necessary under the various methods of shipment authorized by the contract. Set forth is the minimum information and documentation that will be required for shipment. In the event the ordering activity fails to provide the essential information and documentation, the Contractor shall, within three days after receipt of order, contact the ordering activity and advise them accordingly. The Contractor shall not proceed with any shipment requiring transshipment via U.S. Government facilities without the stated prerequisites:

(b) *Direct Shipments.* The Contractor shall mark all items ordered against this contract with indelible ink, paint or fluid, as follows:

(1) Traffic Management or Transportation Officer at FINAL destination.

(2) Ordering Supply Account Number.

(3) Account number.

(4) Delivery Order or Purchase Order Number.

(5) National Stock Number, if applicable; or Contractor's item number.

(6) Box _____ of _____ Boxes.

(7) Nomenclature (brief description of items).

(End of clause)

552.238–102 Inspection.

As prescribed in 538.273(d)(17), insert the following clause:

Inspection (Date)

Inspection of all purchases under this contract will be made at destination by an authorized Government representative.

(End of clause)

Alternate I (Date): As prescribed by 538.273(d)(17), substitute the following for the basic clause:

(a) *Inspection by the Government.* It is anticipated that the supplies purchased under this contract will be inspected at destination by the Government to ensure conformance with technical requirements as specified herein.

(b) *Responsibility for Rejected Supplies.* If, after due notice of rejection, the Contractor fails to remove or provide instructions for the removal of rejected supplies pursuant to the Contracting Officer's instructions, the Contractor shall be liable for all costs incurred by the Government in taking such measures as are expedient to avoid unnecessary loss to the Contractor. In addition to any other remedies which may be available under this contract, the supplies may be stored for the Contractor's account or sold to the highest bidder on the open market and the proceeds applied against the accumulated storage and other costs, including the cost of the sale.

(c) *Additional Costs for Inspection and Testing.* (The Contracting Officer shall insert the rates). When prior rejection makes reinspection or retesting necessary, the following charges are applicable. When inspection or testing is performed by or under the direction of GSA, charges will be at the rate of $_____ per man-hour or fraction thereof if the inspection is at a GSA distribution center; $_____ per man-hour or fraction thereof, plus travel costs incurred, if the inspection is at another location; and $_____per man-hour or fraction thereof for laboratory testing, except that when a testing facility other than a GSA laboratory performs all or part of the required tests, the Contractor shall be assessed the actual cost incurred by the Government as a result of testing at such facility. When inspection is performed by or under the direction of any agency other than GSA, the charges indicated above may be used, or the agency may assess the actual cost of performing the inspection and testing.

552.238–103 Vendor Managed Inventory (VMI) Program.

As prescribed in 538.273(d)(18), insert the following clause:

Vendor Managed Inventory (VMI) Program (Date)

(a) The term ''Vendor Managed Inventory'' describes a system in which the Contractor monitors and maintains specified inventory levels for selected items at designated stocking points. VMI enables the Contractor to plan production and shipping more efficiently. Stocking points benefit from reduced inventory but steady stock levels.

(b) Contractors that commercially provide a VMI type system may enter into similar partnerships with customers under a Blanket Purchase Agreement.

(End of clause)

552.238–104 Order Acknowledgement.

As prescribed in 538.273(d)(19), insert the following clause:

Order Acknowledgement (Date)

Contractors shall acknowledge only those orders which state ''Order Acknowledgement Required''. These orders shall be acknowledged within 10 calendar days after receipt. Such acknowledgement shall be sent to the ordering activity placing the order and contain information pertinent to the order, including the anticipated delivery date.

(End of clause)

552.238–105 Urgent Requirements.

As prescribed in 538.273(d)(20), insert the following clause:

Urgent Requirements (Date)

When the Federal Supply Schedule contract delivery period does not meet the bona fide urgent delivery requirements of an ordering activity, the ordering activity is encouraged, if time permits, to contact the Contractor for the purpose of obtaining accelerated delivery. The Contractor shall reply to the inquiry within three (3) business days after receipt. (Telephonic replies shall be confirmed by the Contractor in writing.) If the Contractor offers an accelerated delivery time acceptable to the ordering activity, any order(s) placed pursuant to the agreed upon accelerated delivery time frame shall be delivered within this shorter delivery time and in accordance with all other terms and conditions of the contract.

(End of clause)

552.238–106 Post-Award Samples.

As prescribed in 538.273(d)(21), insert the following clause:

Post-Award Samples (Date)

(a) Within 20 calendar days after approval of the brochure proof, Contractors who have received an award on carpet items are required to:

(1) Furnish the Contracting Officer with 5 sets (by sets, not loosely packed) of samples approximately 12 by 12 inches of all patterns and/or colors awarded;

(2) Furnish such additional sets of samples as may be requested during the contract period;

(3) Furnish a set of small cuttings approximately 3 by 5 inches of each quality carpet awarded to all ordering activities to which brochures are mailed, except that such sample cuttings need not be furnished when the brochure distributed by the Contractor was fully swatched with all available colors for each quality carpet awarded;

(4) Furnish sets of 3 by 5 inch samples to any ordering activity when specifically requested to do so notwithstanding the fact that the brochure was fully swatched; and

(5) Furnish the Contracting Officer with one 18 inch by 24 inch sample of each quality carpet and in each color or pattern covered by the contract, with the clear understanding that the Government reserves the right at its option to request one additional 18 inch by 24 inch sample in any one or all qualities in each pattern and/or color specified, and the Contractor agrees to honor such request. These samples will be returned at the Contractor's expense after

expiration of the contract provided they have not been consumed as a result of the Government's sample requirements.

(b) Each individual sample, or cutting, shall bear the Contractor's name, manufacturer's name, brand or quality name, pattern or color number and name, and the National Stock Number.

(End of clause)

552.238–107 Restriction on the Acceptance of Orders.

As prescribed in 538.273(d)(22), insert the following clause:

Restriction on the Acceptance of Orders (Date)

No orders shall be accepted from, and no deliveries shall be made to any ship of the United States Navy or the Military Sealift Command. This prohibition shall include all electrostatic copying equipment, supplies (toner, developer, fuser oil) for such equipment, repair or replacement parts for such equipment, and maintenance or repair service for such equipment.

(End of clause)

552.238–108 Separate Charge for Performance Oriented Packaging (POP).

As prescribed in 538.273(d)(23), insert the following clause:

Separate Charge for Performance Oriented Packaging (POP) (Date)

(a) Preservation, packaging, packing, and marking and labeling of domestic and overseas HAZMAT SURFACE SHIPMENTS shall comply with all requirements listed below. Offerors are requested to quote a separate charge, if applicable.

(1) International Maritime Dangerous Goods (IMDG) Code established by the International Maritime Organization (IMO) in accordance with the United Nations (UN) Recommendations on the Transportation of Dangerous Goods (Note: Marine pollutants must be labeled as required by the IMDG Code);

(2) The performance oriented packaging requirements contained in the U.S. Department of Transportation (DOT) Hazardous Materials Regulations (HMR; 49 CFR Parts 171 through 180) effective October 1, 1991 (Note: The ''Combustible'' and ''ORM'' classifications containing these requirements are not permitted by the IMDG Code and cannot be used);

(3) Occupational Safety and Health Administration (OSHA) Regulations 29 CFR Parts 1910.101 through 1910.120 and 1910.1000 through 1910.1500, relating to Hazardous and Toxic Substances; and

(4) Any preservation, packaging, packing, and marking and labeling requirements contained elsewhere in the solicitation.

(b) Offerors are requested to list the hazardous material item to which the separate charge applies in the spaces provided below or on a separate attachment. These separate charges will be accepted as part of the award, if considered reasonable, and shall be included in the Contractor's published catalog and/or price list.

Items (SINs or descriptive name of articles, as appropriate)	Charge for performance oriented packaging

(c) Ordering activities will not be obligated to utilize the Contractor's services for Performance Oriented Packaging, and they may obtain such services elsewhere if desired. However, the Contractor shall provide items in Performance Oriented Packaging when such packing is specified on the delivery order. The Contractor's contract price and the charge for Performance Oriented Packaging will be shown as separate entries on the delivery order.

(d) The test reports showing compliance with package requirements will be made available to contract administration/management representatives upon request.

(End of clause)

552.238–109 Additional Service Charge for Delivery within Consignee's Premises.

As prescribed in 538.273(d)(24), insert the following clause:

Additional Service Charge for Delivery Within Consignee's Premises (Date)

(a) Offerors are requested to insert, in the spaces provided below or by attachment hereto, a separate charge for ''Delivery Within Consignee's Premises'' applicable to each shipping container to be shipped. (Articles which are comparable in size and weight, and for which the same charge is applicable, shall be grouped under an appropriate item description.) These additional charges will be accepted as part of the award, if considered reasonable, and shall be included in the Contractor's published catalog and/or price list.

(b) Ordering activities are not obligated to issue orders on the basis of ''Delivery Within Consignee's Premises,'' and Contractors may refuse delivery on that basis provided such refusal is communicated in writing to the ordering activity issuing such orders within 5 days of the receipt of such order by the Contractor and provided further, that delivery is made in accordance with the other delivery requirements of the contract. Failure of the Contractor to submit this notification within the time specified shall constitute acceptance to furnish ''Delivery Within Consignee's Premises'' at the additional charge awarded. When an ordering activity issues an order on the basis of ''Delivery Within Consignee's Premises'' at the accepted additional charge awarded and the Contractor accepts such orders on that basis, the Contractor will be obligated to provide delivery ''F.o.b. Destination, Within Consignee's Premises'' in accordance with FAR 52.247–35, which is then incorporated by reference, with the exception that an additional charge as provided herein is allowed for such services. Unless otherwise stipulated by the Offeror, the additional charges awarded hereunder may be applied to any delivery within the 48 contiguous States and the District of Columbia.

(c) When exercising their option to issue orders on the basis of delivery service as provided herein, ordering activities will specify ''Delivery Within Consignee's Premises'' on the order, and will indicate the exact location to which delivery is to be made. The Contractor's delivery price and the additional charge(s) for ''Delivery Within Consignee's Premises'' will be shown as separate entries on the order.

Items (NSN's or special item numbers or descriptive name of articles)	Additional charge (per shipping container) for ''delivery within consignee's premises''

(End of clause)

552.238–110 Shipping Points.

As prescribed in 538.273(d)(25), insert the following clause:

Shipping Points (Date)

The Contractor awarded f.o.b. origin (or f.o.b. shipping point) prices shall indicate, in the spaces provided below, on in a separate attachment, the complete address (street, city, and state) from which the items will be shipped, and the name of the carrier serving point (if any). If more than one shipping point is designated for an item, ordering activities will have the option of specifying the shipping point unless otherwise noted by the Contractor.

Item Nos.	Name of facility	Address	Carrier

(End of clause)

552.238–111 Contact for Contract Administration.

As prescribed in 538.273(d)(26), insert the following clause:

Contact for Contract Administration (Date)

(a) Offerors shall complete paragraphs (c) and (d) of this clause if providing both domestic and overseas delivery. Complete paragraph (c) of this clause if providing domestic delivery only. Complete paragraph (d) of this clause if providing overseas delivery only.

(b) The Contractor shall designate a person to serve as the contract administrator for the contract both domestically and overseas. The contract administrator is responsible for overall compliance with contract terms and conditions. The contract administrator is also the responsible official for issues concerning 552.238–74, Industrial Funding Fee and Sales Reporting, including reviews of Contractor records. The Contractor's designated representative to handle certain functions under this contract does not relieve the contract administrator of responsibility for contract compliance. Any changes to the designated individual must be provided to the Contracting Officer in writing, with the proposed effective date of the change.

(c) *Domestic:*

NAME _____
TITLE _____
ADDRESS _____
ZIP CODE _____
TELEPHONE NO. _____
FAX NO. _____
E-MAIL ADDRESS _____

(d) *Overseas:* Overseas contact points are mandatory for local assistance with the resolution of any delivery, performance, or quality complaints from customer agencies. The designated representative shall be available during the local business hours in the country of delivery, even though the designated representative does not have to be located in the country of delivery. (Also, see the requirement in 552.238–113, Parts and Service.) A designated representative must be furnished for each area in which deliveries are contemplated, *e.g.,* Europe, South America, Far East, etc.

LOCATION(S) COVERED _____
NAME _____
TITLE _____
ADDRESS _____
ZIP CODE _____
TELEPHONE NO. _____
FAX NO. _____
E-MAIL ADDRESS _____

(End of clause)

552.238–112 Clauses for Overseas Coverage.

As prescribed in 538.273(d)(27), insert the following clause:

Clauses for Overseas Coverage (Date)

The following clauses apply to overseas coverage:

(a) 52.214–34; Submission of Offers in the English Language;

(b) 52.214–35; Submission of Offers in U.S. Currency;

(c) 52.247–34; FOB Destination;

(d) 52.247–38; FOB Inland Carrier, Country of Exportation;

(e) 52.247–39; FOB Inland Point, Country of Importation;

(f) 552.238–100; Characteristics of Electric Current;

(g) 552.238–101; Marking and Documentation Requirements Per Shipment;

(h) 552.238–113; Parts and Service;

(i) 552.238–114; Delivery Prices Overseas;

(j) 552.238–115; Transshipments; and

(k) 552.238–116; Foreign Taxes and Duties.

(End of clause)

552.238–113 Parts and Service.

As prescribed in 538.273(d)(27)(viii), insert the following clause:

Parts and Service (Date)

(a) For equipment under items listed in the schedule of items or services on which offers are submitted, the Contractor represents by submission of this offer that parts and services (including the performing of warranty or guarantee service) are now available from dealers or distributors serving the areas of ultimate overseas destination or that such facilities will be established and will be maintained throughout the contract period. If a new servicing facility is to be established, the facility shall be established no later than the beginning of the contract period.

(b) Each Contractor shall be fully responsible for the services to be performed by the named servicing facilities, or by such facilities to be established, and fully guarantees performance of such services if the original service proves unsatisfactory.

(c) Contractors are requested to include in the price list, the names and addresses of all supply and service points maintained in the geographic area in which the Contractor will perform. Please indicate opposite each point whether or not a complete stock of repair parts for items offered is carried at that point, and whether or not mechanical service is available.

(End of clause)

552.238–114 Delivery Prices Overseas.

As prescribed in 538.273(d)(27)(ix), insert the following clause:

Delivery Prices Overseas (Date)

(a) Prices offered must cover delivery to destinations as provided below:

(1) Direct delivery to consignee. F.O.B. Inland Point, Country of Importation (FAR 52.247–39). (Offeror shall indicate countries where direct delivery will be provided.)

(2) Delivery to overseas assembly point for transshipment when specified by the ordering activity, if delivery is not covered under paragraph (a), of this section.

(3) Delivery to the overseas port of entry when delivery is not covered under paragraphs (a) or (b), of this section.

(b) Geographic area(s)/countries/zones which are intended to be covered must be identified in the offer.

(End of clause)

552.238–115 Transshipments.

As prescribed in 538.273(d)(27)(x), insert the following clause:

Transshipments (Date)

The Contractor shall complete two DD Forms 1387, Military Shipment Labels and, if applicable, four copies of DD Form 1387–2, Special Handling/Data Certification—used when shipping chemicals, dangerous cargo, etc. Two copies of the DD Form 1387 will be attached to EACH shipping container delivered to the port Transportation Officer for subsequent transshipment by the Government as otherwise provided for under the terms of this contract. These forms will be attached to one end and one side (NOT on the top or bottom) of the container. The Contractor will complete the bottom line of these forms, which pertains to the number of pieces, weight and cube of each piece, using U.S. weight and cubic measures. Weights will be rounded off to the nearest pound. (One kg = 2.2 U.S. pounds; one cubic meter = 35.3156 cubic feet.) In addition, if the cargo consists of chemicals, or is dangerous, one copy of the DD Form 1387 2 will be attached to the container, and three copies will be furnished to the Transportation Officer with the Bill of Lading. DANGEROUS CARGO WILL NOT BE INTERMINGLED WITH NONDANGEROUS CARGO IN THE SAME CONTAINER. Copies of the above forms and preparation instructions will be obtained from the ordering activity issuing the Delivery Order. Reproduced copies of the forms are acceptable. FAILURE TO INCLUDE DD FORMS 1387 (AND DD FORM 1387–2, IF APPLICABLE) ON EACH SHIPPING CONTAINER WILL RESULT IN REJECTION OF SHIPMENT BY THE PORT TRANSPORTATION OFFICER.

(End of clause)

552.238–116 Foreign Taxes and Duties.

As prescribed in 538.273(d)(27)(xi), insert the following clause:

Foreign Taxes and Duties (Date)

Prices offered must be net, delivered, f.o.b. to the destinations accepted by the Government.

(a) The Contractor warrants that such prices do not include any tax, duty, customs fees, or other foreign Governmental costs, assessments, or similar charges from which the U.S. Government is exempt.

(b) Standard commercial export packaging, including containerization, if necessary, packaging, preservation, and/or marking are included in the pricing offered and accepted by the Government.

(End of clause)

552.238–117 English Language and U.S. Dollar Requirements.

As prescribed in 538.273(d)(28), insert the following clause:

English Language and U.S. Dollar Requirements (Date)

(a) All documents produced by the Contractor to fulfill requirements of this contract including, but not limited to,

Federal Supply Schedule catalogs and price lists, must reflect all terms and conditions in the English language.

(b) U.S. dollar equivalency, if applicable, will be based on the rates published in the ''Treasury Reporting Rates of Exchange'' in effect as of the date of the agency's purchase order or in effect during the time period specified elsewhere in this contract.

(End of clause)

552.238–118 Delivery Prices.

As prescribed in 538.273(d)(29), insert the following clause:

Delivery Prices (Date)

(a) Prices offered must cover delivery as provided below to destinations located within the 48 contiguous States and the District of Columbia.

(1) Delivery to the door of the specified Government activity by freight or express common carriers on articles for which store-door delivery is provided, free or subject to a charge, pursuant to regularly published tariffs duly filed with the Federal and/or State regulatory bodies governing such carrier; or, at the option of the Contractor, by parcel post on mailable articles, or by the Contractor's vehicle. Where store-door delivery is subject to a charge, the Contractor shall—

(i) Place the notation ''Delivery Service Requested'' on bills of lading covering such shipments; and

(ii) Pay such charge and add the actual cost thereof as a separate item to his invoice.

(2) Delivery to siding at destinations when specified by the ordering office, if delivery is not covered under paragraph (a)(1), of this section.

(3) Delivery to the freight station nearest destination when delivery is not covered under paragraph (a)(1) or (a)(2) of this section.

(b) The Offeror shall indicate in the offer whether or not prices submitted cover delivery f.o.b. destination in Alaska, Hawaii, and the Commonwealth of Puerto Rico.

(c) When deliveries are made to destinations outside the contiguous 48 States; *i.e.,* Alaska, Hawaii, and the Commonwealth of Puerto Rico, and are not covered by paragraph (b), above, the following conditions will apply:

(1) Delivery will be f.o.b. inland carrier, point of exportation (FAR 52.247–38), with the transportation charges to be paid by the Government from point of exportation to destination in Alaska, Hawaii, or the Commonwealth of Puerto Rico, as designated by the ordering office. The Contractor shall add the actual cost of transportation to destination from the point of exportation in the 48 contiguous States nearest to the designated destination. Such costs will, in all cases, be based upon the lowest regularly established rates on file with the Interstate Commerce Commission, the U.S. Maritime Commission (if shipped by water), or any State regulatory body, or those published by the U.S. Postal Service; and must be supported by paid freight or express receipt or by a statement of parcel post charges including weight of shipment.

(2) The right is reserved to ordering agencies to furnish Government bills of lading.

(End of clause)

552.238–119 Federal Excise Tax.

As prescribed in 538.1203(d)(30), insert the following clause:

Federal Excise Tax (Date)

Prices offered shall exclude Federal Excise Tax. Ordering agencies will be notified that the Federal Excise Tax will be invoiced and paid for by them as a separate item based upon published Rubber Manufacturer's Association average weights effective at time of delivery, unless the ordering activity is exempt from such tax.

(End of clause)

552.238–120 Guarantee.

As prescribed in 538.273(d)(31), insert the following clause:

Guarantee (Date)

The Contractor guarantees the equipment furnished will be free from defects in material and workmanship for a period of not less than 1 year from date of delivery. All parts found defective within that period shall be replaced, with the cost of replacement, including shipping charges, to be borne by the Contractor. Under no circumstances will any equipment covered by this guarantee be returned without:

(a) Advance written notice to the Contractor; or

(b) Obtaining shipping instructions from the Contractor.

(End of clause)

552.238–121 Electronic Commerce.

As prescribed in 538.273(d)(32), insert the following clause:

Electronic Commerce (Date)

(a) *General Background.* The Federal Acquisition Streamlining Act (FASA) of 1994 requires the Government to evolve its acquisition process from one driven by paper to an expedited process based on electronic commerce/electronic data interchange (EC/EDI). EC/EDI encompasses more than merely automating manual processes and eliminating paper transactions. EC/EDI improves business processes (*e.g.* procurement, finance, logistics) into a fully electronic environment and fundamentally changes the way organizations operate.

(b) *Trading Partners and Value-Added Networks/Services (VANs/VASs).*

(1) Within the electronic commerce architecture, electronic documents (*e.g.,* orders, invoices, etc.) are carried between the Federal Government's procuring office and Contractors (now known as ''trading partners''). These transactions are carried by 3rd party commercial telecommunications companies called Value-Added Networks/Services (VANs/VASs).

(2) EC/EDI can be performed using commercially available hardware, software, and telecommunications. The selection of a VAN/VAS is a business decision Contractors must make. There are many different providers which provide a variety of electronic services and different pricing strategies. If the provider only provides communications services, you may also need a software translation package.

(c) *Registration Instructions.* To perform EC/EDI with the Government, Contractors shall register as a trading partner. Contractors will provide regular business information, banking information, and EC/EDI capabilities to all agencies in this single registration. A central repository of all trading partners is the Systems for Award Management (SAM) *http://www.sam.gov.* Contractors shall follow the instructions on the SAM Web site regarding how to register for EC/EDI.

(d) *Implementation Conventions.* All EDI transactions must comply with the Federal Implementation Conventions (ICs). The ICs are available on a registry maintained by the National Institute of Standards and Technology (NIST). It is accessible via the Internet at *http://www.nist.gov/itl.* ICs are available for common business documents such as Purchase Order, Price Sales Catalog, Invoice, Request for Quotes, etc.

(e) *Additional Information.* GSA has additional information available for Contractors who are interested in using EC/EDI on its Web site, *www.gsa.gov.*

(f) *GSA Advantage!®.* (1) GSA Advantage!® uses electronic commerce to receive catalogs and text messages; and to send purchase orders, application advice, and functional acknowledgments. GSA Advantage!® enables customers to:

(i) Perform database searches across all contracts by manufacturer; manufacturer's model/part number; Contractor; and generic supply categories;

(ii) Generate EDI/XML delivery orders to Contractors, generate EDI/XML delivery orders from the Federal Acquisition Service to Contractors, or download files to receive delivery orders; and

(iii) Use the credit card.

(2) GSA Advantage!® may be accessed via the GSA Home Page. The INTERNET address is: *http://www.gsa.gov.*

(End of clause)

552.238–122 Imprest Funds (Petty Cash).

As prescribed in 538.273(d)(33), insert the following clause:

Imprest Funds (Petty Cash) (Date)

The Contractor agrees to accept cash payment for purchases made under the terms of the contract in conformance with Federal Acquisition Regulation (FAR) 13.305.

(End of clause)

552.238–123 Dissemination of Information by Contractor.

As prescribed in 538.273(d)(34), insert the following clause:

Dissemination of Information by Contractor (Date)

The Government will provide the Contractor with a single copy of the resulting Federal Supply Schedule contract award documents. However, it is the responsibility

of the Contractor to furnish all sales outlets authorized to participate in the performance of the contract with the terms, conditions, pricing schedule, and other appropriate information.

(End of clause)

552.238–124 Deliveries Beyond the Contractual Period—Placing of Orders.

As prescribed in 538.273(d)(35), insert the following clause:

Deliveries Beyond the Contractual Period-Placing of Orders (Date)

In accordance with clause 552.238–78, Scope of Contract (Eligible Ordering Activities), this contract covers all requirements that may be ordered, as distinguished from delivered during the contract term. This is for the purpose of providing continuity of supply or operations by permitting ordering activities to place orders as requirements arise in the normal course of operations. Accordingly, any order mailed (or received, if forwarded by other means than through the mail) to the Contractor on or before the expiration date of the contract, and providing for delivery within the number of days specified in the contract, shall constitute a valid order.

(End of clause)

552.238–125 Interpretation of Contract Requirements.

As prescribed in 538.273(d)(36), insert the following clause:

Interpretation of Contract Requirements (Date)

No interpretation of any provision of this contract, including applicable specifications, shall be binding on the Government unless furnished or agreed to in writing by the Contracting Officer or his designated representative.

(End of clause)

552.238–126 Export Traffic Release (Supplies).

As prescribed in 538.273(d)(37), insert the following clause:

Export Traffic Release (Supplies) (Date)

Supplies ordered by GSA for export will not be shipped by the Contractor until shipping instructions are received from GSA. To obtain shipping instructions, the Contractor shall forward completed copies of GSA Form 1611, Application for Shipping Instructions and Notice of Availability, to the GSA office designated on the purchase order at least 15 days prior to the anticipated shipping date. Copies of GSA Form 1611 will be furnished to the Contractor with the purchase order. Failure to comply with this requirement could result in nonacceptance of the material by authorities at the port of exportation. When supplies for export are ordered by other Government agencies the Contractor shall obtain shipping instructions from the ordering agency.

(End of clause)

552.238–127 Export Traffic Release (Vehicles).

As prescribed in 538.273(d)(38), insert the following clause:

Export Traffic Release (Vehicles) (Date)

Shipment of vehicles for export will not be accepted without a release (clearance). To obtain this clearance, the contractor shall complete GSA Form 1611, ''Application for Shipping Instructions and Notice of Availability,'' which can be obtained at the following Web site: *http://www.gsa.gov/portal/forms/type/GSA.*

Thirty (30) days in advance of the anticipated date of availability for shipment, the Contractor is to submit a completed GSA Form 1611, including vehicle identification (VIN) number(s) for each export destination, to the Transportation Office designated on the delivery order. Shipment is not to be made until instructions are received from the above transportation office. Failure to adhere to this requirement shall result in refusal of shipment until proper release is obtained. Distribution instructions are provided with the form.

(End of clause)

552.238–128 Carload Shipments.

As prescribed in 538.273(d)(39), insert the following clause:

Carload Shipments (Date)

When shipment is to be made by rail, to one destination, of a carload quantity which includes an item or items the overall length of which when packed and/or palletized, is 60 inches or over, the Contractor shall, when ordering cars, specify that, if available, double-door rail cars be furnished. This provision is intended solely to facilitate unloading by forklift truck at destination. Under no circumstances shall scheduled shipment be delayed due to nonavailability of double-door cars.

(End of clause)

552.238–129 Spare Parts Kit.

As prescribed in 538.273(d)(40), insert the following clause:

Spare Parts Kit (Date)

(a) The Contractor will be required to offer a spare parts kit conforming, generally, to the following requirements for each item awarded under this solicitation: [*The contracting officer shall insert the specifications for a spare parts kit specific to the solicited items.*] *_____*

(b) The Contractor shall furnish prices for spare parts kits as follows:

(i) Price of kit unpackaged;

(ii) Price of kit in domestic pack; and

(iii) Price of kit in wooden case, steel-strapped.

(c) The Contractor will be required to furnish a complete description of spare parts kit offered, a list of parts included, and the price of the kit delivered f.o.b. destination to any point within the conterminous United States within 15 days after receipt of a request from the Contracting Officer. If the kit offered is acceptable to the Government, awards covering requirements will be made by supplemental agreement to this contract.

(End of clause)

552.238–130 Authentication Supplies and Services.

As prescribed in 538.273(d)(41), insert the following clause:

Authentication Supplies and Services (Date)

(a) *General Background.* (1) The General Services Administration (GSA) originally established the Access Certificates for Electronic Services (ACES) Program to provide digital certificates and PKI services for enabling e-Government applications that require logical access control, digital signature and/or electronic authentication. This category of supplies and services has been expanded beyond the original scope of ACES and is now described as ''Identity and Access Management'' (IAM) to clearly define the kinds of services that meet the requirements for service providers and supplies that support FISMA-compliant IAM systems deployed by Federal agencies.

(2) Homeland Security Presidential Directive 12 (HSPD–12), ''Policy for a Common Identification Standard for Federal Employees and Contractors'' establishes the requirement for a mandatory Government-wide standard for secure and reliable forms of identification issued by the Federal Government to its employees and Contractor employees assigned to Government contracts in order to enhance security, increase Government efficiency, reduce identity fraud, and protect personal privacy. Further, the Directive requires the Department of Commerce to promulgate a Federal standard for secure and reliable forms of identification within six months of the date of the Directive. As a result, the National Institute of Standards and Technology (NIST) released Federal Information Processing Standard (FIPS) 201: Personal Identity Verification of Federal Employees and Contractors on February 25, 2005. FIPS 201 requires that the digital certificates incorporated into the Personal Identity Verification (PIV) identity credentials comply with the X.509 Certificate Policy for the U.S. Federal PKI Common Policy Framework. In addition, FIPS 201 requires that Federal identity badges referred to as PIV credentials, issued to Federal employees and Contractors comply with the Standard and associated NIST Special Publications 800–73, 800–76, 800–78, and 800–79.

(b) *Special Item Numbers.* GSA has established the e-Authentication Initiative (see URL: *http://www.idmanagement.gov*) to provide common infrastructure for the authentication of the public and internal federal users for logical access to Federal e-Government applications and electronic services. To support the government-wide implementation of HSPD–12 and the Federal e-Authentication Initiative, GSA has established Special Item Numbers (SINs) pertaining to Authentication Products and Services, including Electronic Credentials, Digital Certificates, eAuthentication, Identify and Access Management, PKI Shared Service Providers, and HSPD–12 Product and Service Components.

(c) *Qualification Information.* (1) All Authentication supplies and services must be qualified as being compliant with Government-wide requirements before they will be included on a GSA Information Technology (IT) Schedule contract. The Qualification Requirements and associated evaluation procedures against the Qualification Requirements for each SIN and the specific Qualification Requirements for HSPD–12 implementation components are presented at the following URL: *http://www.idmanagement.gov.*

(2) In addition, the National Institute of Standards and Technology (NIST) has established the NIST Personal Identity Verification Program (NPIVP) to evaluate integrated circuit chip cards and supplies against conformance requirements contained in FIPS 201. GSA has established the FIPS 201 Evaluation Program to evaluate other supplies needed for agency implementation of HSPD–12 requirements where normative requirements are specified in FIPS 201 and to perform card and reader interface testing for interoperability. Products that are approved as FIPS–201 compliant through these evaluation and testing programs may be offered directly through HSPD–12 Supplies and Services Components SIN under the category ''Approved FIPS 201-Compliant Products and services''.

(d) *Qualification Requirements.* Offerors proposing Authentication supplies and services under the established SINs are required to provide the following:

(1) Proposed items must be determined to be compliant with Federal requirements for that SIN. Qualification Requirements and procedures for the evaluation of supplies and services are posted at the URL: *http://www.idmanagement.gov.* GSA will follow these procedures in qualifying offeror's supplies and services against the Qualification Requirements for applicable to SIN. Offerors must submit all documentation certification letter(s) for Authentication Supplies and Services offerings at the same time as submission of proposal. Award will be dependent upon receipt of official documentation from the Acquisition Program Management Office (APMO) listed below verifying satisfactory qualification against the Qualification Requirements of the proposed SIN(s).

(2) After award, Contractor agrees that certified supplies and services will not be offered under any other SIN on any Federal Supply Schedule.

(3)(i) If the Contractor changes the supplies or services previously qualified, GSA may require the Contractor to resubmit the supplies or services for re-qualification.

(ii) If the Federal Government changes the qualification requirements or standards, Contractor must resubmit the supplies and services for re-qualification.

(4) Immediately prior to making an award, Contracting Officers MUST consult the following Web site to ensure that the supplies and/or services recommended for award under any Authentication Supplies and Services SINs are in compliance with the latest APL qualification standards: *www.idmanagement.gov.* A dated copy of the applicable page shall be made and included with the award documents.

(e) *Demonstrating Conformance.* The Federal Government has established Qualification Requirements for demonstrating conformance with the Standards. The following Web sites provide additional information regarding the evaluation and qualification processes:

(1) For Access Certificates for Electronic Services (ACES) and PKI Shared Service Provider (SSP) Qualification Requirements and evaluation procedures: *http://www.idmanagement.gov.*

(2) For HSPD–12 Product and Service Components Qualification Requirements and evaluation procedures: *http://www.idmanagement.gov.*

(3) For FIPS 201 compliant products and services qualification and approval procedures: *http://www.csrc.nist.gov/piv-project* and *http://www.smart.gov.*

(f) *Acquisition Program Management Office (APMO).* GSA has established the APMO to provide centralized technical oversight and management regarding the qualification process to industry partners and Federal agencies. Contact the following APMO for information on the eAuthentication Qualification process. Technical, APMO, FIPS 201, and HSPD–12 Points of Contact can be found below, or in an additional attachment to the solicitation. [*The contracting officer shall insert the points of contact information below, unless otherwise included elsewhere in the solicitation.*] *_____*

(End of clause)

552.238–131 Commercial Satellite Communication (COMSATCOM) Services.

As prescribed in 538.273(d)(42) insert the following clause:

Commercial Satellite Communication (COMSATCOM) Services (Date)

(a) *General Background.* Special Item Numbers (SINs) have been established for Commercial Satellite Communications (COMSATCOM) services, focused on transponded capacity (SIN 132–54) and fixed and mobile subscription services (SIN 132–55), to make available common COMSATCOM services to all Ordering Activities.

(b) *Information Assurance.* (1) The Contractor shall demonstrate, to the maximum extent practicable, the ability to meet:

(i) The Committee on National Security Systems Policy (CNSSP) 12, ''National Information Assurance Policy for Space Systems used to Support National Security Missions''; or

(ii) Department of Defense Directive (DoDD) 8581.1, ''Information Assurance (IA) Policy for Space Systems Used by the Department of Defense.''

(2) The Contractor shall demonstrate the ability to comply with the Federal Information Security Management Act of 2002 as implemented by Federal Information Processing Standards Publication 200 (FIPS 200), ''Minimum Security Requirements for Federal Information and Information Systems.'' In response to ordering activity requirements, at a minimum, all services shall meet the requirements assigned against:

(i) A low-impact information system (per FIPS 200) that is described in the current revision of National Institute of Standards and Technology (NIST) Special Publication (SP) 800–53, ''Recommended Security Controls for Federal Information Systems and Organizations,'' or

(ii) A Mission Assurance Category (MAC) III system that is described in the current revision of DoD Instruction (DoDI) 8500.2, ''Information Assurance Implementation.''

(3) The Contractor's information assurance boundary is where the Contractor's services connect to the user terminals/equipment (*i.e.,* includes satellite command encryption (ground and space); systems used in the Satellite Operations Centers (SOCs), Network Operations Centers (NOCs) and teleport; and terrestrial infrastructure required for service delivery).

(c) *Delivery Schedule.* The Contractor shall deliver COMSATCOM services in accordance with 552.238–78.

(d) *Portability.* The Contractor shall have the capability to redeploy COMSATCOM services, subject to availability. Portability shall be provided within the COMSATCOM Contractor's resources at any time as requested by the ordering activity. When portability is exercised, evidence of equivalent net present value (NPV) shall be provided by the Contractor.

(e) *Flexibility/Optimization.* The Contractor shall have the capability to re-groom resources for spectral, operational, or price efficiencies. Flexibility/optimization shall be provided within the COMSATCOM Contractor's resources at any time as requested by the ordering activity. When flexibility/optimization is exercised, evidence of equivalent net present value (NPV) shall be provided by the Contractor. The Contractor is encouraged to submit re-grooming approaches for ordering activity consideration that may increase efficiencies for existing COMSATCOM services.

(f) *Net Ready (Interoperability).* COMSATCOM services shall be consistent with commercial standards and practices. Services shall have the capability to access and/or interoperate with Government or other Commercial teleports/gateways and provide enterprise service access to or among networks or enclaves. Interfaces may be identified as interoperable on the basis of participation in a sponsored interoperability program.

(g) *Network Monitoring (Net OPS).* The Contractor shall have the capability to electronically collect and deliver near real-time monitoring, fault/incident/outage reporting, and information access to ensure effective and efficient operations, performance, and availability, consistent with commercial practices. Consistent with the Contractor's standard management practices, the Net Ops information will be provided on a frequency (example: every 6 hours, daily) and format (example: SNMP, XML) as defined in a requirement to a location/entity/electronic interface defined by the ordering activity. Specific reporting requirements will be defined by the Ordering Activity.

(h) *EMI/RFI Identification, Characterization, and Geo-location.* The

Contractor shall have the capability to collect and electronically report in near real-time Electro Magnetic Interference (EMI)/Radio Frequency Interference (RFI) identification, characterization, and geo-location, including the ability to identify and characterize sub-carrier EMI/RFI being transmitted underneath an authorized carrier, and the ability to geo-locate the source of any and all EMI/RFI. The Contractor shall establish and use with the ordering activity a mutually agreed upon media and voice communications capability capable of protecting ''Sensitive, but Unclassified'' data.

(i) *Security.* (1) The Contractor may be required to obtain/possess varying levels of personnel and facility security clearances up to U.S. Government TOP SECRET/Sensitive Compartmented Information (TS/SCI) or equivalent clearances assigned by the National Security Authority of a NATO Member State or Major Non-NATO Ally.

(2) For incident resolution involving classified matters, the Contractor shall provide appropriately cleared staff who can affect COMSATCOM services operations (example: satellite payload operations, network operations). The Contractor shall provide a minimum of one operations staff member AND a minimum of one person with the authority to commit the company if resolution requires business impacting decisions (example: Chief Executive Officer, Chief Operations Officer, etc.).

(3) When Communications Security or Transmission Security equipment or keying material is placed in the equipment/terminal shelter, the Contractor shall ensure compliance with applicable physical security directives/guidelines and that all deployed equipment/terminal operations and maintenance personnel shall possess the appropriate clearances, equal to or higher than the classification level of the data being transmitted. Where local regulations require use of foreign personnel for terminal operations and maintenance, then the Contractor shall ensure compliance with applicable security directives/guidelines and document to the U.S. Government's satisfaction that protective measures are in place and such individuals have equivalent clearances granted by the local host nation.

(4) For classified operations security (OPSEC), the Contractor shall ensure that all personnel in direct contact with classified OPSEC indicators (example: the unit, location, and time of operations) have U.S. SECRET or higher personnel security clearances, or, as appropriate, equivalent clearances assigned by the National Security Authority of a NATO Member State or Major Non-NATO Ally, in accordance with applicable security directives and guidelines.

(5) For classified requirements, cleared satellite operator staff must have access to secure voice communications for emergency purposes. Communications security equipment certified by the National Security Agency (NSA) to secure unclassified and up to and including SECRET communication transmissions at all operations centers is preferred. If a Contractor is unable to have access to NSA-approved communications security equipment at its operations centers, then a combination of a ''Sensitive but Unclassified'' (SBU) cryptographic module approved by the U.S. National Institute for Standards and Technology and pre-arranged access to National Security Agency-approved communications security equipment at an agreed alternate facility is acceptable.

(6) The Contractor shall have the capability to ''mask'' or ''protect'' users against unauthorized release of identifying information to any entity that could compromise operations security. Identifying information includes but is not limited to personal user and/or unit information including tail numbers, unit names, unit numbers, individual names, individual contact numbers, street addresses, etc.

(j) Third party billing for COMSATCOM subscription services. The Contractor shall identify authorized network infrastructure for the ordering activity. In some cases, the user of the terminal may access network infrastructure owned or operated by a third party. In the event a terminal is used on a third party's network infrastructure, the Contractor shall provide to the ordering activity, invoices and documentation reflecting actual usage amount and third party charges incurred. The ordering activity shall be billed the actual third party charges incurred, or the contract third party billing price, whichever is less.

(End of clause)

552.238–132 Environmental Protection Agency Registration Requirement.

As prescribed in 538.273(d)(43), insert the following clause:

Environmental Protection Agency Registration Requirement (Date)

(a) With respect to the products described in this solicitation which require registration with the Environmental Protection Agency (EPA), as required by the Federal Insecticide, Fungicide, and Rodenticide Act, Section 3, Registration of Pesticides, awards will be made only for such products that have been assigned an EPA registration number, prior to the time of bid opening.

(b) The offeror shall insert in the spaces provided below, the manufacturer's and/or distributor's name and the ''EPA Registration Number'' for each item offered. Any offer which does not specify a current ''EPA Registration Number'' in effect for the duration of the contract period, and including the manufacturer's and/or distributor's name will be rejected.

Item Nos.	Name of manufacturer/ Distributor No.	EPA Registration	Date of expiration

(c) If, during the performance of a contract awarded as a result of this solicitation, the EPA Registration Number for products being furnished is terminated, withdrawn, canceled, or suspended, and such action does not arise out of causes beyond the control, and with the fault or negligence of the Contractor or subcontractor, the Government may terminate the contract pursuant to either the Default Clause or Termination for Cause Paragraph (contained in the clause 52.212–4, Contract Terms and Conditions—Commercial Items), whichever is applicable to the resultant contract.

(End of clause)

[FR Doc. 2014–21326 Filed 9–9–14; 8:45 am]

BILLING CODE 6820–61–P

FEDERAL REGISTER

Vol. 79 Wednesday,

No. 175 September 10, 2014

Part IV

Small Business Administration

13 CFR Part 121

Small Business Size Standards for Manufacturing; Proposed Rule

SMALL BUSINESS ADMINISTRATION

13 CFR Part 121

RIN 3245–AG50

Small Business Size Standards for Manufacturing

AGENCY: U.S. Small Business Administration.

ACTION: Proposed rule.

SUMMARY: The U.S. Small Business Administration (SBA) proposes to increase small business size standards for 209 industries in North American Industry Classification System (NAICS) Sector 31–33, Manufacturing. SBA also proposes to increase the refining capacity component of the Petroleum Refiners (NAICS 324110) size standard to 200,000 barrels per calendar day total capacity for businesses that are primarily engaged in petroleum refining. In addition, SBA proposes to eliminate the requirement that 90 percent of output being delivered is refined by the bidder. As part of its ongoing comprehensive size standards review, SBA evaluated employee based size standards for all 364 industries in NAICS Sector 31–33 to determine whether they should be retained or revised. This proposed rule is one of a series of proposed rules that will review size standards of industries grouped by NAICS Sector.

DATES: SBA must receive comments to this proposed rule on or before November 10, 2014.

ADDRESSES: Identify your comments by RIN 3245–AG50 and submit them by one of the following methods:

(1) *Federal eRulemaking Portal: www.regulations.gov,* following the instructions for submitting comments; or

(2) *Mail/Hand Delivery/Courier:* Khem R. Sharma, Ph.D., Chief, Size Standards Division, 409 Third Street SW., Mail Code 6530, Washington, DC 20416. SBA will not accept comments to this proposed rule submitted by email.

SBA will post all comments to this proposed rule on *www.regulations.gov.* If you wish to submit confidential business information (CBI) as defined in the User Notice at *www.regulations.gov,* you must submit such information to U.S. Small Business Administration, Khem R. Sharma, Ph.D., Chief, Size Standards Division, 409 Third Street SW., Mail Code 6530, Washington, DC 20416, or send an email to *sizestandards@sba.gov.* Highlight the information that you consider to be CBI and explain why you believe SBA should hold this information as confidential. SBA will review your information and determine whether it will make the information public.

FOR FURTHER INFORMATION CONTACT: Jorge Laboy-Bruno, Ph.D., Economist, Size Standards Division, (202) 205–6618 or *sizestandards@sba.gov.*

SUPPLEMENTARY INFORMATION: To determine eligibility for Federal small business assistance, SBA establishes small business size definitions (referred to as size standards) for private sector industries in the United States. SBA uses two primary measures of business size—average annual receipts and average number of employees. SBA uses financial assets, electric output, and refining capacity to measure the size of a few specialized industries. In addition, SBA's Small Business Investment Company (SBIC), Certified Development Company (504), and 7(a) Loan Programs use either the industry based size standards, or net worth and net income based alternative size standards to determine eligibility for those programs. At the start of the SBA's current comprehensive size standards review when the size standards were based on NAICS 2007, there were 41 different size standards covering 1,141 NAICS industries and 18 sub-industry activities (''exceptions'' in SBA's table of size standards). Thirty-one of these size levels were based on average annual receipts, seven were based on average number of employees, and three were based on other measures. Presently, under NAICS 2012, there are 28 different size standards covering 1,031 industries and 16 ''exceptions''. Of these, 533 are based on average annual receipts, 509 on number of employees (one of which also contains barrels per day total capacity), and five on average assets.

Over the years, SBA has received comments that its size standards have not kept up with changes in the economy, in particular the changes in the Federal contracting marketplace and industry structure. The last time SBA conducted a comprehensive size standards review was during the late 1970s and early 1980s. Since then, most reviews of size standards were limited to a few specific industries, mostly with receipts based size standards, in response to requests from the public and Federal agencies. SBA reviews all monetary based size standards (except for statutorily set size standards in NAICS Sector 11) for inflation at least once every five years. SBA's latest inflation adjustment to size standards was published in the **Federal Register** on June 12, 2014 (79 FR 33647). However, the vast majority of manufacturing size standards have not been reviewed since they were first established.

Because of changes in the Federal marketplace and industry structure since the last comprehensive size standards review, SBA recognizes that current data may no longer support some of its existing size standards. Accordingly, in 2007, SBA began a comprehensive size standards review to determine if they are consistent with current data, and to adjust them when necessary. In addition, on September 27, 2010, the President of the United States signed the Small Business Jobs Act of 2010 (Jobs Act). The Jobs Act directs SBA to conduct a detailed review of all size standards and to make appropriate adjustments to reflect market conditions. Specifically, the Jobs Act requires SBA to conduct a detailed review of at least one-third of all size standards during every 18-month period from the date of its enactment. In addition, the Jobs Act requires that SBA review all size standards not less frequently than once every five years thereafter. Reviewing existing small business size standards and making appropriate adjustments based on the latest available data are also consistent with Executive Order 13563 on improving regulation and regulatory review.

Rather than review all size standards at one time, SBA is reviewing size standards on a Sector by Sector basis. A NAICS Sector generally includes 25 to 75 industries, except for NAICS Sector 31–33, Manufacturing, which has more than 350 industries. As stated above, this proposed rule covers all industries in NAICS Sector 31–33. Once SBA completes its review of size standards for industries in a NAICS Sector, it issues a proposed rule to revise size standards for those industries based on latest industry and program data available and other relevant factors, such as current economic climate and SBA's and other government's programs and policies to help small businesses.

Below is a discussion of SBA's size standards methodology for establishing employee based size standards that the Agency applied to this proposed rule, including analyses of industry structure, Federal contracting factor, the impact of the proposed revisions to size standards on SBA's financial assistance to small businesses, and the evaluation of whether a revised size standard would exclude dominant firms from being considered small.

Size Standards Methodology

In conjunction with the current comprehensive size standards review,

SBA developed a ''Size Standards Methodology'' for developing, reviewing, and modifying size standards when necessary. SBA published the document on its Web site at *www.sba.gov/size* for public review and comments, and has included it as a supporting document in the electronic docket of this proposed rule at *www.regulations.gov.* It should be noted that SBA does not apply all features of its ''Size Standards Methodology'' to all industries because not all features are appropriate for every industry. For example, since all industries in Sector 31–33 have employee based size standards, the methodology described in this proposed rule relates only to establishing employee based size standards. However, the methodology is available in its entirety for parties who have an interest in SBA's overall approach to establishing, evaluating, and modifying small business size standards. SBA always explains its methodology and analysis in individual proposed and final rules relating to size standards for specific industries.

SBA welcomes comments from the public on a number of issues concerning its ''Size Standards Methodology,'' that the Agency has applied in this proposed rule, such as whether there are other approaches to establishing and modifying size standards; whether there are alternative or additional factors that SBA should consider; whether SBA's approach to small business size standards makes sense in the current economic environment; whether SBA's use of anchor size standards is appropriate; whether there are gaps in SBA's methodology because the data it uses are not current or sufficiently comprehensive; and whether there are other data, facts, and/or issues that SBA should consider. Comments on SBA's size standards methodology should be submitted via: (1) The Federal eRulemaking Portal: *www.regulations.gov,* following the instructions for submitting comments; the docket number is SBA–2009–0008, or (2) Mail/Hand Delivery/Courier: Khem R. Sharma, Ph.D., Chief, Size Standards Division, 409 Third Street SW., Mail Code 6530, Washington, DC 20416. As it will do with comments to this and other proposed rules, SBA will post all comments on its methodology on *www.regulations.gov.* As of June 12, 2014, SBA has received 18 comments to its ''Size Standards Methodology.'' The comments are available to the public at *www.regulations.gov.* SBA continues to welcome comments on its methodology from interested parties. SBA will not accept comments to its ''Size Standards Methodology'' submitted by email.

Congress granted the SBA's Administrator discretion to establish detailed small business size standards. 15 U.S.C. 632(a)(2). Specifically, Section 3(a)(3) of the Small Business Act (15 U.S.C. 632(a)(3)) requires that ''. . . the [SBA] Administrator shall ensure that the size standard varies from industry to industry to the extent necessary to reflect the differing characteristics of the various industries and consider other factors deemed to be relevant by the Administrator.'' Accordingly, the economic structure of an industry is the basis for developing and modifying small business size standards. SBA identifies the small business segment of an industry by examining data on the economic characteristics defining the industry structure (as described below). In addition, SBA considers current economic conditions, its mission and program objectives, the Administration's current policies, suggestions from industry groups and Federal agencies, and public comments on the proposed rule. SBA also examines whether a size standard based on industry and other relevant data successfully excludes businesses that are dominant in the industry.

This proposed rule includes information regarding the factors SBA evaluated and the criteria it used to propose adjustments, where necessary, to size standards for industries covered by this rule. This proposed rule affords the public an opportunity to review and to comment on SBA's proposal to revise size standards for certain industries, as well as on the data and methodology it used to evaluate and revise the size standards.

Industry Analysis

For the current comprehensive size standards review, SBA has established three ''base'' or ''anchor'' size standards—$7.0 million in average annual receipts for industries that have receipts based size standards, 500 employees for Manufacturing and industries that have employee based size standards in non-manufacturing Sectors (except for Wholesale Trade and Retail Trade), and 100 employees for industries in the Wholesale and Retail Trade Sectors that have employee based size standards. SBA established 500 employees as the anchor size standard for manufacturing industries at its inception in 1953. Shortly thereafter, SBA established $1 million in average annual receipts as the anchor size standard for nonmanufacturing industries. SBA has periodically increased the receipts based anchor size standard for inflation, and today it is $7 million. Since 1986, the size standard for all industries in the Wholesale Trade Sector for SBA's financial assistance and for most Federal programs has been 100 employees. Presently, SBA also has employee based size standards for two industries in Retail Trade, namely NAICS 441110, New Car Dealers (200 employees) and NAICS 454310, Fuel Dealers (50 employees). However, NAICS codes for the Wholesale and Retail Trade Sectors and their size standards do not apply to Federal procurement programs. Rather, for Federal procurement the size standard for all industries in Wholesale Trade (NAICS Sector 42) and for all industries in Retail Trade (NAICS Sector 44–45) is 500 employees under the SBA's nonmanufacturer rule (13 CFR 121.406(b)).

These long-standing anchor size standards have stood the test of time and gained legitimacy through practice and general public acceptance. An anchor is neither a minimum nor a maximum size standard. It is a common size standard for a large number of industries that have similar economic characteristics and serves as a reference point in evaluating size standards for individual industries. SBA uses the anchor in lieu of trying to establish precise small business size standards for each industry. Otherwise, theoretically, the number of size standards might be as high as the number of industries for which SBA establishes size standards (i.e., more than 1,000). Furthermore, the data SBA analyzes are static, while the U.S. economy is not. Hence, absolute precision is impossible. Similarly, because of the disclosure problem in getting the distribution of firms by more granular size classes, the 2007 Economic Census tabulation (the latest available when this proposed rule was prepared) that SBA received from the U.S. Census Bureau for current size standards review would not allow an accurate regulatory impact analysis of size standards changes if precise, separate size standards were established for each industry. SBA presumes an anchor size standard is appropriate for a particular industry unless that industry displays economic characteristics that are considerably different from other industries with the same anchor size standard.

When evaluating a size standard, SBA compares the economic characteristics of the industry under review to the average characteristics of industries with one of the three anchor size standards (referred to as the ''anchor comparison group''). This allows SBA to assess the industry structure and to

determine whether the industry is appreciably different from the other industries in the anchor comparison group. If the characteristics of a specific industry under review are similar to the average characteristics of the anchor comparison group, the anchor size standard is generally appropriate for that industry. SBA may consider adopting a size standard below the anchor when: (1) All or most of the industry characteristics are significantly smaller than the average characteristics of the anchor comparison group; or (2) other industry considerations strongly suggest that the anchor size standard would be an unreasonably high size standard for the industry.

If the specific industry's characteristics are significantly higher than those of the anchor comparison group, then a size standard higher than the anchor size standard may be appropriate. The larger the differences are between the characteristics of the industry under review and those in the anchor comparison group, the larger will be the difference between the appropriate industry size standard and the anchor size standard. To determine a size standard above the anchor size standard, SBA analyzes the characteristics of a second comparison group.

For industries with employee based size standards in manufacturing and industries not in Sector 42 (Wholesale Trade) or Sector 44–45 (Retail Trade), SBA has developed a second comparison group consisting of industries that have the highest of employee based size standards. To determine a size standard above the 500-employee anchor size standard, SBA analyzes the characteristics of this second comparison group. The industries in this group have size standards of either 1,000 employees or 1,500 employees; the weighted average size standard for the group is 1,323 employees. SBA refers to this comparison group as the ''higher level employee based size standard group.''

To examine industry structure, SBA evaluates average firm size, startup costs and entry barriers, industry competition, and distribution of firms by size. SBA also evaluates the level and small business share of total Federal contracting dollars. These are, generally, the five primary factors SBA examines when establishing or revising a size standard for an industry. However, SBA will also consider and evaluate other information that it believes is relevant to a particular industry (such as technological changes, growth trends, SBA financial assistance, other program factors, etc.). SBA also considers possible impacts of size standard revisions on eligibility for Federal small business assistance, current economic conditions, the Administration's policies, and suggestions from industry groups and Federal agencies. Public comments on a proposed rule also provide important additional information. SBA thoroughly reviews all public comments before making a final decision on its proposed size standards. Below are brief descriptions of each of the five primary factors that SBA has evaluated for each industry and sub-industry covered by this proposed rule. A more detailed description of these factors is provided in SBA's ''Size Standards Methodology,'' available at *http://www.sba.gov/size.*

1. *Average firm size.* SBA computes two measures of average firm size: Simple average and weighted average. For industries with employee based size standards, the simple average firm size is the total number of employees in an industry divided by the total number of firms in that industry. The weighted average firm size is the sum of weighted simple average firm sizes in different employee size classes, where weights are the shares of total industry employees for respective employee size classes. The simple average firm size weighs all firms within an industry equally regardless of their size. The weighted average firm size overcomes that limitation by giving more weight to larger firms.

If the average firm size of an industry is significantly higher than the average firm size of industries in the anchor comparison industry group, this will generally support a size standard higher than the anchor size standard. Conversely, if the industry's average firm size is similar to or significantly lower than that of the anchor comparison industry group, it will be a basis to adopt the anchor size standard, or, in rare cases, a standard lower than the anchor.

2. *Startup costs and entry barriers.* Startup costs reflect a firm's initial size in an industry. New entrants to an industry must have sufficient capital and other assets to start and maintain a viable business. If new firms entering a particular industry have greater capital requirements than firms in industries in the anchor comparison group, this can be a basis for establishing a size standard higher than the anchor size standard. In lieu of actual startup cost data, SBA uses average assets as a proxy to measure the capital requirements for new entrants to an industry.

To calculate average assets, SBA begins with the sales to total assets ratio for an industry from the Risk Management Association's Annual eStatement Studies. SBA then applies these ratios to the average receipts of firms in that industry. An industry with average assets that are significantly higher than those of the anchor comparison group is likely to have higher startup costs; this in turn will support a size standard higher than the anchor. Conversely, an industry with average assets that are similar to or lower than those of the anchor comparison group is likely to have lower startup costs; this will support the anchor standard or one lower than the anchor.

3. *Industry competition.* Industry competition is generally measured by the share of total industry receipts generated by the largest firms in an industry. SBA generally evaluates the share of industry receipts generated by the four largest firms in each industry. This is referred to as the ''four-firm concentration ratio,'' a commonly used economic measure of market competition. If a significant share of economic activity within the industry is concentrated among a few relatively large companies, all else being equal, SBA will establish a size standard higher than the anchor size standard. SBA does not consider the four-firm concentration ratio as an important factor in assessing a size standard if its share of economic activity of the largest four firms within the industry is less than 40 percent. For an industry with a four-firm concentration ratio of 40 percent or more, SBA compares the average employee size of the four largest firms in the industry with the average employee size of the four largest firms in the anchor and higher level size comparison groups to determine an employee size standard for that industry.

4. *Distribution of firms by size.* For employee based size standards, SBA examines the shares of industry total receipts accounted for by firms of various employment size classes in an industry. This is an additional factor SBA examines in assessing industry competition. If most of an industry's economic activity is attributable to smaller firms, this generally indicates that small businesses are competitive in that industry. This can, generally, support adopting the anchor size standard. If most of an industry's economic activity is attributable to larger firms, this indicates that small businesses are not competitive in that industry. This can support adopting a size standard above the anchor.

Concentration is a measure of inequality of distribution. To determine the degree of inequality of distribution

in an industry, SBA computes the Gini coefficient by constructing the Lorenz curve. The Lorenz curve presents the cumulative percentages of units (firms) in various employee size classes along the horizontal axis and the cumulative percentages of receipts (or other measures of size) in the same employee size classes along the vertical axis. (For further detail, please refer to SBA's ''Size Standards Methodology'' on its Web site at *www.sba.gov/size.*) Gini coefficient values vary from zero to one. If receipts are distributed equally among all the firms in an industry, the value of the Gini coefficient will equal zero. If an industry's total receipts are attributed to a single firm, the Gini coefficient will equal one.

SBA compares the Gini coefficient value for an industry with that for industries in the anchor comparison group. If the Gini coefficient value for an industry is higher than it is for industries in the anchor comparison industry group this may, all else being equal, warrant a size standard higher than the anchor. Conversely, if an industry's Gini coefficient is similar to or lower than that for the anchor group, the anchor standard, or in some cases a standard lower than the anchor, may be adopted.

5. *Impact on Federal contracting and SBA loan programs.* SBA examines the possible impact a size standard change may have on Federal small business assistance. This most often focuses on the level and small business share of total Federal contracting dollars in the industry in question. In general, if the small business share of total Federal contracting dollars in an industry with significant Federal contracting is appreciably less than the small business share of the industry's total receipts, this could justify considering a size standard higher than the existing size standard. If the small business share of an industry's total Federal contracting dollars is similar to or higher than the small business share of its total receipts, this would support the existing size standard for that industry. By comparing the small business share in the Federal market with the small business share in the industry-wide market, SBA accounts for conditions in the Federal market in its size standards analysis. The disparity between the small business Federal market share and small business industry-wide share may be due to various factors, such as extensive administrative and compliance requirements associated with Federal contracts, the different skill set required for Federal contracts as compared to typical commercial contracting work, and the size of Federal contracts. Data permitting, SBA will also examine these, as well as other factors that are likely to influence the type of firms within an industry that compete for Federal contracts.

SBA considers the Federal contracting factor in an industry's size standards analysis only if the industry's total Federal contracting dollars average $100 million or more annually during the latest three fiscal years. SBA believes that this threshold reflects a significant level of contracting where a revision to a size standard may have an impact on contracting opportunities to small businesses. For industries where total contracting dollars average $100 million or more annually, SBA establishes a size standard higher than the existing size standard if the small business share of total industry receipts is 10 percent or higher than the small business share of total industry receipts. If this difference is less than 10 percent, this would support the existing size standard.

Besides the impact on small business Federal contracting, SBA also evaluates the impact of a proposed size standard revision on SBA's loan programs. For this, SBA examines the data on volume and number of its guaranteed loans within an industry and the size of firms obtaining those loans. This allows SBA to assess whether the existing, proposed, or revised size standard for a particular industry may restrict the level of financial assistance to small firms. If existing size standards are found to have impeded financial assistance to small businesses, higher size standards may be justified. However, if small businesses under existing size standards have been receiving significant amounts of financial assistance through SBA's loan programs, or if the financial assistance has been provided mainly to businesses that are much smaller than the existing size standards, SBA does not consider this factor when determining the size standard.

Sources of Industry and Program Data

SBA's primary source of industry data used in this proposed rule is a special tabulation of the 2007 Economic Census (see *www.census.gov/econ/census07/*) prepared by the U.S. Bureau of the Census (Census Bureau) for SBA. The 2007 Economic Census data are the latest Economic Census data available at the time of drafting this proposed rule. SBA expects to receive the special tabulation from the 2012 Economic Census in 2016 for the next round of comprehensive size standards review. The special tabulation provides SBA with data on the number of firms, number of establishments, number of employees, annual payroll, and annual receipts of companies by Industry (6-digit level), Industry Group (4-digit level), Subsector (3-digit level), and Sector (2-digit level). These data are arrayed by various classes of firms' size based on the overall number of employees and receipts of the entire enterprise (all establishments and affiliated firms) from all industries. The special tabulation enables SBA to evaluate average firm size, the four-firm concentration ratio, and distribution of firms by various receipts and employment size classes. It should be noted that the Economic Census tabulation data on the number of firms, number of establishments, number of employees, annual payroll, and annual receipts for a particular NAICS Industry category relate to establishments and firms that are primarily engaged in that Industry. To mitigate this limitation of the Economic Census tabulation data, SBA also examines the data from the System of Award Management (SAM) (formerly Central Contractor Registration (CCR)) and FPDS–NG which provides more recent data on Federal contract awards by NAICS code and the actual size of the concerns receiving the contract awards.

In some cases, where data were not available at the 6-digit industry level due to disclosure prohibitions in the Census Bureau's tabulation, SBA either estimates missing values using available relevant data or examines data at a higher level of industry aggregation, such as at the NAICS 2-digit (Sector), 3-digit (Subsector), or 4-digit (Industry Group) level. In some instances, SBA's analysis is based only on those factors for which data are available or estimates of missing values are possible.

To evaluate the refining capacity component of the size standard for NAICS 324110, Petroleum Refiners, SBA evaluated a special tabulation of refinery production data obtained from Energy Information Administration (EIA). SBA obtained the data on number of employees for petroleum refining companies in the EIA tabulation from Duns and Bradstreet (*www.dnb.com*) and those companies' SAM (CCR) profiles.

To calculate average assets, SBA used sales to total assets ratios from the Risk Management Association's Annual eStatement Studies, 2009–2011, available at *www.statementstudies.org.*

To evaluate the Federal contracting factor, SBA examined the data from FPDS–NG for fiscal years 2009–2011, available at *https://www.fpds.gov* and 2007 Economic Census tabulation, which is the latest available as stated elsewhere in the rule.

To assess the impact on financial assistance to small businesses, SBA examined its internal data on 7(a) and 504 loan programs for fiscal years 2010–2012.

Data sources and estimation procedures SBA uses in its size standards analysis are documented in detail in SBA's ''Size Standards Methodology'' White Paper, which is available at *www.sba.gov/size.*

Dominance in Field of Operation

Section 3(a) of the Small Business Act (15 U.S.C. 632(a)) defines a small business concern as one that: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) meets a specific small business definition or size standard established by SBA's Administrator. SBA considers as part of its evaluation whether a business concern at a proposed or revised size standard would be dominant in its field of operation. For this, SBA generally examines the industry's market share of firms at the proposed or revised standard. SBA also examines distribution of firms by size to ensure that a contemplated size standard derived from its size standards analysis excludes the largest firms within an industry. Market share, the size distribution and other factors may indicate whether a firm can exercise a major controlling influence on a national basis in an industry where a significant number of business concerns are engaged. If a contemplated size standard includes dominant or the largest firms in an industry, SBA will consider a lower size standard than the one suggested by the analytical results to exclude the dominant and largest firms from being defined as small.

Selection of Size Standards

In NAICS Sector 31–33 (Manufacturing), currently there are four levels of employee based size standards: 500 employees (minimum), 750 employees, 1,000 employees, and 1,500 employees (maximum). In this proposed rule, SBA has applied its ''Size Standards Methodology'' for employee based size standards with two modifications. First, to be consistent with its policy of not lowering any size standards in all recent proposed and final rules on receipts based size standards, SBA is retaining the current 500-employee minimum and 1,500-employee maximum size standards for all industries in the Manufacturing Sector. In its ''Size Standards Methodology,'' SBA had proposed setting the minimum size standard for manufacturing industries at 250 employees and the maximum size standard at 1,000 employees. However, doing so would mean lowering existing size standards, thereby making currently small businesses ineligible to continue their participation in Federal small business programs. This would run counter to what SBA and the Administration are doing to help small businesses to create jobs and boost economic growth. Further, lowering a manufacturing size standard below 500 employees would conflict with the existing 500-employee size standard for non-manufacturers under the SBA's non-manufacturer's rule. Second, SBA is proposing a new 1,250-employee size standard between 1,000 employees and 1,500 employees. This new size standard level maintains the same 250-employee increment between the two successive levels that SBA has below 1,000 employees (500, 750, 1,000). SBA proposes, therefore, to apply one of these five employee based size standards to the analysis of size standards for industries in the Manufacturing Sector: 500 employees, 750 employees, 1,000 employees, 1,250 employees, and 1,500 employees.

To simplify size standards and for other reasons, SBA may propose a common size standard for closely related industries. Although the size standard analysis may support a separate size standard for each industry, SBA believes that establishing different size standards for closely related industries may not always be appropriate. For example, in cases where many of the same businesses operate in the same multiple industries, a common size standard for those industries might better reflect the Federal marketplace. This might also make size standards among related industries more consistent than separate size standards for each of those industries. Whenever SBA proposes a common size standard for closely related industries it will provide its justification.

Evaluation of Industry Structure

In this proposed rule, SBA evaluated 364 industries in NAICS Sectors 31–33 to assess the appropriateness of their current size standards. As described above, SBA compared data on the economic characteristics of each of those industries to the average characteristics of industries in two comparison groups. The first comparison group consists of all industries in Manufacturing and industries not in Wholesale Trade or Retail Trade with 500-employee size standards. SBA refers this group of industries to as the ''employee based anchor comparison group.'' Because the goal of SBA's review is to assess whether a specific industry's size standard should be the same as or different from the anchor size standard, this is the most logical group of industries to analyze. In addition, this group includes a sufficient number of firms to provide a meaningful assessment and comparison of industry characteristics.

As stated previously, if the characteristics of an industry are similar to the average characteristics of industries in the anchor comparison group, the anchor size standard is generally appropriate for that industry. If an industry's structure is significantly different from industries in the anchor group, a size standard lower or higher than the anchor size standard might be appropriate. The proposed new size standard is based on the difference between the characteristics of the anchor comparison group and a second industry comparison group. As described above, the second comparison group for employee based standards consists of industries with either 1,000-employee or 1,500-employee size standards. The weighted average size standard for this group is 1,323 employees. SBA refers this group of industries to as the ''higher level employee based size standard comparison group.'' SBA determines differences in industry structure between an industry under review and the industries in the two comparison groups by comparing data on each of the industry factors, including average firm size, average assets size, the four-firm concentration ratio, and the Gini coefficient of distribution of firms by size. Table 1, Average Characteristics of Employee Based Comparison Groups, shows the average firm size (both simple and weighted), average assets size, four-firm concentration ratio, average employees of the four largest firms, and the Gini coefficient for both anchor level and higher level comparison groups for employee based size standards.

TABLE 1—AVERAGE CHARACTERISTICS OF EMPLOYEE BASED COMPARISON GROUPS

Employee based comparison group	Average firm size (number of employees)		Average assets size ($ million)	Four-firm concentration ratio (%)	Average employees of four largest firms*	Gini coefficient
	Simple average	Weighted average				
Anchor Level	51	322	$6.4	35.9	1,267	0.765
Higher Level	136	602	37.0	64.3	2,033	0.808

*To be used for industries with a four-firm concentration ratio of 40% or greater.

Derivation of Size Standards Based on Industry Factors

For each industry factor in Table 1, Average Characteristics of Employee Based Comparison Groups, SBA derives a separate size standard based on the differences between the values for an industry under review and the values for the two comparison groups. If the industry value for a particular factor is near the corresponding factor for the anchor comparison group, the 500-employee anchor size standard is appropriate for that factor.

An industry factor significantly above or below the anchor comparison group will generally imply a size standard for that industry above or below the 500-employee anchor. The new size standard in these cases is based on the proportional difference between the industry value and the values for the two comparison groups.

For example, an industry's simple average firm size of 75 employees will support a 750-employee size standard. The 75-employee level is 28.2 percent between 51 employees for the anchor comparison group and 136 employees for the higher level comparison group ((75 employees − 51 employees) ÷ (136 employees − 51 employees) = 0.282 or 28.2%). This proportional difference is applied to the difference between the size standard of 500 employees for the anchor level size standard group and average size standard of 1,323 employees for the higher level size standard group and then added to 500 employees to estimate a size standard of 733 employees ([{1,323 employees − 500 employees} * 0.282] + 500 employees = 733 employees). The final step is to round the estimated 733-employee size standard to the nearest size standard level, which in this example is 750 employees.

SBA applies the above calculation to derive a size standard for each industry factor. Detailed formulas involved in these calculations are presented in SBA's ''Size Standards Methodology'' which is available on its Web site at *www.sba.gov/size.* As stated above, SBA has also included its ''Size Standards Methodology'' as a supporting document in the electronic docket of this proposed rule at *www.regulations.gov.* (However, it should be noted that figures in the ''Size Standards Methodology'' White Paper are based on 2002 Economic Census data and are different from those presented in this proposed rule. That is because when SBA prepared its ''Size Standards Methodology,'' the 2007 Economic Census data were not yet available). Table 2, Values of Industry Factors and Supported Size Standards, below, shows ranges of values for each industry factor and the levels of size standards supported by those values.

TABLE 2—VALUES OF INDUSTRY FACTORS AND SUPPORTED SIZE STANDARDS

If simple average firm size (number of employees)	*Or if* weighted average firm size (number of employees)	*Or if* average assets size ($ million)	*Or if* average number employees of largest four firms	*Or if* Gini coefficient	Then implied size standard is (number of employees)
< 63.9	< 364.5	< 11.1	< 1,383.3	< 0.772	500
63.9 to < 89.7	364.5 to < 449.6	11.1 to < 20.3	1,383.3 to < 1,616.0	0.772 to < 0.785	750
89.7 to < 115.6	449.6 to < 534.6	20.3 to < 29.6	1,616.0 to < 1,848.7	0.785 to < 0.798	1,000
115.6 to < 141.4	534.6 to < 619.7	29.6 to < 38.9	1,848.7 to < 2,081.4	0.798 to < 0.811	1,250
≥ 141.4	≥ 619.7	≥ 38.9	≥ 2,081.4	≥ 0.811	1,500

Derivation of Size Standard Based on Federal Contracting Factor

Besides industry structure, SBA also evaluates Federal contracting data to assess the success of small businesses in getting Federal contracts under the existing size standards. For industries where Federal contract dollars average $100 million or more annually and the small business share of total Federal contracting dollars is 10 to 30 percent lower than the small business share of total industry receipts, SBA has designated a size standard one level higher than their current size standard. For industries where the small business share of total Federal contracting dollars is more than 30 percent lower than the small business share of total industry receipts, SBA has designated a size standard two levels higher than the current size standard. For industries, where this difference is less than 10 percent, SBA applies the existing size standard for the Federal contracting factor.

Because of the complex relationships among several variables affecting small business participation in the Federal marketplace, SBA has chosen not to designate a size standard for the Federal contracting factor alone that is more than two levels above the current size standard. SBA believes that a larger adjustment to size standards based on Federal contracting activity should be based on a more detailed analysis of the impact of any subsequent revision to the current size standard. In limited situations, however, SBA may conduct a more extensive examination of Federal contracting experience. This may support a different size standard than indicated by this general rule and take into consideration significant and unique aspects of small business competitiveness in the Federal contract market. SBA welcomes comments on its methodology for incorporating the Federal contracting factor in its size standard analysis and suggestions for

alternative methods and other relevant information on small business experience in the Federal contract market that SBA should consider.

When SBA adopted NAICS 2012 for its size standards, a number of industries under NAICS 2007 were merged to form new industries or combined with other existing industries. SBA adopted the highest size standard among the merged or combined industries under NAICS 2007 as the size standard for the new industry or modified industry under NAICS 2012. As a result, the size standard increased, effective October 1, 2012, for a number of industries in NAICS Sector 31–33. However, FPDS-NG data for fiscal years 2009–2011 that SBA analyzed to derive the Federal contracting factor were based on older size standards under NAICS 2007. Thus, for industries for which the size standard increased due to the adoption of NAICS 2012, the Federal contracting factor was based on the size standard that was on effect prior to October 1, 2012. Similarly, where multiple industries were merged to a new, single industry, the size standard for Federal contract factor for the new industry was the weighted average size standard of the merged industries prior to October 1, 2012, rounded to the nearest size level. The shares of contract dollars of individual merged industries served as the weights in computing the weighted average size standard.

Of the 364 industries reviewed in this proposed rule, 119 averaged $100 million or more annually in Federal contracting during fiscal years 2009–2011 and thus, the Federal contracting factor was significant for those industries. Of the 119 industries, the difference between the small business share of total industry receipts and small business share of Federal contracting dollars was less than 10 percent for 78 industries and in this proposed rule, SBA applied the existing size standard to each. This difference was between 10 and 30 percent for 29 industries for which a size standard one level higher than the existing size standard was applied. Finally, in 12 industries, this difference was more than 30 percent and a size standard that was two levels higher than the existing size standard was applied.

New Size Standards Based on Industry and Federal Contracting Factors

Table 3, Size Standards Supported by Each Factor for Each Industry (No. of Employees), below, shows the results of analyses of industry and Federal contracting factors for each industry covered by this proposed rule. Many NAICS industries in columns 2, 3, 4, 6, and 7 show two numbers. The upper number is the value for the industry factor shown on the top of the column and the lower number is the size standard supported by that factor. For the four-firm concentration ratio, SBA estimates a size standard only if its value is 40 percent or more. If the four-firm concentration ratio for an industry is less than 40 percent, SBA does not estimate a size standard for that factor. If the four-firm concentration ratio is 40 percent or more, SBA indicates in column 6 the average size of the industry's four largest firms together with a size standard based on that average. Column 9 shows a calculated new size standard for each industry. This is the average of the size standards supported by each factor, rounded to the nearest fixed size level. However, the size standards for the simple average and weighted average firm size are averaged together, and therefore receive a single weight. Analytical details involved in the averaging procedure are described in SBA's ''Size Standard Methodology.'' For comparison with the new standards, the current size standards are in column 10 of Table 3.

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
311111 Dog and Cat Food Manufacturing	85	551	.....	71.0	1,591	0.884	.....	.....	.....
	750	1,250	.....	.....	750	1,500	.....	1,000	500
311119 Other Animal Food Manufacturing.	29	146	$8.3	30.1	.....	0.784	.....	.....	.....
	500	500	500	.....	.....	750	.....	500	500
311211 Flour Milling	60	427	25.9	54.5	957	0.821	−14.9	.....	.....
	500	750	1,000	.....	500	1,500	750	1,000	500
311212 Rice Milling	66	256	.....	45.6	419	0.693	.....	.....	.....
	750	500	.....	.....	500	500	.....	500	500
311213 Malt Manufacturing	68	123	.....	73.2	145	0.559	.....	.....	.....
	750	500	.....	.....	500	500	.....	500	500
311221 Wet Corn Milling	248	1,101	.....	83.8	1,384	0.823	.....	.....	.....
	1,500	1,500	.....	.....	750	1,500	.....	1,250	750
311224 Soybean and Other Oilseed Processing.	76	347	.....	.....	.....	0.824	8.8	.....	.....
	750	500	.....	.....	.....	1,500	500	1,000	1,000
311225 Fats and Oils Refining and Blending.	116	337	.....	54.4	855	0.725	62.3	.....	.....
	1,000	500	.....	.....	500	500	1,000	750	1,000
311230 Breakfast Cereal Manufacturing	392	1,214	.....	80.4	1,817	0.754	.....	.....	.....
	1,500	1,500	.....	.....	1,000	500	.....	1,000	1,000
311313 Beet Sugar Manufacturing	550	796	.....	81.5	1,233	0.325	.....	.....	.....
	1,500	1,500	.....	.....	500	500	.....	750	750
311314 Cane Sugar Manufacturing	227	430	.....	.....	.....	0.567	.....	.....	.....
	1,500	750	.....	.....	.....	500	.....	1,000	750
311340 Nonchocolate Confectionery Manufacturing.	44	329	.....	38.2	.....	0.840	.....	.....	.....
	500	500	.....	.....	.....	1,500	.....	1,000	500
311351 Chocolate and Confectionery Manufacturing from Cacao Beans.	50	464	.....	.....	.....	0.895	.....	.....	.....
	500	1,000	.....	.....	.....	1,500	.....	1,250	500
311352 Confectionery Manufacturing from Purchased Chocolate.	29	485	4.0	.....	.....	0.913	.....	.....	.....
	500	1,000	500	.....	.....	1,500	.....	1,000	500
311411 Frozen Fruit, Juice, and Vegetable Manufacturing.	231	911	45.3	41.1	3,213	0.737	22.3	.....	.....
	1,500	1,500	1,500	.....	1,500	500	500	1,000	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
311412 Frozen Specialty Food Manufacturing.	150	879	16.6	29.4	.....	0.819	.....	.....	.....
	1,500	1,500	750	.....	.....	1,500	.....	1,250	500
311421 Fruit and Vegetable Canning	102	656	20.6	24.4	.....	0.831	6.8	.....	.....
	1,000	1,500	1,000	.....	.....	1,500	500	1,000	500
311422 Specialty Canning	139	970	.....	75.9	1,664	0.876	.....	.....	.....
	1,250	1,500	.....	.....	1,000	1,500	.....	1,250	1,000
311423 Dried and Dehydrated Food Manufacturing.	101	388	20.6	35.9	.....	0.720	.....	.....	.....
	1,000	750	1,000	.....	.....	500	.....	750	500
311511 Fluid Milk Manufacturing	196	896	35.2	46.0	6,316	0.774	29.6	.....	.....
	1,500	1,500	1,250	.....	1,500	750	500	1,000	500
311512 Creamery Butter Manufacturing	67	145	30.1	78.9	225	0.589	.....	.....	.....
	750	500	1,250	.....	500	500	.....	750	500
311513 Cheese Manufacturing	121	729	34.7	31.5	.....	0.818	−0.7	.....	.....
	1,250	1,500	1,250	.....	.....	1,500	500	1,250	500
311514 Dry, Condensed, and Evaporated Dairy Product Manufacturing.	108	403	.....	41.9	1,195	0.726	.....	.....	.....
	1,000	750	.....	.....	500	500	.....	750	500
311520 Ice Cream and Frozen Dessert Manufacturing.	53	445	12.1	52.7	1,818	0.863	.....	.....	.....
	500	750	750	.....	1,000	1,500	.....	1,000	500
311611 Animal (except Poultry) Slaughtering.	96	7,661	12.2	59.4	20,844	0.953	18.3	.....	.....
	1,000	1,500	750	.....	1,500	1,500	500	1,000	500
311612 Meat Processed from Carcasses	85	936	9.1	27.9	.....	0.848	.....	.....	.....
	750	1,500	500	.....	.....	1,500	.....	1,000	500
311613 Rendering and Meat Byproduct Processing.	78	517	10.3	42.8	974	0.691	.....	.....	.....
	750	1,000	500	.....	500	500	.....	750	500
311615 Poultry Processing	749	7,247	57.4	45.7	26,713	0.875	−3.6	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	500	1,250	500
311710 Seafood Product Preparation and Packaging.	69	547	7.9	.....	.....	0.786	.....	.....	.....
	750	1,250	500	.....	.....	1,000	.....	750	500
311811 Retail Bakeries	9	27	0.2	3.7	.....	0.396	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
311812 Commercial Bakeries	61	1,180	4.5	37.3	.....	0.886	−12.6	.....	.....
	500	1,500	500	.....	.....	1,500	750	1,000	500
311813 Frozen Cakes, Pies, and Other Pastries Manufacturing.	96	322	.....	32.4	.....	0.753	.....	.....	.....
	1,000	500	.....	.....	.....	500	.....	750	500
311821 Cookie and Cracker Manufacturing.	100	1,267	14.8	69.3	3,372	0.918	.....	.....	.....
	1,000	1,500	750	.....	1,500	1,500	.....	1,250	750
311824 Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour.	50	242	.....	.....	.....	0.781	.....	.....	.....
	500	500	.....	.....	.....	750	.....	750	500
311830 Tortilla Manufacturing	48	932	.....	57.4	1,726	0.850	.....	.....	.....
	500	1,500	.....	.....	1,000	1,500	.....	1,250	500
311911 Roasted Nuts and Peanut Butter Manufacturing.	74	346	13.9	33.5	.....	0.727	.....	.....	.....
	750	500	750	.....	.....	500	.....	750	500
311919 Other Snack Food Manufacturing	113	986	24.5	71.1	3,695	0.905	.....	.....	.....
	1,000	1,500	1,000	.....	1,500	1,500	.....	1,250	500
311920 Coffee and Tea Manufacturing	38	270	9.3	43.3	677	0.867	.....	.....	.....
	500	500	500	.....	500	1,500	.....	750	500
311930 Flavoring Syrup and Concentrate Manufacturing.	45	222	29.1	80.3	583	0.896	.....	.....	.....
	500	500	1,000	.....	500	1,500	.....	1,000	500
311941 Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing.	53	304	9.7	36.2	.....	0.801	.....	.....	.....
	500	500	500	.....	.....	1,250	.....	750	500
311942 Spice and Extract Manufacturing	58	222	12.7	29.6	.....	0.743	.....	.....	.....
	500	500	750	.....	.....	500	.....	500	500
311991 Perishable Prepared Food Manufacturing.	56	280	5.4	27.8	.....	0.775	.....	.....	.....
	500	500	500	.....	.....	750	.....	500	500
311999 All Other Miscellaneous Food Manufacturing.	43	262	5.7	18.7	.....	0.761	−29.0	.....	.....
	500	500	500	.....	.....	500	750	500	500
312111 Soft Drink Manufacturing	207	1,599	76.6	58.1	5,557	0.861	6.0	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	500	1,250	500
312112 Bottled Water Manufacturing	43	552	12.4	71.9	1,528	0.891	57.1	.....	.....
	500	1,250	750	.....	750	1,500	500	1,000	500
312113 Ice Manufacturing	16	555	.....	63.6	703	0.720	.....	.....	.....
	500	1,250	.....	.....	500	500	.....	750	500
312120 Breweries	60	4,594	33.4	89.5	3,929	0.942	.....	.....	.....
	500	1,500	1,250	.....	1,500	1,500	.....	1,250	500
312130 Wineries	18	357	9.6	42.3	1,753	0.845	.....	.....	.....
	500	500	500	.....	1,000	1,500	.....	1,000	500
312140 Distilleries	110	690	.....	69.5	1,225	0.867	.....	.....	.....
	1,000	1,500	.....	.....	500	1,500	.....	1,000	750
312230 Tobacco Manufacturing	245	978	195.8	.....	.....	0.840	−5.0	.....	.....
	1,500	1,500	1,500	.....	.....	1,500	1,000	1,500	1,000
313110 Fiber, Yarn, and Thread Mills	133	1,041	15.1	.....	.....	0.832	.....	.....	.....
	1,250	1,500	750	.....	.....	1,500	.....	1,250	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
313210 Broadwoven Fabric Mills	79	482	8.5	22.2		0.806			
	750	1,000	500			1,250		1,000	1,000
313220 Narrow Fabric Mills and Schiffli Machine Embroidery.	36	146	2.1			0.720			
	500	500	500			500		500	500
313230 Nonwoven Fabric Mills	94	352		45.3	1,443	0.774			
	1,000	500			750	750		750	500
313240 Knit Fabric Mills	45	227				0.724			
	500	500				500		500	500
313310 Textile and Fabric Finishing Mills	33	211	3.0			0.758			
	500	500	500			500		500	1,000
313320 Fabric Coating Mills	49	120	7.1	21.6		0.599			
	500	500	500			500		500	1,000
314110 Carpet and Rug Mills	137	1,779	24.9	63.6	4,751	0.905			
	1,250	1,500	1,000		1,500	1,500		1,500	500
314120 Curtain and Linen Mills	18	194	1.2			0.802			
	500	500	500			1,250		750	500
314910 Textile Bag and Canvas Mills	15	96	0.9			0.658	−13.7		
	500	500	500			500	750	500	500
314994 Rope, Cordage, Twine, Tire Cord, and Tire Fabric Mills.	49	286				0.821			
	500	500				1,500		1,000	1,000
314999 All Other Miscellaneous Textile Product Mills.	17	152	1.0	20.7		0.765	−23.6		
	500	500	500			500	750	500	500
315110 Hosiery and Sock Mills	75	415	5.3			0.795			
	750	750	500			1,000		750	500
315190 Other Apparel Knitting Mills	28	138	2.8			0.791			
	500	500	500			1,000		750	500
315210 Cut and Sew Apparel Contractors	13	73	0.4			0.488	−64.0		
	500	500	500			500	1,000	750	500
315220 Men's and Boys' Cut and Sew Apparel Manufacturing.	50	416	2.7			0.817	−5.1		
	500	750	500			1,500	500	750	500
315240 Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing.	26	225	2.9			0.794			
	500	500	500			1,000		750	500
315280 Other Cut and Sew Apparel Manufacturing.	25	129	1.3			0.747	−41.2		
	500	500	500			500	1,000	750	500
315990 Apparel Accessories and Other Apparel Manufacturing.	19	205	0.9			0.773	−8.3		
	500	500	500			750	500	500	500
316110 Leather and Hide Tanning and Finishing.	19	110	2.6	38.5		0.751			
	500	500	500			500		500	500
316210 Footwear Manufacturing	55	550				0.827	7.8		
	500	1,250				1,500	500	1,000	1,000
316992 Women's Handbag and Purse Manufacturing.	18	173		85.9	251	0.886			
	500	500			500	1,500		750	500
316998 All Other Leather Good and Allied Product Manufacturing.	21	184				0.739			
	500	500				500		500	500
321113 Sawmills	27	272	4.2	14.6		0.765			
	500	500	500			500		500	500
321114 Wood Preservation	32	211	6.4	31.1		0.722			
	500	500	500			500		500	500
321211 Hardwood Veneer and Plywood Manufacturing.	66	408	6.3	30.4		0.683			
	750	750	500			500		500	500
321212 Softwood Veneer and Plywood Manufacturing.	244	1,313		55.7	2,684	0.747			
	1,500	1,500			1,500	500		1,250	500
321213 Engineered Wood Member (except Truss) Manufacturing.	58	383		64.0	892	0.802			
	500	750			500	1,250		750	500
321214 Truss Manufacturing	45	214	2.6	14.3		0.643			
	500	500	500			500		500	500
321219 Reconstituted Wood Product Manufacturing.	115	384		27.7		0.682			
	1,000	750				500		750	500
321911 Wood Window and Door Manufacturing.	59	776	4.4	32.6		0.837			
	500	1,500	500			1,500		1,000	500
321912 Cut Stock, Resawing Lumber, and Planning.	30	139	3.5	16.3		0.681			
	500	500	500			500		500	500
321918 Other Millwork (including Flooring).	21	156	1.6	18.6		0.725			
	500	500	500			500		500	500
321920 Wood Container and Pallet Manufacturing.	22	196	1.0	11.3		0.590			
	500	500	500			500		500	500
321991 Manufactured Home (Mobile Home) Manufacturing.	179	1,995	14.8	47.7	4,539	0.824	64.6		
	1,500	1,500	750		1,500	1,500	500	1,250	500
321992 Prefabricated Wood Building Manufacturing.	35	228	3.0	21.9		0.736			
	500	500	500			500		500	500
321999 All Other Miscellaneous Wood Product Manufacturing.	19	107	1.5			0.706			
	500	500	500			500		500	500
322110 Pulp Mills	242	652		53.9	874	0.534			
	1,500	1,500			500	500		750	750

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
322121 Paper (except Newsprint) Mills	559	2,866	155.0	49.8	7,418	0.824	−1.6		
	1,500	1,500	1,500		1,500	1,500	750	1,250	750
322122 Newsprint Mills	307	517		58.1	651	0.393			
	1,500	1,000			500	500		750	750
322130 Paperboard Mills	476	1,367	193.7	45.8	3,598	0.685			
	1,500	1,500	1,500		1,500	500		1,250	750
322211 Corrugated and Solid Fiber Box Manufacturing.	118	2,033	15.5	40.7	8,642	0.852			
	1,250	1,500	750		1,500	1,500		1,250	500
322212 Folding Paperboard Box Manufacturing.	115	587	16.0	33.5		0.732			
	1,000	1,250	750			500		750	750
322219 Other Paperboard Container Manufacturing.	87	485	11.1			0.813			
	750	1,000	750			1,500		1,000	750
322220 Paper Bag and Coated and Treated Paper Manufacturing.	83	269	13.6			0.723	11.4		
	750	500	750			500	500	750	500
322230 Stationery Product Manufacturing	68	438	6.8			0.801			
	750	750	500			1,250		750	500
322291 Sanitary Paper Product Manufacturing.	151	716	43.7	62.2	1,838	0.812			
	1,500	1,500	1,500		1,000	1,500		1,500	500
322299 All Other Converted Paper Product Manufacturing.	40	138	5.0	20.5		0.697			
	500	500	500			500		500	500
323111 Commercial Printing (except Screen and Books).	20	266	1.6			0.780			
	500	500	500			750		500	500
323113 Commercial Screen Printing	15	106	0.8	12.2		0.695			
	500	500	500			500		500	500
323117 Books Printing	59	851	5.1	42.5	3,177	0.832			
	500	1,500	500		1,500	1,500		1,250	500
323120 Support Activities for Printing	20	146	1.1			0.718			
	500	500	500			500		500	500
324110 Petroleum Refineries	662	2,356	1,849.6	47.5	6,459	0.746	0.1		
	1,500	1,500	1,500		1,500	500	1,500	1,250	1,500
324121 Asphalt Paving Mixture and Block Manufacturing.	34	109	11.9	21.8		0.662			
	500	500	750			500		500	500
324122 Asphalt Shingle and Coating Materials Manufacturing.	92	480		67.0	1,755	0.769			
	1,000	1,000			1,000	500		750	750
324191 Petroleum Lubricating Oil and Grease Manufacturing.	29	96	12.6	42.5	348	0.814			
	500	500	750		500	1,500		750	500
324199 All Other Petroleum and Coal Products Manufacturing.	34	129	15.7	45.5	173	0.596			
	500	500	750		500	500		500	500
325110 Petrochemical Manufacturing	243	577		79.6	1,362	0.696			
	1,500	1,250			500	500		750	1,000
325120 Industrial Gas Manufacturing	115	599		67.6	1,335	0.832	7.9		
	1,000	1,250			500	1,500	1,000	1,000	1,000
325130 Synthetic Dye and Pigment Manufacturing.	81	324				0.742			
	750	500				500		750	1,000
325180 Other Basic Inorganic Chemical Manufacturing.	91	298	37.0			0.734	11.5		
	1,000	500	1,250			500	1,000	1,000	1,000
325193 Ethyl Alcohol Manufacturing	45	156	72.7	25.3		0.485			
	500	500	1,500			500		750	1,000
325194 Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing.	77	323	86.9			0.803			
	750	500	1,500			1,250		1,250	750
325199 All Other Basic Organic Chemical Manufacturing.	125	474	98.1	32.0		0.773			
	1,250	1,000	1,500			750		1,250	1,000
325211 Plastics Material and Resin Manufacturing.	88	356	52.8	31.8		0.834			
	750	500	1,500			1,500		1,250	750
325212 Synthetic Rubber Manufacturing	73	239		43.0	763	0.703			
	750	500			500	500		500	1,000
325220 Artificial and Synthetic Fibers and Filaments Manufacturing.	161	612				0.739			
	1,500	1,250				500		1,000	1,000
325311 Nitrogenous Fertilizer Manufacturing.	29	151	21.4	61.4	364	0.785			
	500	500	1,000		500	1,000		750	1,000
325312 Phosphatic Fertilizer Manufacturing.	123	643		82.9	1,093	0.725			
	1,250	1,500			500	500		750	500
325314 Fertilizer (Mixing Only) Manufacturing.	24	85	6.6	29.6		0.687			
	500	500	500			500		500	500
325320 Pesticide and Other Agricultural Chemical Manufacturing.	53	254	33.6	58.2	805	0.835			
	500	500	1,250		500	1,500		1,000	500
325411 Medicinal and Botanical Manufacturing.	64	382	16.3	53.5	1,730	0.828	−26.8		
	750	750	750		1,000	1,500	1,000	1,000	750
325412 Pharmaceutical Preparation Manufacturing.	208	1,611	124.8	34.5		0.897	−7.4		
	1,500	1,500	1,500			1,500	750	1,250	750
325413 In-Vitro Diagnostic Substance Manufacturing.	144	876		48.6	1,784	0.857	9.3		
	1,500	1,500			1,000	1,500	500	1,250	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title	Simple average firm size (number of employees)	Weighted average firm size (number of employees)	Average assets size ($ million)	Four-firm ratio %	Four-firm average size (number of employees)	Gini coefficient	Federal contract factor (%)	Calculated size standard (number of employees)	Current size standard (number of employees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
325414 Biological Product (except Diagnostic) Manufacturing.	147	746	.....	51.9	2,461	0.830	0.8	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	500	1,250	500
325510 Paint and Coating Manufacturing	37	395	9.9	38.9	.....	0.868	.....	.....	.....
	500	750	500	.....	.....	1,500	.....	1,000	500
325520 Adhesive Manufacturing	50	161	11.0	23.2	.....	0.742	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
325611 Soap and Other Detergent Manufacturing.	35	465	18.9	67.1	1,619	0.859	−13.1	.....	.....
	500	1,000	750	.....	1,000	1,500	1,000	1,000	750
325612 Polish and Other Sanitation Good Manufacturing.	36	231	8.7	60.2	1,235	0.850	.....	.....	.....
	500	500	500	.....	500	1,500	.....	750	500
325613 Surface Active Agent Manufacturing.	48	192	.....	60.5	510	0.812	.....	.....	.....
	500	500	.....	.....	500	1,500	.....	750	500
325620 Toilet Preparation Manufacturing	74	576	26.9	49.9	2,568	0.879	.....	.....	.....
	750	1,250	1,000	.....	1,500	1,500	.....	1,250	500
325910 Printing Ink Manufacturing	51	296	8.9	49.9	1,045	0.765	.....	.....	.....
	500	500	500	.....	500	500	.....	500	500
325920 Explosives Manufacturing	117	402	.....	52.2	757	0.650	−20.2	.....	.....
	1,250	750	.....	.....	500	500	1,000	750	750
325991 Custom Compounding of Purchased Resins.	43	178	9.5	27.6	.....	0.749	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
325992 Photographic Film, Paper, Plate, and Chemical Manufacturing.	67	1,623	.....	67.6	4,055	0.942	.....	.....	.....
	750	1,500	.....	.....	1,500	1,500	.....	1,500	500
325998 All Other Miscellaneous Chemical Product and Preparation Manufacturing.	34	147	7.2	18.9	.....	0.761	−17.9	.....	.....
	500	500	500	.....	.....	500	750	500	500
326111 Plastics Bag and Pouch Manufacturing.	93	404	12.6	26.5	.....	0.762	.....	.....	.....
	1,000	750	750	.....	.....	500	.....	750	500
326112 Plastics Packaging Film and Sheet (including Laminated) Manufacturing.	92	347	17.0	48.5	2,364	0.733	.....	.....	.....
	1,000	500	750	.....	1,500	500	.....	1,000	500
326113 Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing.	73	267	12.2	19.3	.....	0.746	.....	.....	.....
	750	500	750	.....	.....	500	.....	750	500
326121 Unlaminated Plastics Profile Shape Manufacturing.	49	167	6.5	29.2	.....	0.739	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
326122 Plastics Pipe and Pipe Fitting Manufacturing.	83	243	16.1	30.8	.....	0.679	.....	.....	.....
	750	500	750	.....	.....	500	.....	750	500
326130 Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing.	53	241	7.6	34.5	.....	0.760	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
326140 Polystyrene Foam Product Manufacturing.	81	571	10.5	45.9	2,624	0.803	.....	.....	.....
	750	1,250	500	.....	1,500	1,250	.....	1,000	500
326150 Urethane and Other Foam Product (except Polystyrene) Manufacturing.	74	395	.....	28.0	.....	0.774	.....	.....	.....
	750	750	.....	.....	.....	750	.....	750	500
326160 Plastics Bottle Manufacturing	186	883	33.4	46.3	3,257	0.796	.....	.....	.....
	1,500	1,500	1,250	.....	1,500	1,000	.....	1,250	500
326191 Plastics Plumbing Fixture Manufacturing.	53	399	4.2	32.2	.....	0.796	.....	.....	.....
	500	750	500	.....	.....	1,000	.....	750	500
326199 All Other Plastics Product Manufacturing.	67	366	6.7	.....	.....	0.780	.....	.....	.....
	750	750	500	.....	.....	750	.....	750	750
326211 Tire Manufacturing (except Retreading).	552	6,344	.....	77.6	9,879	0.895	7.4	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	1,000	1,500	1,000
326212 Tire Retreading	21	137	1.6	28.2	.....	0.641	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
326220 Rubber and Plastics Hoses and Belting Manufacturing.	100	471	12.4	38.6	.....	0.738	.....	.....	.....
	1,000	1,000	750	.....	.....	500	.....	750	500
326291 Rubber Product Manufacturing for Mechanical Use.	86	412	8.9	25.5	.....	0.777	.....	.....	.....
	750	750	500	.....	.....	750	.....	750	500
326299 All Other Rubber Product Manufacturing.	52	160	6.4	26.9	.....	0.744	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
327110 Pottery, Ceramics, and Plumbing Fixture Manufacturing.	22	263	.....	.....	.....	0.846	.....	.....	.....
	500	500	.....	.....	.....	1,500	.....	1,000	750
327120 Clay Building Material and Refractories Manufacturing.	59	314	10.0	.....	.....	0.769	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	750
327211 Flat Glass Manufacturing	519	1,086	78.3	68.9	1,586	0.571	.....	.....	.....
	1,500	1,500	1,500	.....	750	500	.....	1,000	1,000
327212 Other Pressed and Blown Glass and Glassware Manufacturing.	48	656	.....	34.4	.....	0.895	.....	.....	.....
	500	1,500	.....	.....	.....	1,500	.....	1,250	750
327213 Glass Container Manufacturing	641	2,038	.....	87.1	3,040	0.709	.....	.....	.....
	1,500	1,500	.....	.....	1,500	500	.....	1,250	750
327215 Glass Product Manufacturing Made of Purchased Glass.	41	584	4.1	29.8	.....	0.870	.....	.....	.....
	500	1,250	500	.....	.....	1,500	.....	1,000	500
327310 Cement Manufacturing	120	626	.....	40.8	1,721	0.770	.....	.....	.....
	1,250	1,500	.....	.....	1,000	500	.....	1,000	750
327320 Ready-Mix Concrete Manufacturing.	44	368	8.9	22.6	.....	0.764	.....	.....	.....
	500	750	500	.....	.....	500	.....	500	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
327331 Concrete Block and Brick Manufacturing.	42	236	9.2	32.3	.....	0.694	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
327332 Concrete Pipe Manufacturing	69	460	13.2	54.0	1,328	0.745	.....	.....	.....
	750	1,000	750	.....	500	500	.....	750	500
327390 Other Concrete Product Manufacturing.	35	213	3.6	19.2	.....	0.760	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
327410 Lime Manufacturing	108	507	.....	69.0	673	0.624	.....	.....	.....
	1,000	1,000	.....	.....	500	500	.....	750	500
327420 Gypsum Product Manufacturing ..	68	1,272	.....	73.6	2,108	0.901	.....	.....	.....
	750	1,500	.....	.....	1,500	1,500	.....	1,500	1,000
327910 Abrasive Product Manufacturing	49	424	8.7	58.4	1,348	0.824	.....	.....	.....
	500	750	500	.....	500	1,500	.....	750	500
327991 Cut Stone and Stone Product Manufacturing.	16	57	1.1	6.9	.....	0.525	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
327992 Ground or Treated Mineral and Earth Manufacturing.	41	101	.....	43.7	374	0.698	.....	.....	.....
	500	500	.....	.....	500	500	.....	500	500
327993 Mineral Wool Manufacturing	96	889	.....	55.3	2,210	0.841	.....	.....	.....
	1,000	1,500	.....	.....	1,500	1,500	.....	1,500	750
327999 All Other Miscellaneous Nonmetallic Mineral Product Manufacturing.	29	271	6.2	40.8	898	0.743	.....	.....	.....
	500	500	500	.....	500	500	.....	500	500
331110 Iron and Steel Mills and Ferroalloy Manufacturing.	425	2,108	199.2	.....	.....	0.798	.....	.....	.....
	1,500	1,500	1,500	.....	.....	1,250	.....	1,500	1,000
331210 Iron and Steel Pipe and Tube Manufacturing from Purchased Steel.	162	299	36.5	34.2	.....	0.536	.....	.....	.....
	1,500	500	1,250	.....	.....	500	.....	1,000	1,000
331221 Rolled Steel Shape Manufacturing.	87	165	26.5	30.8	.....	0.545	.....	.....	.....
	750	500	1,000	.....	.....	500	.....	750	1,000
331222 Steel Wire Drawing	70	246	11.4	25.2	.....	0.710	.....	.....	.....
	750	500	750	.....	.....	500	.....	750	1,000
331313 Alumina Refining and Primary Aluminum Production.	234	656	.....	.....	.....	0.686	.....	.....	.....
	1,500	1,500	.....	.....	.....	500	.....	1,000	1,000
331314 Secondary Smelting and Alloying of Aluminum.	69	306	24.1	54.8	776	0.716	.....	.....	.....
	750	500	1,000	.....	500	500	.....	750	750
331315 Aluminum Sheet, Plate, and Foil Manufacturing.	197	1,462	.....	70.5	2,445	0.866	3.6	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	750	1,250	750
331318 Other Aluminum Rolling, Drawing, and Extruding.	120	378	18.7	.....	.....	0.700	.....	.....	.....
	1,250	750	750	.....	.....	500	.....	750	750
331410 Nonferrous Metal (except Aluminum) Smelting and Refining.	61	259	.....	.....	.....	0.823	.....	.....	.....
	500	500	.....	.....	.....	1,500	.....	1,000	1,000
331420 Copper Rolling, Drawing, Extruding, and Alloying.	132	408	55.1	.....	.....	0.751	−16.6	.....	.....
	1,250	750	1,500	.....	.....	500	1,000	1,000	1,000
331491 Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding.	65	281	17.8	48.5	1,545	0.784	−11.0	750	750
	750	500	750	.....	750	750	1,000	.....	.....
331492 Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum).	54	153	14.0	28.2	.....	0.617	.....	.....	.....
	500	500	750	.....	.....	500	.....	500	750
331511 Iron Foundries	128	675	16.3	29.4	.....	0.768	.....	.....	.....
	1,250	1,500	750	.....	.....	500	.....	1,000	500
331512 Steel Investment Foundries	145	631	.....	61.9	2,055	0.752	.....	.....	.....
	1,500	1,500	.....	.....	1,250	500	.....	1,000	500
331513 Steel Foundries (except Investment).	86	343	9.0	30.5	.....	0.742	.....	.....	.....
	750	500	500	.....	.....	500	.....	500	500
331523 Nonferrous Metal Die-Casting Foundries.	84	335	9.9	.....	.....	0.744	.....	.....	.....
	750	500	500	.....	.....	500	.....	500	500
331524 Aluminum Foundries (except Die-Casting).	47	242	4.2	27.5	.....	0.778	.....	.....	.....
	500	500	500	.....	.....	750	.....	500	500
331529 Other Nonferrous Metal Foundries (except Die-Casting).	35	137	3.5	.....	.....	0.688	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332111 Iron and Steel Forging	64	230	11.3	20.8	.....	0.719	.....	.....	.....
	750	500	750	.....	.....	500	.....	750	500
332112 Nonferrous Forging	128	421	.....	51.5	687	0.672	.....	.....	.....
	1,250	750	.....	.....	500	500	.....	750	500
332114 Custom Roll Forming	51	152	.....	36.9	.....	0.732	.....	.....	.....
	500	500	.....	.....	.....	500	.....	500	500
332117 Powder Metallurgy Part Manufacturing.	76	204	8.4	37.5	.....	0.656	.....	.....	.....
	750	500	500	.....	.....	500	.....	500	500
332119 Metal Crown, Closure, and Other Metal Stamping (except Automotive).	41	131	4.3	.....	.....	0.676	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332215 Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing.	44	221	9.0	.....	.....	0.806	.....	.....	.....
	500	500	500	.....	.....	1,250	.....	750	500
332216 Saw Blade and Handtool Manufacturing.	35	240	4.2	.....	.....	0.791	14.3	.....	.....
	500	500	500	.....	.....	1,000	500	750	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title	Simple average firm size (number of employees)	Weighted average firm size (number of employees)	Average assets size ($ million)	Four-firm ratio %	Four-firm average size (number of employees)	Gini coefficient	Federal contract factor (%)	Calculated size standard (number of employees)	Current size standard (number of employees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
332311 Prefabricated Metal Building and Component Manufacturing.	42	386	4.5	27.6	.....	0.787	3.5	.....	.....
	500	750	500	.....	.....	1,000	500	750	500
332312 Fabricated Structural Metal Manufacturing.	34	196	4.5	10.4	.....	0.726	−21.9	.....	.....
	500	500	500	.....	.....	500	750	500	500
332313 Plate Work Manufacturing	28	92	2.8	8.6	.....	0.640	−68.5	.....	.....
	500	500	500	.....	.....	500	1,000	750	500
332321 Metal Window and Door Manufacturing.	65	385	5.3	12.7	.....	0.788	.....	.....	.....
	750	750	500	.....	.....	1,000	.....	750	500
332322 Sheet Metal Work Manufacturing	29	135	2.4	7.4	.....	0.693	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332323 Ornamental and Architectural Metal Work Manufacturing.	17	127	1.5	15.9	.....	0.707	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332410 Power Boiler and Heat Exchanger Manufacturing.	84	296	.....	27.2	.....	0.665	−43.5	.....	.....
	750	500	.....	.....	.....	500	1,000	750	500
332420 Metal Tank (Heavy Gauge) Manufacturing.	60	228	.....	17.4	.....	0.700	−42.8	.....	.....
	500	500	.....	.....	.....	500	1,000	750	500
332431 Metal Can Manufacturing	281	1,425	.....	76.5	3,349	0.824	.....	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	.....	1,500	1,000
332439 Other Metal Container Manufacturing.	40	177	5.2	28.8	.....	0.717	−10.4	.....	.....
	500	500	500	.....	.....	500	750	500	500
332510 Hardware Manufacturing	56	400	7.6	24.1	.....	0.813	14.0	.....	.....
	500	750	500	.....	.....	1,500	500	750	500
332613 Spring Manufacturing	49	271	5.6	.....	.....	0.749	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332618 Other Fabricated Wire Product Manufacturing.	30	119	2.9	9.6	.....	0.700	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332710 Machine Shops	13	50	0.9	1.7	.....	0.590	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332721 Precision Turned Product Manufacturing.	30	85	2.5	4.3	.....	0.601	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332722 Bolt, Nut, Screw, Rivet, and Washer Manufacturing.	54	302	7.0	21.1	.....	0.732	−20.8	.....	.....
	500	500	500	.....	.....	500	750	500	500
332811 Metal Heat Treating	36	149	4.2	26.2	.....	0.692	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	750
332812 Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers.	24	102	3.0	22.0	.....	0.768	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332813 Electroplating, Plating, Polishing, Anodizing, and Coloring.	23	70	1.4	10.5	.....	0.624	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332911 Industrial Valve Manufacturing	100	462	14.2	27.1	.....	0.781	.....	.....	.....
	1,000	1,000	750	.....	.....	750	.....	750	500
332912 Fluid Power Valve and Hose Fitting Manufacturing.	111	654	16.1	38.9	.....	0.798	.....	.....	.....
	1,000	1,500	750	.....	.....	1,250	.....	1,000	500
332913 Plumbing Fixture Fitting and Trim Manufacturing.	92	627	19.1	58.1	1,171	0.820	.....	.....	.....
	1,000	1,500	750	.....	500	1,500	.....	1,000	500
332919 Other Metal Valve and Pipe Fitting Manufacturing.	71	211	11.5	17.9	.....	0.668	.....	.....	.....
	750	500	750	.....	.....	500	.....	750	500
332991 Ball and Roller Bearing Manufacturing.	234	994	40.7	58.9	3,423	0.800	30.8	.....	.....
	1,500	1,500	1,500	.....	1,500	1,250	750	1,250	750
332992 Small Arms Ammunition Manufacturing.	93	935	.....	79.3	1,886	0.878	−11.6	.....	.....
	1,000	1,500	.....	.....	1,250	1,500	1,250	1,250	1,000
332993 Ammunition (except Small Arms) Manufacturing.	151	585	.....	80.2	795	0.808	−17.6	.....	.....
	1,500	1,250	.....	.....	500	1,250	1,500	1,250	1,500
332994 Small Arms, Ordnance, and Ordnance Accessories Manufacturing.	54	518	.....	.....	.....	0.855	−17.7	.....	.....
	500	1,000	.....	.....	.....	1,500	1,000	1,000	1,000
332996 Fabricated Pipe and Pipe Fitting Manufacturing.	44	164	4.9	24.1	.....	0.715	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
332999 All Other Miscellaneous Fabricated Metal Product Manufacturing.	22	88	2.3	.....	.....	0.674	−34.1	.....	.....
	500	500	500	.....	.....	500	1,000	750	750
333111 Farm Machinery and Equipment Manufacturing.	50	681	11.1	59.0	4,290	0.899	.....	.....	.....
	500	1,500	750	.....	1,500	1,500	.....	1,250	500
333112 Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing.	142	1,010	33.5	71.1	3,059	0.860	.....	.....	.....
	1,500	1,500	1,250	.....	1,500	1,500	.....	1,500	500
333120 Construction Machinery Manufacturing.	99	1,086	36.6	53.6	5,741	0.890	−9.5	.....	.....
	1,000	1,500	1,250	.....	1,500	1,500	750	1,250	750
333131 Mining Machinery and Equipment Manufacturing.	51	310	9.1	38.0	.....	0.747	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333132 Oil and Gas Field Machinery and Equipment Manufacturing.	86	709	21.2	32.4	.....	0.837	.....	.....	.....
	750	1,500	1,000	.....	.....	1,500	.....	1,250	500
333241 Food Product Machinery Manufacturing.	36	127	5.1	.....	.....	0.681	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333242 Semiconductor Machinery Manufacturing.	122	871	.....	.....	.....	0.861	.....	.....	.....
	1,250	1,500	.....	.....	.....	1,500	.....	1,500	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
333243 Sawmill, Woodworking, and Paper Machinery Manufacturing.	31	204	4.3	.....	.....	0.721	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333244 Printing Machinery and Equipment Manufacturing.	32	177	4.0	.....	.....	0.708	−55.6	.....	.....
	500	500	500	.....	.....	500	1,000	750	500
333249 Other Industrial Machinery Manufacturing.	30	115	3.9	.....	.....	0.704	−20.7	.....	.....
	500	500	500	.....	.....	500	750	500	500
333314 Optical Instrument and Lens Manufacturing.	42	204	5.5	26.9	.....	0.761	−11.4	.....	.....
	500	500	500	.....	.....	500	750	500	500
333316 Photographic and Photocopying Equipment Manufacturing.	43	300	7.9	29.9	.....	0.820	−5.8	.....	.....
	500	500	500	.....	.....	1,500	1,000	1,000	1,000
333318 Other Commercial and Service Industry Machinery Manufacturing.	46	274	.....	.....	.....	0.781	−22.2	.....	.....
	500	500	.....	.....	.....	750	750	750	1,000
333413 Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing.	61	244	5.9	.....	.....	0.714	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333414 Heating Equipment (except Warm Air Furnaces) Manufacturing.	49	202	6.4	21.1	.....	0.732	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333415 Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing.	139	1,352	18.7	39.3	.....	0.868	28.5	.....	.....
	1,250	1,500	750	.....	.....	1,500	750	1,250	750
333511 Industrial Mold Manufacturing	21	63	1.6	4.6	.....	0.586	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333514 Special Die and Tool, Die Set, Jig, and Fixture Manufacturing.	17	67	1.5	11.9	.....	0.647	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333515 Cutting Tool and Machine Tool Accessory Manufacturing.	20	143	1.9	19.2	.....	0.696	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333517 Machine Tool Manufacturing	52	230	7.2	.....	.....	0.695	24.9	.....	.....
	500	500	500	.....	.....	500	500	500	500
333519 Rolling Mill and Other Metalworking Machinery Manufacturing.	32	101	4.4	.....	.....	0.638	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333611 Turbine and Turbine Generator Set Units Manufacturing.	159	920	.....	68.4	3,126	0.823	−6.9	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	1,000	1,500	1,000
333612 Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing.	68	273	9.6	29.5	.....	0.725	−30.7	.....	.....
	750	500	500	.....	.....	500	1,000	750	500
333613 Mechanical Power Transmission Equipment Manufacturing.	79	330	12.0	26.9	.....	0.716	22.8	.....	.....
	750	500	750	.....	.....	500	500	750	500
333618 Other Engine Equipment Manufacturing.	169	1,217	.....	55.9	4,909	0.869	33.1	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	1,000	1,500	1,000
333911 Pump and Pumping Equipment Manufacturing.	76	382	14.2	30.5	.....	0.797	14.7	.....	.....
	750	750	750	.....	.....	1,000	500	750	500
333912 Air and Gas Compressor Manufacturing.	84	419	19.5	26.8	.....	0.808	.....	.....	.....
	750	750	750	.....	.....	1,250	.....	1,000	500
333913 Measuring and Dispensing Pump Manufacturing.	121	404	.....	72.7	653	0.745	.....	.....	.....
	1,250	750	.....	.....	500	500	.....	750	500
333921 Elevator and Moving Stairway Manufacturing.	55	440	.....	56.1	1,028	0.813	.....	.....	.....
	500	750	.....	.....	500	1,500	.....	1,000	500
333922 Conveyor and Conveying Equipment Manufacturing.	44	167	5.1	17.0	.....	0.672	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333923 Overhead Traveling Crane, Hoist, and Monorail System Manufacturing.	81	768	13.0	62.5	2,738	0.852	.....	.....	.....
	750	1,500	750	.....	1,500	1,500	.....	1,250	500
333924 Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing.	70	411	12.1	40.2	1,743	0.789	−9.3	.....	.....
	750	750	750	.....	1,000	1,000	750	750	750
333991 Power-Driven Handtool Manufacturing.	56	431	.....	45.2	674	0.771	.....	.....	.....
	500	750	.....	.....	500	500	.....	500	500
333992 Welding and Soldering Equipment Manufacturing.	55	1,042	11.4	55.7	1,897	0.855	.....	.....	.....
	500	1,500	750	.....	1,250	1,500	.....	1,250	500
333993 Packaging Machinery Manufacturing.	36	135	4.4	24.0	.....	0.696	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333994 Industrial Process Furnace and Oven Manufacturing.	36	179	3.9	21.8	.....	0.659	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
333995 Fluid Power Cylinder and Actuator Manufacturing.	74	341	.....	43.3	1,582	0.788	.....	.....	.....
	750	500	.....	.....	750	1,000	.....	750	500
333996 Fluid Power Pump and Motor Manufacturing.	101	715	.....	69.1	2,002	0.825	.....	.....	.....
	1,000	1,500	.....	.....	1,250	1,500	.....	1,250	500
333997 Scale and Balance Manufacturing	41	264	.....	51.9	408	0.735	.....	.....	.....
	500	500	.....	.....	500	500	.....	500	500
333999 All Other Miscellaneous General Purpose Machinery Manufacturing.	29	144	3.7	15.9	.....	0.723	−11.9	.....	.....
	500	500	500	.....	.....	500	750	500	500
334111 Electronic Computer Manufacturing.	88	1,322	46.4	86.9	6,047	0.946	21.7	.....	.....
	750	1,500	1,500	.....	1,500	1,500	1,000	1,250	1,000
334112 Computer Storage Device Manufacturing.	143	1,450	.....	75.6	2,068	0.883	−3.4	.....	.....
	1,500	1,500	.....	.....	1,250	1,500	1,000	1,250	1,000

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
334118 Computer Terminal and Other Computer Peripheral Equipment Manufacturing.	52	376	9.2	31.0	.....	0.818	−6.4	.....	.....
	500	750	500	.....	.....	1,500	1,000	1,000	1,000
334210 Telephone Apparatus Manufacturing.	95	462	29.9	60.5	2,244	0.853	8.3	.....	.....
	1,000	1,000	1,250	.....	1,500	1,500	1,000	1,250	1,000
334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.	113	1,170	30.2	45.2	7,609	0.889	−5.5	.....	.....
	1,000	1,500	1,250	.....	1,500	1,500	750	1,250	750
334290 Other Communications Equipment Manufacturing.	41	273	6.0	43.6	1,339	0.806	−26.2	.....	.....
	500	500	500	.....	500	1,250	1,000	750	750
334310 Audio and Video Equipment Manufacturing.	34	377	7.5	40.5	953	0.763	30.9	.....	.....
	500	750	500	.....	500	500	750	500	750
334412 Bare Printed Circuit Board Manufacturing.	57	385	4.5	36.7	.....	0.777	−34.6	.....	.....
	500	750	500	.....	.....	750	1,000	750	500
334413 Semiconductor and Related Device Manufacturing.	168	1,372	55.4	55.7	11,153	0.899	45.9	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	500	1,250	500
334416 Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing.	55	244	4.0	.....	.....	0.710	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
334417 Electronic Connector Manufacturing.	119	485	13.0	48.8	2,190	0.764	−13.3	.....	.....
	1,250	1,000	750	.....	1,500	500	750	1,000	500
334418 Printed Circuit Assembly (Electronic Assembly) Manufacturing.	84	436	.....	33.3	.....	0.801	−7.7	.....	.....
	750	750	.....	.....	.....	1,250	500	750	500
334419 Other Electronic Component Manufacturing.	46	211	4.4	.....	.....	0.744	−47.4	.....	.....
	500	500	500	.....	.....	500	1,250	750	750
334510 Electromedical and Electrotherapeutic Apparatus Manufacturing.	119	909	26.6	35.0	.....	0.863	−3.7	.....	.....
	1,250	1,500	1,000	.....	.....	1,500	500	1,250	500
334511 Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing.	300	5,370	61.6	47.0	18,216	0.919	−1.5	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	750	1,250	750
334512 Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use.	46	288	4.4	38.6	.....	0.779	.....	.....	.....
	500	500	500	.....	.....	750	.....	500	500
334513 Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables.	46	287	6.8	30.4	.....	0.807	7.9	.....	.....
	500	500	500	.....	.....	1,250	500	750	500
334514 Totalizing Fluid Meter and Counting Device Manufacturing.	67	324	14.2	44.1	1,006	0.801	.....	.....	.....
	750	500	750	.....	500	1,250	.....	750	500
334515 Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals.	53	312	9.0	37.9	.....	0.820	15.1	.....	.....
	500	500	500	.....	.....	1,500	500	750	500
334516 Analytical Laboratory Instrument Manufacturing.	66	396	13.8	32.3	.....	0.835	6.0	.....	.....
	750	750	750	.....	.....	1,500	500	1,000	500
334517 Irradiation Apparatus Manufacturing.	76	588	.....	58.2	1,398	0.845	5.9	.....	.....
	750	1,250	.....	.....	750	1,500	500	1,000	500
334519 Other Measuring and Controlling Device Manufacturing.	37	183	6.4	.....	.....	0.766	−1.5	.....	.....
	500	500	500	.....	.....	500	500	500	500
334613 Blank Magnetic and Optical Recording Media Manufacturing.	54	1,092	.....	84.7	1,121	0.889	.....	.....	.....
	500	1,500	.....	.....	500	1,500	.....	1,000	1,000
334614 Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing.	34	519	.....	.....	.....	0.819	.....	1,250	.....
	500	1,000	.....	.....	.....	1,500	.....	.....	750
335110 Electric Lamp Bulb and Part Manufacturing.	136	1,057	.....	75.4	1,497	0.848	.....	.....	.....
	1,250	1,500	.....	.....	750	1,500	.....	1,250	1,000
335121 Residential Electric Lighting Fixture Manufacturing.	30	320	3.5	46.1	847	0.814	.....	.....	.....
	500	500	500	.....	500	1,500	.....	750	500
335122 Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing.	56	373	5.9	32.0	.....	0.763	.....	.....	.....
	500	750	500	.....	.....	500	.....	500	500
335129 Other Lighting Equipment Manufacturing.	54	243	7.1	21.6	.....	0.749	.....	.....	.....
	500	500	500	.....	.....	500	.....	500	500
335210 Small Electrical Appliance Manufacturing.	104	579	.....	.....	.....	0.816	.....	.....	.....
	1,000	1,250	.....	.....	.....	1,500	.....	1,500	750
335221 Household Cooking Appliance Manufacturing.	145	1,611	.....	72.3	2,734	0.870	.....	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	.....	1,500	750
335222 Household Refrigerator and Home Freezer Manufacturing.	735	2,956	.....	91.6	3,010	0.764	.....	.....	.....
	1,500	1,500	.....	.....	1,500	500	.....	1,250	1,000
335224 Household Laundry Equipment Manufacturing.	746	3,165	.....	98.3	2,549	0.768	.....	.....	.....
	1,500	1,500	.....	.....	1,500	500	.....	1,250	1,000
335228 Other Major Household Appliance Manufacturing.	310	1,116	.....	63.6	1,614	0.744	.....	.....	.....
	1,500	1,500	.....	.....	750	500	.....	1,000	500

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
335311 Power, Distribution, and Specialty Transformer Manufacturing.	88	493	13.7	39.9	.....	0.771	22.0	.....	.....
	750	1,000	750	.....	.....	500	750	750	750
335312 Motor and Generator Manufacturing.	98	587	15.0	34.3	.....	0.837	−7.3	.....	.....
	1,000	1,250	750	.....	.....	1,500	1,000	1,250	1,000
335313 Switchgear and Switchboard Apparatus Manufacturing.	87	840	11.6	47.0	3,373	0.862	12.4	.....	.....
	750	1,500	750	.....	1,500	1,500	750	1,250	750
335314 Relay and Industrial Control Manufacturing.	41	267	5.5	31.1	.....	0.805	.....	.....	.....
	500	500	500	.....	.....	1,250	.....	750	750
335911 Storage Battery Manufacturing	240	1,819	.....	65.7	3,305	0.850	25.7	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	500	1,250	500
335912 Primary Battery Manufacturing	134	572	.....	88.0	837	0.773	.....	.....	.....
	1,250	1,250	.....	.....	500	750	.....	750	1,000
335921 Fiber Optic Cable Manufacturing	65	294	.....	64.3	569	0.710	.....	.....	.....
	750	500	.....	.....	500	500	.....	500	1,000
335929 Other Communication and Energy Wire Manufacturing.	109	398	.....	36.6	.....	0.749	−19.8	.....	.....
	1,000	750	.....	.....	.....	500	1,250	1,000	1,000
335931 Current-Carrying Wiring Device Manufacturing.	79	303	7.5	20.4	.....	0.742	.....	.....	.....
	750	500	500	.....	.....	500	.....	500	500
335932 Noncurrent-Carrying Wiring Device Manufacturing.	119	537	.....	37.6	.....	0.783	.....	.....	.....
	1,250	1,250	.....	.....	.....	750	.....	1,000	500
335991 Carbon and Graphite Product Manufacturing.	71	335	.....	41.2	660	0.782	.....	.....	.....
	750	500	.....	.....	500	750	.....	750	750
335999 All Other Miscellaneous Electrical Equipment and Component Manufacturing.	45	188	5.5	19.6	.....	0.763	−18.6	.....	.....
	500	500	500	.....	.....	500	750	500	500
336111 Automobile Manufacturing	376	6,539	286.4	67.6	9,705	0.945	2.2	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	1,000	1,500	1,000
336112 Light Truck and Utility Vehicle Manufacturing.	1,285	8,271	.....	84.3	16,270	0.857	4.7	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	1,000	1,500	1,000
336120 Heavy Duty Truck Manufacturing	360	2,029	.....	65.5	4,526	0.822	14.0	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	1,000	1,500	1,000
336211 Motor Vehicle Body Manufacturing.	66	411	7.5	23.6	.....	0.787	−14.9	.....	.....
	750	750	500	.....	.....	1,000	1,250	1,000	1,000
336212 Truck Trailer Manufacturing	78	688	7.8	42.4	2,364	0.806	−32.9	.....	.....
	750	1,500	500	.....	1,500	1,250	1,000	1,000	500
336213 Motor Home Manufacturing	247	1,226	.....	52.7	1,958	0.804	.....	.....	.....
	1,500	1,500	.....	.....	1,250	1,250	.....	1,250	1,000
336214 Travel Trailer and Camper Manufacturing.	65	650	4.5	40.4	3,444	0.810	−37.4	.....	.....
	750	1,500	500	.....	1,500	1,250	1,000	1,000	500
336310 Motor Vehicle Gasoline Engine and Engine Parts Manufacturing.	67	809	.....	.....	.....	0.914	45.5	.....	.....
	750	1,500	.....	.....	.....	1,500	500	1,000	750
336320 Motor Vehicle Electrical and Electronic Equipment Manufacturing.	97	707	13.0	.....	.....	0.852	11.3	.....	.....
	1,000	1,500	750	.....	.....	1,500	750	1,000	750
336330 Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing.	162	641	.....	32.7	.....	0.771	.....	.....	.....
	1,500	1,500	.....	.....	.....	500	.....	1,000	750
336340 Motor Vehicle Brake System Manufacturing.	167	671	.....	42.2	1,994	0.786	.....	.....	.....
	1,500	1,500	.....	.....	1,250	1,000	.....	1,250	750
336350 Motor Vehicle Transmission and Power Train Parts Manufacturing.	172	1,572	.....	36.7	.....	0.892	.....	.....	.....
	1,500	1,500	.....	.....	.....	1,500	.....	1,500	750
336360 Motor Vehicle Seating and Interior Trim Manufacturing.	170	1,367	26.7	56.9	5,459	0.860	.....	.....	.....
	1,500	1,500	1,000	.....	1,500	1,500	.....	1,500	500
336370 Motor Vehicle Metal Stamping	148	718	24.3	33.2	.....	0.756	.....	.....	.....
	1,500	1,500	1,000	.....	.....	500	.....	1,000	500
336390 Other Motor Vehicle Parts Manufacturing.	111	542	18.8	.....	.....	0.798	3.2	.....	.....
	1,000	1,250	750	.....	.....	1,250	750	1,000	750
336411 Aircraft Manufacturing	815	7,782	.....	81.3	33,731	0.901	0.1	.....	.....
	1,500	1,500	.....	.....	1,500	1,500	1,500	1,500	1,500
336412 Aircraft Engine and Engine Parts Manufacturing.	230	1,861	73.5	74.3	10,158	0.888	−7.3	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	1,000	1,500	1,000
336413 Other Aircraft Parts and Auxiliary Equipment Manufacturing.	146	1,768	26.1	47.3	9,325	0.884	−6.3	.....	.....
	1,500	1,500	1,000	.....	1,500	1,500	1,000	1,250	1,000
336414 Guided Missile and Space Vehicle Manufacturing.	3,525	7,103	.....	94.8	11,710	0.522	−0.8	.....	.....
	1,500	1,500	.....	.....	1,500	500	1,000	1,250	1,000
336415 Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing.	938	2,829	.....	97.1	3,871	0.682	0.5	.....	.....
	1,500	1,500	.....	.....	1,500	500	1,000	1,250	1,000
336419 Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing.	158	602	.....	66.5	1,250	0.718	−19.7	.....	.....
	1,500	1,250	.....	.....	500	500	1,250	1,000	1,000
336510 Railroad Rolling Stock Manufacturing.	164	935	53.0	49.4	2,757	0.814	.....	.....	.....
	1,500	1,500	1,500	.....	1,500	1,500	.....	1,500	1,000
336611 Ship Building and Repairing	162	4,868	16.5	60.5	14,610	0.899	−17.1	.....	.....
	1,500	1,500	750	.....	1,500	1,500	1,250	1,250	1,000

TABLE 3—SIZE STANDARDS SUPPORTED BY EACH FACTOR FOR EACH INDUSTRY (NUMBER OF EMPLOYEES)—Continued

[Upper Value = Calculated Factor, Lower Value = Size Standard Supported]

NAICS code NAICS industry title (1)	Simple average firm size (number of employees) (2)	Weighted average firm size (number of employees) (3)	Average assets size ($ million) (4)	Four-firm ratio % (5)	Four-firm average size (number of employees) (6)	Gini coefficient (7)	Federal contract factor (%) (8)	Calculated size standard (number of employees) (9)	Current size standard (number of employees) (10)
336612 Boat Building	51	1,271	6.2	35.0		0.857	22.3		
	500	1,500	500			1,500	500	1,000	500
336991 Motorcycle, Bicycle, and Parts Manufacturing.	30	1,380	6.9	72.0	1,705	0.879			
	500	1,500	500		1,000	1,500		1,000	500
336992 Military Armored Vehicle, Tank, and Tank Component Manufacturing.	264	1,538		81.8	2,674	0.857	−5.5		
	1,500	1,500			1,500	1,500	1,000	1,500	1,000
336999 All Other Transportation Equipment Manufacturing.	39	730	7.7	57.2	1,657	0.904	51.2		
	500	1,500	500		1,000	1,500	500	1,000	500
337110 Wood Kitchen Cabinet and Countertop Manufacturing.	15	899	0.8	30.4		0.752			
	500	1,500	500			500		750	500
337121 Upholstered Household Furniture Manufacturing.	52	1,121	2.7	34.0		0.856			
	500	1,500	500			1,500		1,000	500
337122 Nonupholstered Wood Household Furniture Manufacturing.	18	420	1.1	30.1		0.783	14.2		
	500	750	500			750	500	750	500
337124 Metal Household Furniture Manufacturing.	37	349		44.4	1,047	0.812			
	500	500			500	1,500		750	500
337125 Household Furniture (except Wood and Metal) Manufacturing.	21	439	2.6	67.0	455	0.867			
	500	750	500		500	1,500		750	500
337127 Institutional Furniture Manufacturing.	46	168	3.5	13.1		0.697			
	500	500	500			500		500	500
337211 Wood Office Furniture Manufacturing.	44	445	2.8	39.8		0.813			
	500	750	500			1,500		1,000	500
337212 Custom Architectural Woodwork and Millwork Manufacturing.	22	61	1.1	5.1		0.575			
	500	500	500			500		500	500
337214 Office Furniture (except Wood) Manufacturing.	111	1,302	14.1	64.7	3,581	0.898	8.5		
	1,000	1,500	750		1,500	1,500	500	1,000	500
337215 Showcase, Partition, Shelving, and Locker Manufacturing.	34	183	2.6	15.7		0.756	20.8		
	500	500	500			500	500	500	500
337910 Mattress Manufacturing	50	636	5.7	51.3	2,026	0.847			
	500	1,500	500		1,250	1,500		1,000	500
337920 Blind and Shade Manufacturing	43	666	2.2	38.5		0.815			
	500	1,500	500			1,500		1,000	500
339112 Surgical and Medical Instrument Manufacturing.	92	787	15.7	24.7		0.867	14.8		
	1,000	1,500	750			1,500	500	1,000	500
339113 Surgical Appliance and Supplies Manufacturing.	58	529	8.7	30.3		0.877	14.6		
	500	1,000	500			1,500	500	750	500
339114 Dental Equipment and Supplies Manufacturing.	22	341	3.3	34.6		0.853			
	500	500	500			1,500		750	500
339115 Ophthalmic Goods Manufacturing	46	594	6.0	42.5	1,595	0.882			
	500	1,250	500		750	1,500		1,000	500
339116 Dental Laboratories	8	160	0.2	18.0		0.553			
	500	500	500			500		500	500
339910 Jewelry and Silverware Manufacturing.	15	185	1.9			0.784			
	500	500	500			750		500	500
339920 Sporting and Athletic Goods Manufacturing.	27	305	3.8	27.0		0.838	27.0		
	500	500	500			1,500	500	750	500
339930 Doll, Toy, and Game Manufacturing.	17	266	2.1			0.778			
	500	500	500			750		500	500
339940 Office Supplies (except Paper) Manufacturing.	25	176				0.828	37.7		
	500	500				1,500	500	750	500
339950 Sign Manufacturing	14	105	0.9	6.7		0.693			
	500	500	500			500		500	500
339991 Gasket, Packing, and Sealing Device Manufacturing.	61	335	6.3	26.9		0.774			
	500	500	500			750		500	500
339992 Musical Instrument Manufacturing	23	424	1.9	32.2		0.819			
	500	750	500			1,500		1,000	500
339993 Fastener, Button, Needle, and Pin Manufacturing.	31	526		49.1	533	0.783			
	500	1,000			500	750		750	500
339994 Broom, Brush, and Mop Manufacturing.	53	223	5.4	29.3		0.765			
	500	500	500			500		500	500
339995 Burial Casket Manufacturing	36	873		73.5	673	0.896			
	500	1,500			500	1,500		1,000	500
339999 All Other Miscellaneous Manufacturing.	13	135	1.4	26.2		0.764	−20.8		
	500	500	500			500	750	500	500

Special Considerations: NAICS Code 324110 (Petroleum Refiners)

Footnote 4 of SBA's table of size standards (13 CFR 121.201) states that to qualify as a small business concern for purposes of Government procurement, the petroleum refiner must be a concern that has no more than 1,500 employees and no more than 125,000 barrels per calendar day total Operable Atmospheric Crude Oil Distillation capacity. In addition, the total product to be delivered under the small business contract must be at least 90 percent

refined by the successful bidder from either crude oil or bona fide feedstocks.

To determine if the current Petroleum Refiners size standard is appropriate, SBA analyzed current data on both total and aviation fuel capacity, as well as the number of employees of all refiners operating in the U.S. SBA also examined industry trends, and the Federal government's petroleum procurement needs. Based on this analysis, SBA proposes to increase the refining capacity component of the Petroleum Refiners (NAICS 324110) size standard from 125,000 barrels per calendar day (BPCD) total Operable Atmospheric Crude Oil Distillation capacity to 200,000 BPCD, and maintain the employee component at the current 1,500-employee level. Under the proposed size standard, for proposes of Federal procurement, a petroleum refiner can qualify as small under the 1,500-employee size standard or under the 200,000 BPCD capacity size standard. To qualify under the capacity size standard, the firm, together with its affiliates, must be primarily engaged in refining crude petroleum into refined petroleum products. The proposed increase to the capacity size standard would expand the pool of small refiners that produce aviation fuel.

Since the current regulation (limitations on subcontracting) already requires that a concern must perform at least 50 percent of the cost of contracts for the supplies or products (not including the costs of materials) (see 13 CFR 125.6), SBA is also proposing to remove the requirement that total product to be delivered under the small business contract must be at least 90 percent refined by the successful bidder from either crude oil or bona fide feedstocks. SBA has found this 90 percent requirement to be overly restrictive for small refiners to compete for government contracts. The removal of this requirement will make the limitations on subcontracting consistent across all contracts for manufactured products or supplies.

Given these changes, SBA also proposes to revise Footnote 4 of the SBA's table of size standards to read as follows:

''To qualify as small for purposes of Government procurement, the petroleum refiner, including its affiliates, must be a concern that has no more than 1,500 employees OR no more than 200,000 barrels per calendar day total Operable Atmospheric Crude Oil Distillation capacity. Capacity includes all domestic and foreign affiliates, owned or leased facilities, and facilities under a processing agreement or an arrangement such as an exchange agreement or a throughput. To qualify under the capacity size standard, the firm, together with its affiliates, must be primarily engaged in refining crude petroleum into refined petroleum products. A firm's ''primary industry'' is determined in accordance with 13 CFR 121.107.''

NAICS 326211, Tire Manufacturing (Except Retreading)

Footnote 5 to SBA size standards table currently includes Census Bureau's Product Classifications codes based on Standard Industry Classification (SIC) system: Namely 30111 (Passenger car pneumatic tires) and 30112 (Truck/bus tires, including off highway, pneumatic tires). To make them consistent with industry size standards that are based on NAICS, in this proposed rule, SBA amends Footnote 5 by replacing them with the Census Bureau's corresponding NAICS Product Classification codes 3262111 and 3262113, respectively. The amended Footnote 5 will read as follows:

5. *NAICS code 326211*—For Government procurement, a firm is small for bidding on a contract for pneumatic tires within Census NAICS Product Classification codes 3262111 and 3262113, provided that:

(a) The value of tires within Census NAICS Product Classification codes 3262113 which it manufactured in the United States during the previous calendar year is more than 50 percent of the value of its total worldwide manufacture,

(b) The value of pneumatic tires within Census NAICS Product Classification codes 3262113 comprising its total worldwide manufacture during the preceding calendar year was less than 5 percent of the value of all such tires manufactured in the United States during that period, and

(c) The value of the principal product which it manufactured or otherwise produced, or sold worldwide during the preceding calendar year is less than 10 percent of the total value of such products manufactured or otherwise produced or sold in the United States during that period.

Proposed Changes to Size Standards

As can be seen from Table 3, Size Standards Supported by Each Factor for Each Industry (No. of employees), the results might support increases in size standards for 209 industries, decreases for 19 industries and no changes for 136 industries.

However, SBA believes that lowering small business size standards is not in the best interest of small businesses in the current economic environment. The U.S. economy was in recession from December 2007 to June 2009, the longest and deepest of any recessions since before World War II. The economy lost more than eight million non-farm jobs during 2008–2009. In response, Congress passed and the President signed into law the American Recovery and Reinvestment Act of 2009 (Recovery Act) to promote economic recovery and to preserve and create jobs. Although the recession officially ended in June 2009, the unemployment rate is still high at 6.2 percent in July 2014 (*www.bls.gov*) and is forecast to remain around this level at least through the end of 2014 (*http://www.federalreserve.gov/monetarypolicy/mpr_20140211_part3.htm*).

In 2010, Congress passed and the President signed the Jobs Act to promote small business job creation. The Jobs Act puts more capital into the hands of entrepreneurs and small business owners; strengthens small businesses' ability to compete for contracts; includes recommendations from the President's Task Force on Federal Contracting Opportunities for Small Business; creates a better playing field for small businesses; promotes small business exporting, building on the President's National Export Initiative; expands training and counseling; and provides $12 billion in tax relief to help small businesses invest in their firms and create jobs. A proposal to reduce size standards will have an immediate impact on jobs, and it would be contrary to the expressed will of the President and the Congress.

Lowering size standards would decrease the number of firms that participate in Federal financial and procurement assistance programs for small businesses. It would also affect small businesses that are now exempt or receive some form of relief from other Federal regulations that use SBA's size standards. That impact could take the form of increased fees, paperwork, or other compliance requirements for small businesses. Furthermore, size standards based solely on analytical results without any other considerations can cut off currently eligible small firms from those programs and benefits. In the 19 industries for which analytical results might have supported lowering their size standards, about 60 businesses would lose their small business eligibility if their size standards were lowered. That would run counter to what SBA and the Federal government are doing to help small businesses and create jobs. Reducing size eligibility for Federal procurement opportunities, especially under current economic

conditions, would not preserve or create more jobs; rather, it would have the opposite effect. Therefore, in this proposed rule, SBA does not intend to reduce size standards for any industries. Accordingly, for industries where analyses might seem to support lowering size standards, SBA proposes to retain the current size standards.

Furthermore, as stated previously, the Small Business Act requires the SBA's Administrator to ''. . . consider other factors deemed to be relevant . . .'' to establishing small business size standards. The current economic conditions and the impact on job creation are quite relevant factors when establishing small business size standards. SBA nevertheless invites comments and suggestions on whether it should lower size standards as suggested by analyses of industry and program data or retain the current standards for those industries in view of current economic conditions.

As discussed above, lowering small business size standards is inconsistent with what the Federal government is doing to stimulate the economy and would discourage job growth for which Congress established the Recovery Act and Jobs Act. In addition, it would be inconsistent with the Small Business Act requiring the Administrator to establish size standards based on industry analysis and other relevant factors such as current economic conditions. Thus, of the 364 manufacturing industries reviewed in this rule, SBA proposes to increase size standards for 209 industries and retain the current size standards for 155 industries, including 19 for which the results might support lowering their size standards. The proposed size standards are in Table 4, Summary of Proposed Size Standards Revisions, below.

TABLE 4—SUMMARY OF PROPOSED SIZE STANDARDS REVISIONS

NAICS code	NAICS U.S. industry title	Current size standard (number of employees)	Proposed size standard (number of employees)
311111	Dog and Cat Food Manufacturing	500	1,000
311211	Flour Milling	500	1,000
311221	Wet Corn Milling	750	1,250
311314	Cane Sugar Manufacturing	750	1,000
311340	Nonchocolate Confectionery Manufacturing	500	1,000
311351	Chocolate and Confectionery Manufacturing from Cacao Beans	500	1,250
311352	Confectionery Manufacturing from Purchased Chocolate	500	1,000
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	500	1,000
311412	Frozen Specialty Food Manufacturing	500	1,250
311421	Fruit and Vegetable Canning	500	1,000
311422	Specialty Canning	1,000	1,250
311423	Dried and Dehydrated Food Manufacturing	500	750
311511	Fluid Milk Manufacturing	500	1,000
311512	Creamery Butter Manufacturing	500	750
311513	Cheese Manufacturing	500	1,250
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	500	750
311520	Ice Cream and Frozen Dessert Manufacturing	500	1,000
311611	Animal (except Poultry) Slaughtering	500	1,000
311612	Meat Processed from Carcasses	500	1,000
311613	Rendering and Meat Byproduct Processing	500	750
311615	Poultry Processing	500	1,250
311710	Seafood Product Preparation and Packaging	500	750
311812	Commercial Bakeries	500	1,000
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	500	750
311821	Cookie and Cracker Manufacturing	750	1,250
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	500	750
311830	Tortilla Manufacturing	500	1,250
311911	Roasted Nuts and Peanut Butter Manufacturing	500	750
311919	Other Snack Food Manufacturing	500	1,250
311920	Coffee and Tea Manufacturing	500	750
311930	Flavoring Syrup and Concentrate Manufacturing	500	1,000
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	500	750
312111	Soft Drink Manufacturing	500	1,250
312112	Bottled Water Manufacturing	500	1,000
312113	Ice Manufacturing	500	750
312120	Breweries	500	1,250
312130	Wineries	500	1,000
312140	Distilleries	750	1,000
312230	Tobacco Manufacturing	1,000	1,500
313110	Fiber, Yarn, and Thread Mills	500	1,250
313230	Nonwoven Fabric Mills	500	750
314110	Carpet and Rug Mills	500	1,500
314120	Curtain and Linen Mills	500	750
315110	Hosiery and Sock Mills	500	750
315190	Other Apparel Knitting Mills	500	750
315210	Cut and Sew Apparel Contractors	500	750
315220	Men's and Boys' Cut and Sew Apparel Manufacturing	500	750
315240	Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing	500	750
315280	Other Cut and Sew Apparel Manufacturing	500	750
316992	Women's Handbag and Purse Manufacturing	500	750
321212	Softwood Veneer and Plywood Manufacturing	500	1,250

TABLE 4—SUMMARY OF PROPOSED SIZE STANDARDS REVISIONS—Continued

NAICS code	NAICS U.S. industry title	Current size standard (number of employees)	Proposed size standard (number of employees)
321213	Engineered Wood Member (except Truss) Manufacturing	500	750
321219	Reconstituted Wood Product Manufacturing	500	750
321911	Wood Window and Door Manufacturing	500	1,000
321991	Manufactured Home (Mobile Home) Manufacturing	500	1,250
322121	Paper (except Newsprint) Mills	750	1,250
322130	Paperboard Mills	750	1,250
322211	Corrugated and Solid Fiber Box Manufacturing	500	1,250
322219	Other Paperboard Container Manufacturing	750	1,000
322220	Paper Bag and Coated and Treated Paper Manufacturing	500	750
322230	Stationery Product Manufacturing	500	750
322291	Sanitary Paper Product Manufacturing	500	1,500
323117	Books Printing	500	1,250
324191	Petroleum Lubricating Oil and Grease Manufacturing	500	750
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing	750	1,250
325199	All Other Basic Organic Chemical Manufacturing	1,000	1,250
325211	Plastics Material and Resin Manufacturing	750	1,250
325312	Phosphatic Fertilizer Manufacturing	500	750
325320	Pesticide and Other Agricultural Chemical Manufacturing	500	1,000
325411	Medicinal and Botanical Manufacturing	750	1,000
325412	Pharmaceutical Preparation Manufacturing	750	1,250
325413	In-Vitro Diagnostic Substance Manufacturing	500	1,250
325414	Biological Product (except Diagnostic) Manufacturing	500	1,250
325510	Paint and Coating Manufacturing	500	1,000
325611	Soap and Other Detergent Manufacturing	750	1,000
325612	Polish and Other Sanitation Good Manufacturing	500	750
325613	Surface Active Agent Manufacturing	500	750
325620	Toilet Preparation Manufacturing	500	1,250
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing	500	1,500
326111	Plastics Bag and Pouch Manufacturing	500	750
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing	500	1,000
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing	500	750
326122	Plastics Pipe and Pipe Fitting Manufacturing	500	750
326140	Polystyrene Foam Product Manufacturing	500	1,000
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	500	750
326160	Plastics Bottle Manufacturing	500	1,250
326191	Plastics Plumbing Fixture Manufacturing	500	750
326211	Tire Manufacturing (except Retreading)	1,000	1,500
326220	Rubber and Plastics Hoses and Belting Manufacturing	500	750
326291	Rubber Product Manufacturing for Mechanical Use	500	750
327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing	750	1,000
327212	Other Pressed and Blown Glass and Glassware Manufacturing	750	1,250
327213	Glass Container Manufacturing	750	1,250
327215	Glass Product Manufacturing Made of Purchased Glass	500	1,000
327310	Cement Manufacturing	750	1,000
327332	Concrete Pipe Manufacturing	500	750
327410	Lime Manufacturing	500	750
327420	Gypsum Product Manufacturing	1,000	1,500
327910	Abrasive Product Manufacturing	500	750
327993	Mineral Wool Manufacturing	750	1,500
331110	Iron and Steel Mills and Ferroalloy Manufacturing	1,000	1,500
331315	Aluminum Sheet, Plate, and Foil Manufacturing	750	1,250
331511	Iron Foundries	500	1,000
331512	Steel Investment Foundries	500	1,000
332111	Iron and Steel Forging	500	750
332112	Nonferrous Forging	500	750
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing	500	750
332216	Saw Blade and Handtool Manufacturing	500	750
332311	Prefabricated Metal Building and Component Manufacturing	500	750
332313	Plate Work Manufacturing	500	750
332321	Metal Window and Door Manufacturing	500	750
332410	Power Boiler and Heat Exchanger Manufacturing	500	750
332420	Metal Tank (Heavy Gauge) Manufacturing	500	750
332431	Metal Can Manufacturing	1,000	1,500
332510	Hardware Manufacturing	500	750
332911	Industrial Valve Manufacturing	500	750
332912	Fluid Power Valve and Hose Fitting Manufacturing	500	1,000
332913	Plumbing Fixture Fitting and Trim Manufacturing	500	1,000
332919	Other Metal Valve and Pipe Fitting Manufacturing	500	750
332991	Ball and Roller Bearing Manufacturing	750	1,250

TABLE 4—SUMMARY OF PROPOSED SIZE STANDARDS REVISIONS—Continued

NAICS code	NAICS U.S. industry title	Current size standard (number of employees)	Proposed size standard (number of employees)
332992	Small Arms Ammunition Manufacturing	1,000	1,250
333111	Farm Machinery and Equipment Manufacturing	500	1,250
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing	500	1,500
333120	Construction Machinery Manufacturing	750	1,250
333132	Oil and Gas Field Machinery and Equipment Manufacturing	500	1,250
333242	Semiconductor Machinery Manufacturing	500	1,500
333244	Printing Machinery and Equipment Manufacturing	500	750
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing.	750	1,250
333611	Turbine and Turbine Generator Set Units Manufacturing	1,000	1,500
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing	500	750
333613	Mechanical Power Transmission Equipment Manufacturing	500	750
333618	Other Engine Equipment Manufacturing	1,000	1,500
333911	Pump and Pumping Equipment Manufacturing	500	750
333912	Air and Gas Compressor Manufacturing	500	1,000
333913	Measuring and Dispensing Pump Manufacturing	500	750
333921	Elevator and Moving Stairway Manufacturing	500	1,000
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing	500	1,250
333992	Welding and Soldering Equipment Manufacturing	500	1,250
333995	Fluid Power Cylinder and Actuator Manufacturing	500	750
333996	Fluid Power Pump and Motor Manufacturing	500	1,250
334111	Electronic Computer Manufacturing	1,000	1,250
334112	Computer Storage Device Manufacturing	1,000	1,250
334210	Telephone Apparatus Manufacturing	1,000	1,250
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	750	1,250
334412	Bare Printed Circuit Board Manufacturing	500	750
334413	Semiconductor and Related Device Manufacturing	500	1,250
334417	Electronic Connector Manufacturing	500	1,000
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	500	750
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	500	1,250
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing.	750	1,250
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables.	500	750
334514	Totalizing Fluid Meter and Counting Device Manufacturing	500	750
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	500	750
334516	Analytical Laboratory Instrument Manufacturing	500	1,000
334517	Irradiation Apparatus Manufacturing	500	1,000
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	750	1,250
335110	Electric Lamp Bulb and Part Manufacturing	1,000	1,250
335121	Residential Electric Lighting Fixture Manufacturing	500	750
335210	Small Electrical Appliance Manufacturing	750	1,500
335221	Household Cooking Appliance Manufacturing	750	1,500
335222	Household Refrigerator and Home Freezer Manufacturing	1,000	1,250
335224	Household Laundry Equipment Manufacturing	1,000	1,250
335228	Other Major Household Appliance Manufacturing	500	1,000
335312	Motor and Generator Manufacturing	1,000	1,250
335313	Switchgear and Switchboard Apparatus Manufacturing	750	1,250
335911	Storage Battery Manufacturing	500	1,250
335932	Noncurrent-Carrying Wiring Device Manufacturing	500	1,000
336111	Automobile Manufacturing	1,000	1,500
336112	Light Truck and Utility Vehicle Manufacturing	1,000	1,500
336120	Heavy Duty Truck Manufacturing	1,000	1,500
336212	Truck Trailer Manufacturing	500	1,000
336213	Motor Home Manufacturing	1,000	1,250
336214	Travel Trailer and Camper Manufacturing	500	1,000
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	750	1,000
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing	750	1,000
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	750	1,000
336340	Motor Vehicle Brake System Manufacturing	750	1,250
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing	750	1,500
336360	Motor Vehicle Seating and Interior Trim Manufacturing	500	1,500
336370	Motor Vehicle Metal Stamping	500	1,000
336390	Other Motor Vehicle Parts Manufacturing	750	1,000
336412	Aircraft Engine and Engine Parts Manufacturing	1,000	1,500
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	1,000	1,250
336414	Guided Missile and Space Vehicle Manufacturing	1,000	1,250
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	1,000	1,250
336510	Railroad Rolling Stock Manufacturing	1,000	1,500

TABLE 4—SUMMARY OF PROPOSED SIZE STANDARDS REVISIONS—Continued

NAICS code	NAICS U.S. industry title	Current size standard (number of employees)	Proposed size standard (number of employees)
336611	Ship Building and Repairing	1,000	1,250
336612	Boat Building	500	1,000
336991	Motorcycle, Bicycle, and Parts Manufacturing	500	1,000
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing	1,000	1,500
336999	All Other Transportation Equipment Manufacturing	500	1,000
337110	Wood Kitchen Cabinet and Countertop Manufacturing	500	750
337121	Upholstered Household Furniture Manufacturing	500	1,000
337122	Nonupholstered Wood Household Furniture Manufacturing	500	750
337124	Metal Household Furniture Manufacturing	500	750
337125	Household Furniture (except Wood and Metal) Manufacturing	500	750
337211	Wood Office Furniture Manufacturing	500	1,000
337214	Office Furniture (except Wood) Manufacturing	500	1,000
337910	Mattress Manufacturing	500	1,000
337920	Blind and Shade Manufacturing	500	1,000
339112	Surgical and Medical Instrument Manufacturing	500	1,000
339113	Surgical Appliance and Supplies Manufacturing	500	750
339114	Dental Equipment and Supplies Manufacturing	500	750
339115	Ophthalmic Goods Manufacturing	500	1,000
339920	Sporting and Athletic Goods Manufacturing	500	750
339940	Office Supplies (except Paper) Manufacturing	500	750
339992	Musical Instrument Manufacturing	500	1,000
339993	Fastener, Button, Needle, and Pin Manufacturing	500	750
339995	Burial Casket Manufacturing	500	1,000

Maintaining current size standards when the analytical results suggested lowering them is consistent with SBA's recent final rules on NAICS Sector 44–45, Retail Trade (75 FR 61597 (October 6, 2010)); NAICS Sector 72, Accommodation and Food Services (75 FR 61604 (October 6, 2010)); NAICS Sector 81, Other Services (75 FR 61591 (October 6, 2010)); NAICS Sector 54, Professional, Scientific and Technical Services (77 FR 7490 (February 10, 2012)); NAICS Sector 48 49, Transportation and Warehousing (77 FR 10943 (February 24, 2012)); NAICS Sector 51, Information (77 FR 72702 (December 6, 2012)); NAICS Sector 53, Real Estate and Rental and Leasing (77 FR 88747 (September 24, 2012)); NAICS Sector 56, Administrative and Support, Waste Management and Remediation Services (77 FR 72691 (December 6, 2012)); NAICS Sector 61, Educational Services (77 FR 58739 (September 24, 2012)); and NAICS Sector 62, Health Care and Social Assistance (77 FR 58755 (September 24, 2012)); NAICS Sector 11, Agriculture, Forestry, Fishing and Hunting (78 FR 37398 (June 20, 2013)); NAICS Subsector 213, Support Activities for Mining (78 FR 37404 (June 20, 2013)); NAICS Sector 52, Finance and Insurance and Sector 55, Management of Companies and Enterprises (78 FR 37409 (June 20, 2013)); NAICS Sector 71, Arts, Entertainment and Recreation (78 FR 37417 (June 20, 2013)); and NAICS Sector 23, Construction (78 FR 77334 (December 23, 2013)). In each of those final rules, SBA retained the existing size standards for those that it could have reduced.

Evaluation of Dominance in Field of Operation

SBA has determined that for the industries for which it has proposed to increase size standards in this proposed rule, no individual firm at or below the proposed size standard will be large enough to dominate its field of operation. At the proposed size standards, if adopted, the small business share of total industry receipts among those industries for which SBA has proposed to increase their size standards is, on average, 1.7 percent, varying from a minimum of 0.02 percent to a maximum of 18.9 percent. These market shares effectively preclude a firm at or below the proposed size standards from exerting control on any of the industries.

Request for Comments

SBA invites public comments on this proposed rule, especially on the following issues:

1. SBA proposes five levels of employee based size standards for industries in Manufacturing and industries in other Sectors except for Wholesale Trade and Retail Trade that have employee based size standards: 500 employees, 750 employees, 1,000 employees, 1,250 employees, and 1,500 employees. SBA invites comments on whether these proposed size levels are appropriate and suggestions on alternative levels, if they would be more appropriate.

2. To be consistent with its policy of not lowering any size standards in all recent proposed and final rules on receipts based size standards in view of current economic conditions, SBA is retaining the current 500-employee minimum and 1,500-employee maximum size standards for all industries in the Manufacturing Sector and other industries not in the Wholesale and Retail Trade Sectors that have employee based size standards. In its ''Size Standards Methodology,'' available at *www.sba.gov/size,* SBA had proposed setting the minimum size standard for these industries at 250 employees and the maximum size standard at 1,000 employees. This would have resulted in lowering the existing employee based size standards for some industries. SBA invites comments on whether it should maintain the 500-employee minimum and the 1,500-employee maximum size standards or it lower them to 250 employees and 1,000 employees, respectively, as the Agency proposed in its ''Size Standards Methodology.'' SBA requests suggestions on alternative minimum and maximum levels, if they would be more appropriate.

3. SBA seeks feedback on whether it should adjust employee based size standards for labor productivity growth. SBA periodically increases receipts

based size standards for inflation. Should SBA take labor productivity growth and technological change into consideration when it reviews employee based standards? If so, what data are available to assist SBA in evaluating such factors? What if such an evaluation leads to lower size standards for some industries? How should SBA apply the results to its size standards decision?

4. SBA seeks feedback on whether its proposal to increase size standards for 209 industries and retain current size standards for 155 industries is appropriate, given the economic characteristics of each industry reviewed in this proposed rule. SBA also seeks feedback and suggestions on alternative size standards, if they would be more appropriate.

5. SBA has proposed to retain the current size standards for 19 industries for which the analytical results would support lowering them. SBA seeks comments on whether SBA should lower them solely based on its analysis or retain them at their current levels in view of current economic conditions.

6. SBA invites comments on its proposal to increase the capacity component of the Petroleum Refiners (NAICS 324110) size standard from 125,000 barrels per calendar day (BPCD) total Operable Atmospheric Crude Oil Distillation capacity to 200,000 BPCD and retain the employee component at the current 1,500-employee level. SBA also welcomes comments on its proposal to allow business concerns to qualify either under the 1,500-employee size standard or under the 200,000 BPCD capacity size standard, if they, together with affiliates, are primarily engaged in petroleum refining. Finally, SBA also seeks feedback on its proposal to eliminate the requirement that ''[t]he total product to be delivered under the contract must be at least 90 percent refined by the successful bidder from either crude oil or bona fide feedstocks.''

7. SBA's proposed size standards are based on five primary factors—average firm size, average assets size (as a proxy of startup costs and entry barriers), four-firm concentration ratio, distribution of firms by size and, the level and small business share of Federal contracting dollars of the evaluated industries and sub-industries. SBA welcomes comments on these factors and/or suggestions on other factors that it should consider when evaluating or revising employee based size standards. SBA also seeks information on relevant data sources, other than what it uses, if available.

8. SBA gives equal weight to each of the five primary factors in all industries. SBA seeks feedback on whether it should continue giving equal weight to each factor or whether it should give more weight to one or more factors for certain industries. Recommendations to weigh some factors more than others should include suggested weights for each factor along with supporting information.

9. For analytical simplicity and efficiency, in this proposed rule, SBA has refined its size standard methodology to obtain a single value as a proposed size standard instead of a range of values, as in its past size regulations. SBA welcomes any comments on this procedure and suggestions on alternative methods.

Public comments on the above issues are very valuable to SBA for validating its size standard methodology and its proposed size standards revisions in this proposed rule. This will help SBA to ensure that size standards reflect industry structure and Federal market conditions. Commenters addressing SBA's proposed size standard revisions for a specific industry or a group of industries should include relevant data and/or other information supporting their comments. If comments relate to using size standards for Federal procurement programs, SBA suggests that commenters provide information on the size of contracts in their industries, the size of businesses that can undertake the contracts, startup costs, equipment and other asset requirements, the amount of subcontracting, other direct and indirect costs associated with the contracts, the use of mandatory sources of supply for products and services, and the degree to which contractors can mark up those costs.

Compliance With Executive Orders 12866, 13563, 12988 and 13132, the Paperwork Reduction Act (44 U.S.C. Ch. 35) and the Regulatory Flexibility Act (5 U.S.C. 601–612)

Executive Order 12866

The Office of Management and Budget (OMB) has determined that this proposed rule is a significant regulatory action for purposes of Executive Order 12866. Accordingly, in the next section SBA provides a Regulatory Impact Analysis of this proposed rule. However, this rule is not a ''major rule'' under the Congressional Review Act, 5 U.S.C. 800.

Regulatory Impact Analysis

1. Is there a need for the regulatory action?

SBA believes that the proposed size standards revisions in this proposed rule will better reflect the economic characteristics of small businesses and the Federal government marketplace in the affected industries and. SBA's mission is to aid and assist small businesses through a variety of financial, procurement, business development, and advocacy programs. To determine the intended beneficiaries of these programs, SBA establishes distinct definitions of which businesses are deemed small businesses. The Small Business Act (15 U.S.C. 632(a)) delegates to SBA's Administrator the responsibility for establishing small business definitions. The Act also requires that small business definitions vary to reflect industry differences. The Jobs Act also requires SBA to review all size standards and make necessary adjustments to reflect market conditions. The supplementary information section of this proposed rule explains SBA's methodology for analyzing a size standard for a particular industry.

2. What are the potential benefits and costs of this regulatory action?

The most significant benefit to businesses obtaining small business status because of this proposed rule is gaining or retaining eligibility for Federal small business assistance programs. These include SBA's financial assistance programs, economic injury disaster loans, and Federal procurement programs intended for small businesses. Federal procurement programs provide targeted opportunities for small businesses under SBA's business development programs, such as 8(a), Small Disadvantaged Businesses (SDB), small businesses located in Historically Underutilized Business Zones (HUBZone), women-owned small businesses (WOSB), economically disadvantaged women-owned small businesses (EDWOSB), and service-disabled veteran-owned small businesses (SDVOSB). Federal agencies may also use SBA's size standards for a variety of other regulatory and program purposes. These programs assist small businesses to become more knowledgeable, stable, and competitive. SBA estimates that in 209 industries for which it has proposed to increase size standards about 1,250 firms, not small under the existing size standards, will become small under the proposed size standards and therefore become eligible for these programs. That is about 0.4 percent of all firms classified as small under the current size standards in all industries reviewed in this proposed rule. If adopted as proposed, this will increase the small business share of total receipts in those industries from 26 percent to 29 percent.

Three groups will benefit from the proposed size standards revisions in this rule, if they are adopted as proposed: (1) Some businesses that are above the current size standards may gain small business status under the higher size standards, thereby enabling them to participate in Federal small business assistance programs; (2) growing small businesses that are close to exceeding the current size standards will be able to retain their small business status under the higher size standards, thereby enabling them to continue their participation in the programs; and (3) Federal agencies will have a larger pool of small businesses from which to draw for their small business procurement programs.

SBA estimates that firms gaining small business status under the proposed size standards could receive Federal contracts totaling $170 million to $175 million annually under SBA's small business, 8(a), SDB, HUBZone, WOSB, EDWOSB, and SDVOSB Programs, and other unrestricted procurements. The added competition for many of these procurements can also result in lower prices to the Government for procurements reserved for small businesses, but SBA cannot quantify this benefit.

Under SBA's 7(a) and 504 Loan Programs, based on the fiscal years 2010–2012 data, SBA estimates up to about 25 SBA loans totaling about $12.0 million could be made to these newly defined small businesses under the proposed size standards. Increasing the size standards will likely result in more small business guaranteed loans to businesses in these industries, but it is be impractical to try to estimate exactly the number and total amount of loans. There are two reasons for this: (1) Under the Jobs Act, SBA can now guarantee substantially larger loans than in the past; and (2) as described above, the Jobs Act established a higher alternative size standard ($15 million in tangible net worth and $5 million in net income after income taxes) for business concerns that do not meet the size standards for their industry. Therefore, SBA finds it difficult to quantify the actual impact of these proposed size standards on its 7(a) and 504 Loan Programs.

Newly defined small businesses will also benefit from SBA's Economic Injury Disaster Loan (EIDL) Program. Since this program is contingent on the occurrence and severity of a disaster in the future, SBA cannot make a meaningful estimate of this impact.

In addition, newly defined small businesses will also benefit through reduced fees, less paperwork, and fewer compliance requirements that are available to small businesses through Federal government.

To the extent that those 1,250 newly defined additional small firms could become active in Federal procurement programs, the proposed changes to size standards, if adopted, may entail some additional administrative costs to the government as a result of more businesses being eligible for Federal small business programs. For example, there will be more firms seeking SBA's guaranteed loans, more firms eligible for enrollment in the System of Award Management (SAM) database, and more firms seeking certification as 8(a) or HUBZone firms or qualifying for small business, WOSB, EDWOSB, SDVOSB, and SDB status. Among those newly defined small businesses seeking SBA's assistance, there could be some additional costs associated with compliance and verification of small business status and protests of small business status. However, SBA believes that these added administrative costs will be minimal because mechanisms are already in place to handle these requirements.

Additionally, Federal government contracts may have higher costs. With a greater number of businesses defined as small, Federal agencies may choose to set aside more contracts for competition among small businesses only rather than using full and open competition. The movement from unrestricted to small business set-aside contracting might result in competition among fewer total bidders, although there will be more small businesses eligible to submit offers. However, the additional costs associated with fewer bidders are expected to be minor since, by law, procurements may be set aside for small businesses or reserved for the 8(a), HUBZone, WOSB, EDWOSB, or SDVOSB Programs only if awards are expected to be made at fair and reasonable prices. In addition, there may be higher costs when more full and open contracts are awarded to HUBZone businesses that receive price evaluation preferences.

The proposed size standards revisions, if adopted, may have some distributional effects among large and small businesses. Although SBA cannot estimate with certainty the actual outcome of the gains and losses among small and large businesses, it can identify several probable impacts. There may be a transfer of some Federal contracts to small businesses from large businesses. Large businesses may have fewer Federal contract opportunities as Federal agencies decide to set aside more contracts for small businesses. In addition, some Federal contracts may be awarded to HUBZone concerns instead of large businesses since these firms may be eligible for a price evaluation preference for contracts when they compete on a full and open basis.

Similarly, some businesses defined small under the current size standards may obtain fewer Federal contracts due to the increased competition from more businesses defined as small under the proposed size standards. This transfer may be offset by a greater number of Federal procurements set aside for all small businesses. The number of newly defined and expanding small businesses that are willing and able to sell to the Federal Government will limit the potential transfer of contracts from large and currently defined small businesses. SBA cannot estimate the potential distributional impacts of these transfers with any degree of precision.

The proposed revisions to the existing size standards for 210 industries in Sector 31–33 are consistent with SBA's statutory mandate to assist small business. This regulatory action promotes the Administration's objectives. One of SBA's goals in support of the Administration's objectives is to help individual small businesses succeed through fair and equitable access to capital and credit, Government contracts, and management and technical assistance. Reviewing and modifying size standards, when appropriate, ensures that intended beneficiaries have access to small business programs designed to assist them.

Executive Order 13563

Descriptions of the need for this regulatory action and benefits and costs associated with this action including possible distributional impacts that relate to Executive Order 13563 are included above in the Regulatory Impact Analysis under Executive Order 12866, above.

In an effort to engage interested parties in this action, SBA has presented its size standards methodology (discussed above under Supplementary Information) to various industry associations and trade groups. SBA also met with a number of industry groups and individual businesses to get their feedback on its methodology and other size standards issues. In addition, SBA presented its size standards methodology to businesses in 13 cities in the U.S. and sought their input as part of Jobs Act tours. The presentation also included information on the latest status of the comprehensive size standards review and on how interested

parties can provide SBA with input and feedback on size standards review.

Additionally, SBA sent letters to the Directors of the Offices of Small and Disadvantaged Business Utilization (OSDBU) at several Federal agencies with considerable procurement responsibilities requesting their feedback on how the agencies use SBA's size standards and whether current size standards meet their programmatic needs (both procurement and non-procurement). SBA gave appropriate consideration to all input, suggestions, recommendations, and relevant information obtained from industry groups, individual businesses, and Federal agencies in preparing this proposed rule.

The review of size standards in industries covered in this proposed rule is consistent with Executive Order 13563, Section 6, calling for retrospective analyses of existing rules. The last comprehensive review of size standards occurred during the late 1970s and early 1980s. Since then, except for periodic adjustments for monetary based size standards, most reviews of size standards were limited to a few specific industries in response to requests from the public and Federal agencies. The majority of employee based size standards, including those in NAICS Sector 31–33, have not been reviewed since they were first established. SBA recognizes that changes in industry structure and the Federal marketplace over time have rendered existing size standards for some industries no longer supportable by current data. Accordingly, in 2007, SBA began a comprehensive review of its size standards to ensure that existing size standards have supportable bases and to revise them when necessary. In addition, the Jobs Act requires SBA to conduct a detailed review of all size standards and to make appropriate adjustments to reflect market conditions. Specifically, the Jobs Act requires SBA to conduct a detailed review of at least one-third of all size standards during every 18-month period from the date of its enactment and do a complete review of all size standards not less frequently than once every 5 years thereafter.

Executive Order 12988

This action meets applicable standards set forth in Sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden. The action does not have retroactive or preemptive effect.

Executive Order 13132

For purposes of Executive Order 13132, SBA has determined that this proposed rule will not have substantial, direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, SBA has determined that this proposed rule has no federalism implications warranting preparation of a federalism assessment.

Paperwork Reduction Act

For the purpose of the Paperwork Reduction Act, 44 U.S.C. Ch. 35, SBA has determined that this proposed rule will not impose any new reporting or record keeping requirements.

Initial Regulatory Flexibility Analysis

Under the Regulatory Flexibility Act (RFA), this proposed rule, if adopted, may have a significant impact on a substantial number of small businesses in the industries and sub-industries covered by this rule. As described above, this rule may affect small businesses seeking Federal contracts, loans under SBA's 7(a), 504 and Economic Injury Disaster Loan Programs, and assistance under other Federal small business programs.

Immediately below, SBA sets forth an initial regulatory flexibility analysis (IRFA) of this proposed rule addressing the following questions: (1) What are the need for and objective of the rule? (2) What are SBA's description and estimate of the number of small businesses to which the rule will apply? (3) What are the projected reporting, record keeping, and other compliance requirements of the rule? (4) What are the relevant Federal rules that may duplicate, overlap, or conflict with the rule? and (5) What alternatives will allow the Agency to accomplish its regulatory objectives while minimizing the impact on small businesses?

1. What are the need for and objective of the rule?

Changes in industry structure, technological changes, productivity growth, mergers and acquisitions, and updated industry definitions have changed the structure of many industries reviewed in this proposed rule. Such changes can be sufficient to support revisions to current size standards for some industries. Based on the analysis of the latest data available, SBA believes that the revised standards in this proposed rule more appropriately reflect the size of businesses that need Federal assistance. The Jobs Act also requires SBA to review all size standards and make necessary adjustments to reflect market conditions.

2. What are SBA's description and estimate of the number of small businesses to which the rule will apply?

If the proposed rule is adopted in its present form, SBA estimates that about 1,250 additional firms will become small because of increased size standards 209 industries in NAICS Sector 31–33. That represents 0.4 percent of total firms that are small under current size standards in all industries in that Sector. This will result in an increase in the small business share of total industry receipts in Sector 31–33 from 26 percent under the current size standards to 29 percent under the proposed size standards. The proposed size standards, if adopted, will enable more small businesses to retain their small business status for a longer period. Many firms may have lost their eligibility and find it difficult to compete at current size standards with companies that are significantly larger than they are. SBA believes the competitive impact will be positive for existing small businesses and for those that exceed the size standards but are on the very low end of those that are not small. They might otherwise be called or referred to as mid-sized businesses, although SBA only defines what is small; other entities are other than small.

3. What are the projected reporting, recordkeeping and other compliance requirements of the rule?

The proposed size standard changes impose no additional reporting or recordkeeping requirements on small businesses. However, qualifying for Federal procurement and a number of other programs requires that businesses register in the SAM database and certify in SAM that they are small at least once annually. Therefore, businesses opting to participate in those programs must comply with SAM requirements. However, there are no costs associated with SAM registration or certification. Changing size standards alters the access to SBA's programs that assist small businesses, but does not impose a regulatory burden because they neither regulate nor control business behavior.

4. What are the relevant Federal rules, which may duplicate, overlap or conflict with the rule?

Under § 3(a)(2)(C) of the Small Business Act, 15 U.S.C. 632(a)(2)(c), Federal agencies must use SBA's size standards to define a small business,

unless specifically authorized by statute to do otherwise. In 1995, SBA published in the **Federal Register** a list of statutory and regulatory size standards that identified the application of SBA's size standards as well as other size standards used by Federal agencies (60 FR 57988 (November 24, 1995)). SBA is not aware of any Federal rule that would duplicate or conflict with establishing size standards.

However, the Small Business Act and SBA's regulations allow Federal agencies to develop different size standards if they believe that SBA's size standards are not appropriate for their programs, with the approval of SBA's Administrator (13 CFR 121.903). The Regulatory Flexibility Act authorizes an Agency to establish an alternative small business definition, after consultation with the Office of Advocacy of the U.S. Small Business Administration (5 U.S.C. 601(3)).

5. What alternatives will allow the Agency to accomplish its regulatory objectives while minimizing the impact on small entities?

By law, SBA is required to develop numerical size standards for establishing eligibility for Federal small business assistance programs. Other than varying size standards by industry and changing the size measures, no practical alternative exists to the systems of numerical size standards.

List of Subjects in 13 CFR Part 121

Administrative practice and procedure, Government procurement, Government property, Grant programs—business, Individuals with disabilities, Loan programs—business, Reporting and recordkeeping requirements, Small businesses.

For the reasons set forth in the preamble, SBA proposes to amend part 13 CFR part 121 as follows:

PART 121—SMALL BUSINESS SIZE REGULATIONS

■ 1. The authority citation for part 121 continues to read as follows:

Authority: 15 U.S.C. 632, 634(b)(6), 662, and 694a(9).

■ 2. In § 121.201, amend the table ''Small Business Size Standards by NAICS Industry'' as follows:

■ a. Revise the entries for ''311111'', ''311211'', ''311221'', ''311314'', ''311340'', ''311351'', ''311352'', ''311411'', ''311412'', 311421'', ''311422'', ''311423'', ''311511'', ''311512'', ''311513'', ''311514'', ''311520'', ''311611'', ''311612'', ''311613'', ''311615'', ''311710'', ''311812'', ''311813'', ''311821'', ''311824'', ''311830'', ''311911'', ''311919'', ''311920'', ''311930'', ''311941'', ''312111'', ''312112'', ''312113'', ''312120'', ''312130'', ''312140'', ''312230'', ''313110'', ''313230'', ''314110'', ''314120'', ''315110'', ''315190'', ''315210'', ''315220'', ''315240'', ''315280'', ''316992'', ''321212'', ''321213'', ''321219'', ''321911'', ''321991'', ''322121'', ''322130'', ''322211'', ''322219'', ''322220'', ''322230'', ''322291'', ''323117'', ''324110'', ''324191'', ''325194'', ''325199'', ''325211'', ''325312'', ''325320'', ''325411'', ''325412'', ''325413'', ''325414'', ''325510'', ''325611'', ''325612'', ''325613'', ''325620'', ''325992'', ''326111'', ''326112'', ''326113'', ''326122'', ''326140'', ''326150'', ''326160'', ''326191'', ''326211'', ''326220'', ''326291'', ''327110'', ''327212'', ''327213'', ''327215'', ''327310'', ''327332'', ''327410'', ''327420'', ''327910'', ''327993'', ''331110'', ''331315'', ''331511'', ''331512'', ''332111'', ''332112'', ''332215'', ''332216'', ''332311'', ''332313'', ''332321'', ''332410'', ''332420'', ''332431'', ''332510'', ''332911'', ''332912'', ''332913'', ''332919'', ''332991'', ''332992'', ''333111'', ''333112'', ''333120'', ''333132'', ''333242'', ''333244'', ''333415'', ''333611'', ''333612'', ''333613'', ''333618'', ''333911'', ''333912'', ''333913'', ''333921'', ''333923'', ''333992'', ''333995'', ''333996'', ''334111'', ''334112'', ''334210'', ''334220'', ''334412'', ''334413'', ''334417'', ''334418'', ''334510'', ''334511'', ''334513'', ''334514'', ''334515'', ''334516'', ''334517'', ''334614'', ''335110'', ''335121'', ''335210'', ''335221'', ''335222'', ''335224'', ''335228'', ''335312'', ''335313'', ''335911'', ''335932'', ''336111'', ''336112'', ''336120'', ''336212'', ''336213'', ''336214'', ''336310'', ''336320'', ''336330'', ''336340'', ''336350'', ''336360'', ''336370'', ''336390'', ''336412'', ''336413'', ''336414'', ''336415'', ''336510'', ''336611'', ''336612'', ''336991'', ''336992'', ''336999'', ''337110'', ''337121'', ''337122'', ''337124'', ''337125'', ''337211'', ''337214'', ''337910'', ''337920'', ''339112'', ''339113'', ''339114'', ''339115'', ''339920'', ''339940'', ''339992'', ''339993'', and ''339995''.

■ b. Revise footnotes 3, 4, 5, and 7.

The revisions read as follows:

§ 121.201 What size standards has SBA identified by North American Industry Classification System codes?

* * * * *

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY

NAICS codes	NAICS U.S. industry title	Size standards in millions of dollars	Size standards in number of employees
*	* * * * *	*	*
311111	Dog and Cat Food Manufacturing		1,000
*	* * * * *	*	*
311211	Flour Milling		1,000
*	* * * * *	*	*
311221	Wet Corn Milling		1,250
*	* * * * *	*	*
311314	Cane Sugar Manufacturing		1,000
311340	Nonchocolate Confectionery Manufacturing		1,000
311351	Chocolate and Confectionery Manufacturing from Cacao Beans		1,250
311352	Confectionery Manufacturing from Purchased Chocolate		1,000
311411	Frozen Fruit, Juice, and Vegetable Manufacturing		1,000
311412	Frozen Specialty Food Manufacturing		1,250
311421	Fruit and Vegetable Canning [3]		[3]1,000

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY—Continued

NAICS codes	NAICS U.S. industry title	Size standards in millions of dollars	Size standards in number of employees
311422	Specialty Canning		1,250
311423	Dried and Dehydrated Food Manufacturing		750
311511	Fluid Milk Manufacturing		1,000
311512	Creamery Butter Manufacturing		750
311513	Cheese Manufacturing		1,250
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing		750
311520	Ice Cream and Frozen Dessert Manufacturing		1,000
311611	Animal (except Poultry) Slaughtering		1,000
311612	Meat Processed from Carcasses		1,000
311613	Rendering and Meat Byproduct Processing		750
311615	Poultry Processing		1,250
311710	Seafood Product Preparation and Packaging		750
*	* * * * *	*	*
311812	Commercial Bakeries		1,000
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing		750
311821	Cookie and Cracker Manufacturing		1,250
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour		750
311830	Tortilla Manufacturing		1,250
311911	Roasted Nuts and Peanut Butter Manufacturing		750
311919	Other Snack Food Manufacturing		1,250
311920	Coffee and Tea Manufacturing		750
311930	Flavoring Syrup and Concentrate Manufacturing		1,000
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing		750
*	* * * * *	*	*
312111	Soft Drink Manufacturing		1,250
312112	Bottled Water Manufacturing		1,000
312113	Ice Manufacturing		750
312120	Breweries		1,250
312130	Wineries		1,000
312140	Distilleries		1,000
312230	Tobacco Manufacturing		1,500
313110	Fiber, Yarn, and Thread Mills		1,250
*	* * * * *	*	*
313230	Nonwoven Fabric Mills		750
*	* * * * *	*	*
314110	Carpet and Rug Mills		1,500
314120	Curtain and Linen Mills		750
*	* * * * *	*	*
315110	Hosiery and Sock Mills		750
315190	Other Apparel Knitting Mills		750
315210	Cut and Sew Apparel Contractors		750
315220	Men's and Boys' Cut and Sew Apparel Manufacturing		750
315240	Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing		750
315280	Other Cut and Sew Apparel Manufacturing		750
*	* * * * *	*	*
316992	Women's Handbag and Purse Manufacturing		750
*	* * * * *	*	*
321212	Softwood Veneer and Plywood Manufacturing		1,250
321213	Engineered Wood Member (except Truss) Manufacturing		750
*	* * * * *	*	*
321219	Reconstituted Wood Product Manufacturing		750
321911	Wood Window and Door Manufacturing		1,000
*	* * * * *	*	*
321991	Manufactured Home (Mobile Home) Manufacturing		1,250
*	* * * * *	*	*
322121	Paper (except Newsprint) Mills		1,250
*	* * * * *	*	*
322130	Paperboard Mills		1,250
322211	Corrugated and Solid Fiber Box Manufacturing		1,250

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY—Continued

NAICS codes	NAICS U.S. industry title	Size standards in millions of dollars	Size standards in number of employees
*	* * * * *	*	*
322219	Other Paperboard Container Manufacturing		1,000
322220	Paper Bag and Coated and Treated Paper Manufacturing		750
322230	Stationery Product Manufacturing		750
322291	Sanitary Paper Product Manufacturing		1,500
*	* * * * *	*	*
323117	Books Printing		1,250
*	* * * * *	*	*
324110	Petroleum Refineries [4]		[4]1,500
*	* * * * *	*	*
324191	Petroleum Lubricating Oil and Grease Manufacturing		750
*	* * * * *	*	*
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing		1,250
325199	All Other Basic Organic Chemical Manufacturing		1,250
325211	Plastics Material and Resin Manufacturing		1,250
*	* * * * *	*	*
325312	Phosphatic Fertilizer Manufacturing		750
*	* * * * *	*	*
325320	Pesticide and Other Agricultural Chemical Manufacturing		1,000
325411	Medicinal and Botanical Manufacturing		1,000
325412	Pharmaceutical Preparation Manufacturing		1,250
325413	In-Vitro Diagnostic Substance Manufacturing		1,250
325414	Biological Product (except Diagnostic) Manufacturing		1,250
325510	Paint and Coating Manufacturing		1,000
*	* * * * *	*	*
325611	Soap and Other Detergent Manufacturing		1,000
325612	Polish and Other Sanitation Good Manufacturing		750
325613	Surface Active Agent Manufacturing		750
325620	Toilet Preparation Manufacturing		1,250
*	* * * * *	*	*
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing		1,500
*	* * * * *	*	*
326111	Plastics Bag and Pouch Manufacturing		750
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing		1,000
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing		750
*	* * * * *	*	*
326122	Plastics Pipe and Pipe Fitting Manufacturing		750
*	* * * * *	*	*
326140	Polystyrene Foam Product Manufacturing		1,000
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing		750
326160	Plastics Bottle Manufacturing		1,250
326191	Plastics Plumbing Fixture Manufacturing		750
*	* * * * *	*	*
326211	Tire Manufacturing (except Retreading) [5]		[5]1,500
*	* * * * *	*	*
326220	Rubber and Plastics Hoses and Belting Manufacturing		750
326291	Rubber Product Manufacturing for Mechanical Use		750
*	* * * * *	*	*
327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing		1,000
*	* * * * *	*	*
327212	Other Pressed and Blown Glass and Glassware Manufacturing		1,250
327213	Glass Container Manufacturing		1,250
327215	Glass Product Manufacturing Made of Purchased Glass		1,000
327310	Cement Manufacturing		1,000

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY—Continued

NAICS codes	NAICS U.S. industry title	Size standards in millions of dollars	Size standards in number of employees
*	* * * * *	*	*
327332	Concrete Pipe Manufacturing		750
*	* * * * *	*	*
327410	Lime Manufacturing		750
327420	Gypsum Product Manufacturing		1,500
327910	Abrasive Product Manufacturing		750
*	* * * * *	*	*
327993	Mineral Wool Manufacturing		1,500
*	* * * * *	*	*
331110	Iron and Steel Mills and Ferroalloy Manufacturing		1,500
*	* * * * *	*	*
331315	Aluminum Sheet, Plate, and Foil Manufacturing		1,250
*	* * * * *	*	*
331511	Iron Foundries		1,000
331512	Steel Investment Foundries		1,000
*	* * * * *	*	*
332111	Iron and Steel Forging		750
332112	Nonferrous Forging		750
*	* * * * *	*	*
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing		750
332216	Saw Blade and Handtool Manufacturing		750
332311	Prefabricated Metal Building and Component Manufacturing		750
*	* * * * *	*	*
332313	Plate Work Manufacturing		750
332321	Metal Window and Door Manufacturing		750
*	* * * * *	*	*
332410	Power Boiler and Heat Exchanger Manufacturing		750
332420	Metal Tank (Heavy Gauge) Manufacturing		750
332431	Metal Can Manufacturing		1,500
*	* * * * *	*	*
332510	Hardware Manufacturing		750
*	* * * * *	*	*
332911	Industrial Valve Manufacturing		750
332912	Fluid Power Valve and Hose Fitting Manufacturing		1,000
332913	Plumbing Fixture Fitting and Trim Manufacturing		1,000
332919	Other Metal Valve and Pipe Fitting Manufacturing		750
332991	Ball and Roller Bearing Manufacturing		1,250
332992	Small Arms Ammunition Manufacturing		1,250
*	* * * * *	*	*
333111	Farm Machinery and Equipment Manufacturing		1,250
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing		1,500
333120	Construction Machinery Manufacturing		1,250
*	* * * * *	*	*
333132	Oil and Gas Field Machinery and Equipment Manufacturing		1,250
*	* * * * *	*	*
333242	Semiconductor Machinery Manufacturing		1,500
*	* * * * *	*	*
333244	Printing Machinery and Equipment Manufacturing		750
*	* * * * *	*	*
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing.		1,250
*	* * * * *	*	*
333611	Turbine and Turbine Generator Set Units Manufacturing		1,500

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY—Continued

NAICS codes	NAICS U.S. industry title	Size standards in millions of dollars	Size standards in number of employees
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing		750
333613	Mechanical Power Transmission Equipment Manufacturing		750
333618	Other Engine Equipment Manufacturing		1,500
333911	Pump and Pumping Equipment Manufacturing		750
333912	Air and Gas Compressor Manufacturing		1,000
333913	Measuring and Dispensing Pump Manufacturing		750
333921	Elevator and Moving Stairway Manufacturing		1,000
*	* * * * *	*	*
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing		1,250
*	* * * * *	*	*
333992	Welding and Soldering Equipment Manufacturing		1,250
*	* * * * *	*	*
333995	Fluid Power Cylinder and Actuator Manufacturing		750
333996	Fluid Power Pump and Motor Manufacturing		1,250
*	* * * * *	*	*
334111	Electronic Computer Manufacturing		1,250
334112	Computer Storage Device Manufacturing		1,250
*	* * * * *	*	*
334210	Telephone Apparatus Manufacturing		1,250
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing		1,250
*	* * * * *	*	*
334412	Bare Printed Circuit Board Manufacturing		750
334413	Semiconductor and Related Device Manufacturing		1,250
*	* * * * *	*	*
334417	Electronic Connector Manufacturing		1,000
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing		750
*	* * * * *	*	*
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing		1,250
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing.		1,250
*	* * * * *	*	*
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables.		750
334514	Totalizing Fluid Meter and Counting Device Manufacturing		750
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals		750
334516	Analytical Laboratory Instrument Manufacturing		1,000
334517	Irradiation Apparatus Manufacturing		1,000
*	* * * * *	*	*
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing		1,250
335110	Electric Lamp Bulb and Part Manufacturing		1,250
335121	Residential Electric Lighting Fixture Manufacturing		750
*	* * * * *	*	*
335210	Small Electrical Appliance Manufacturing		1,500
335221	Household Cooking Appliance Manufacturing		1,500
335222	Household Refrigerator and Home Freezer Manufacturing		1,250
335224	Household Laundry Equipment Manufacturing		1,250
335228	Other Major Household Appliance Manufacturing		1,000
*	* * * * *	*	*
335312	Motor and Generator Manufacturing		1,250
335313	Switchgear and Switchboard Apparatus Manufacturing		1,250
*	* * * * *	*	*
335911	Storage Battery Manufacturing		1,250
*	* * * * *	*	*
335932	Noncurrent-Carrying Wiring Device Manufacturing		1,000
*	* * * * *	*	*
336111	Automobile Manufacturing		1,500

SMALL BUSINESS SIZE STANDARDS BY NAICS INDUSTRY—Continued

NAICS codes	NAICS U.S. industry title	Size standards in millions of dollars	Size standards in number of employees
336112	Light Truck and Utility Vehicle Manufacturing		1,500
336120	Heavy Duty Truck Manufacturing		1,500
*	* * * * *	*	*
336212	Truck Trailer Manufacturing		1,000
336213	Motor Home Manufacturing		1,250
336214	Travel Trailer and Camper Manufacturing		1,000
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing		1,000
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing		1,000
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing		1,000
336340	Motor Vehicle Brake System Manufacturing		1,250
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing		1,500
336360	Motor Vehicle Seating and Interior Trim Manufacturing		1,500
336370	Motor Vehicle Metal Stamping		1,000
336390	Other Motor Vehicle Parts Manufacturing		1,000
*	* * * * *	*	*
336412	Aircraft Engine and Engine Parts Manufacturing		1,500
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing [7]		[7]1,250
336414	Guided Missile and Space Vehicle Manufacturing		1,250
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing		1,250
*	* * * * *	*	*
336510	Railroad Rolling Stock Manufacturing		1,500
336611	Ship Building and Repairing		1,250
336612	Boat Building		1,000
336991	Motorcycle, Bicycle, and Parts Manufacturing		1,000
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing		1,500
336999	All Other Transportation Equipment Manufacturing		1,000
337110	Wood Kitchen Cabinet and Countertop Manufacturing		750
337121	Upholstered Household Furniture Manufacturing		1,000
337122	Nonupholstered Wood Household Furniture Manufacturing		750
337124	Metal Household Furniture Manufacturing		750
337125	Household Furniture (except Wood and Metal) Manufacturing		750
*	* * * * *	*	*
337211	Wood Office Furniture Manufacturing		1,000
*	* * * * *	*	*
337214	Office Furniture (except Wood) Manufacturing		1,000
*	* * * * *	*	*
337910	Mattress Manufacturing		1,000
337920	Blind and Shade Manufacturing		1,000
*	* * * * *	*	*
339112	Surgical and Medical Instrument Manufacturing		1,000
339113	Surgical Appliance and Supplies Manufacturing		750
339114	Dental Equipment and Supplies Manufacturing		750
339115	Ophthalmic Goods Manufacturing		1,000
*	* * * * *	*	*
339920	Sporting and Athletic Goods Manufacturing		750
*	* * * * *	*	*
339940	Office Supplies (except Paper) Manufacturing		750
*	* * * * *	*	*
339992	Musical Instrument Manufacturing		1,000
339993	Fastener, Button, Needle, and Pin Manufacturing		750
*	* * * * *	*	*
339995	Burial Casket Manufacturing		1,000
*	* * * * *	*	*

* * * * *

Footnotes

* * * * *

3. *NAICS code 311421*—For purposes of Government procurement for food canning and preserving, the standard of 500 employees excludes agricultural labor as defined in 3306(k) of the Internal Revenue Code, 26 U.S.C. 3306(k).

4. *NAICS code 324110*—To qualify as small for purposes of Government procurement, the petroleum refiner, including its affiliates, must be a concern that has no more than 1,500 employees OR no more than 200,000 barrels per calendar day total Operable Atmospheric Crude Oil Distillation capacity. Capacity includes all domestic and foreign affiliates, owned or leased facilities, and facilities under a processing agreement or an arrangement such as an exchange agreement or a throughput. To qualify under the capacity size standard, the firm, together with its affiliates, must be primarily engaged in refining crude petroleum into refined petroleum products. A firm's ''primary industry'' is determined in accordance with 13 CFR 121.107.

5. *NAICS code 326211*—For Government procurement, a firm is small for bidding on a contract for pneumatic tires within Census NAICS Product Classification codes 3262111 and 3262113, provided that:

(a) The value of tires within Census NAICS Product Classification codes 3262113 which it manufactured in the United States during the previous calendar year is more than 50 percent of the value of its total worldwide manufacture,

(b) The value of pneumatic tires within Census NAICS Product Classification codes 3262113 comprising its total worldwide manufacture during the preceding calendar year was less than 5 percent of the value of all such tires manufactured in the United States during that period, and

(c) The value of the principal product which it manufactured or otherwise produced, or sold worldwide during the preceding calendar year is less than 10 percent of the total value of such products manufactured or otherwise produced or sold in the United States during that period.

* * * * *

7. *NAICS code 336413*—Contracts for the rebuilding or overhaul of aircraft ground support equipment on a contract basis are classified under NAICS code 336413.

* * * * *

Dated: August 25, 2014.

Maria Contreras-Sweet,

Administrator.

[FR Doc. 2014–20837 Filed 9–9–14; 8:45 am]

BILLING CODE 8025–01–P

FEDERAL REGISTER

Vol. 79 Wednesday,

No. 175 September 10, 2014

Part V

The President

Proclamation 9163—National Grandparents Day, 2014

Presidential Determination No. 2014–14 of September 5, 2014—Continuation of the Exercise of Certain Authorities Under the Trading With the Enemy Act

Federal Register
Vol. 79, No. 175
Wednesday, September 10, 2014

Presidential Documents

Title 3—

The President

Proclamation 9163 of September 5, 2014

National Grandparents Day, 2014

By the President of the United States of America

A Proclamation

Each year, we pause to salute the grandmothers and grandfathers who strengthen our families and shape our Nation. Through decades of hard work, they have broken down barriers and blazed pathways for the generations that followed, and they continue to provide inspiration and support to their children and grandchildren. On National Grandparents Day, we honor the anchors of our families and recognize the immeasurable ways they enrich our lives.

With grit and determination, our grandparents have built better lives for their loved ones and a better future for our country. From battlefields to factory floors, their relentless pursuit of progress has created new opportunities and made America more equal and more just. They have ushered in revolutionary advances in science and technology, putting us at the forefront of innovation. And they have shared in some of life's most cherished memories—from small moments to personal milestones—and been a source of comfort in difficult times.

Across our country, grandparents continue to contribute to their families and communities in countless ways. They volunteer in their neighborhoods, and for more than 5 million grandchildren, they serve as the head of household, providing unconditional love and support. Their tenacious spirit, commitment to family, and sense of service remind us that after a lifetime of hard work, they deserve to retire with security and dignity.

Today, we pay tribute to our grandparents and all the older Americans who have reached across generations and played an important role in our lives. With profound gratitude, we celebrate all they have accomplished and given to our Nation.

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim September 7, 2014, as National Grandparents Day. I call upon all Americans to take the time to honor their own grandparents and those in their community.

IN WITNESS WHEREOF, I have hereunto set my hand this fifth day of September, in the year of our Lord two thousand fourteen, and of the Independence of the United States of America the two hundred and thirty-ninth.

[FR Doc. 2014–21755
Filed 9–9–14; 11:15 am]
Billing code 3295–F4

Presidential Documents

Presidential Determination No. 2014–14 of September 5, 2014

Continuation of the Exercise of Certain Authorities Under the Trading With the Enemy Act

Memorandum for the Secretary of State [and] the Secretary of the Treasury

Under section 101(b) of Public Law 95–223 (91 Stat. 1625; 50 U.S.C. App. 5(b) note), and a previous determination on September 12, 2013 (78 *FR* 57225, September 17, 2013), the exercise of certain authorities under the Trading With the Enemy Act is scheduled to terminate on September 14, 2014.

I hereby determine that the continuation for 1 year of the exercise of those authorities with respect to Cuba is in the national interest of the United States.

Therefore, consistent with the authority vested in me by section 101(b) of Public Law 95–223, I continue for 1 year, until September 14, 2015, the exercise of those authorities with respect to Cuba, as implemented by the Cuban Assets Control Regulations, 31 C.F.R. Part 515.

The Secretary of the Treasury is authorized and directed to publish this determination in the *Federal Register*.

THE WHITE HOUSE,
Washington, September 5, 2014

[FR Doc. 2014–21760
Filed 9–9–14; 11:15 am]
Billing code 4811–33

Reader Aids

Federal Register

Vol. 79, No. 175

Wednesday, September 10, 2014

CUSTOMER SERVICE AND INFORMATION

Federal Register/Code of Federal Regulations	
General Information, indexes and other finding aids	**202–741–6000**
Laws	**741–6000**
Presidential Documents	
Executive orders and proclamations	**741–6000**
The United States Government Manual	**741–6000**
Other Services	
Electronic and on-line services (voice)	**741–6020**
Privacy Act Compilation	**741–6064**
Public Laws Update Service (numbers, dates, etc.)	**741–6043**
TTY for the deaf-and-hard-of-hearing	**741–6086**

ELECTRONIC RESEARCH

World Wide Web

Full text of the daily Federal Register, CFR and other publications is located at: **www.fdsys.gov.**

Federal Register information and research tools, including Public Inspection List, indexes, and Code of Federal Regulations are located at: **www.ofr.gov.**

E-mail

FEDREGTOC-L (Federal Register Table of Contents LISTSERV) is an open e-mail service that provides subscribers with a digital form of the Federal Register Table of Contents. The digital form of the Federal Register Table of Contents includes HTML and PDF links to the full text of each document.

To join or leave, go to **http://listserv.access.gpo.gov** and select *Online mailing list archives, FEDREGTOC-L, Join or leave the list (or change settings);* then follow the instructions.

PENS (Public Law Electronic Notification Service) is an e-mail service that notifies subscribers of recently enacted laws.

To subscribe, go to **http://listserv.gsa.gov/archives/publaws-l.html** and select *Join or leave the list (or change settings);* then follow the instructions.

FEDREGTOC-L and **PENS** are mailing lists only. We cannot respond to specific inquiries.

Reference questions. Send questions and comments about the Federal Register system to: **fedreg.info@nara.gov**

The Federal Register staff cannot interpret specific documents or regulations.

CFR Checklist. Effective January 1, 2009, the CFR Checklist no longer appears in the Federal Register. This information can be found online at **http://bookstore.gpo.gov/.**

FEDERAL REGISTER PAGES AND DATE, SEPTEMBER

51887–52164 2
52165–52542 3
52543–52952 4
52953–53126 5
53127–53280 8
53281–53600 9
53601–54184 10

CFR PARTS AFFECTED DURING SEPTEMBER

At the end of each month the Office of the Federal Register publishes separately a List of CFR Sections Affected (LSA), which lists parts and sections affected by documents published since the revision date of each title.

3 CFR

Proclamations:
9154 52937
9155 52939
9156 52941
9157 52943
9158 52945
9159 52947
9160 52949
9161 52951
9162 53599
9163 54181

Administrative Orders:
Notices:
Notice of September 4, 2014 53279
Presidential Determinations:
No. 2014–14 of September 5, 2014 54183

5 CFR

550 53601
1653 53603

7 CFR

319 52543
1220 53605

Proposed Rules:
27 53633
28 53633
29 53633
51 53633
52 53633
54 53633
56 53633
58 53633
62 53633
70 53633
75 53633
91 53633
318 53346
319 53346
761 52239
762 52239
763 52239
764 52239
765 52239
766 52239
767 52239
770 52239
772 52239
773 52239
774 52239
799 52239
1436 52239
1940 52239

9 CFR

77 53606

10 CFR

72 53281

Proposed Rules:
72 53352

12 CFR

652 53127

Proposed Rules:
607 52814
614 52814
615 52814
620 52814
628 52814

13 CFR

Proposed Rules:
121 .....53646, 54146

14 CFR

25 .....52165, 52169, 53128, 53129
39 .....52172, 52174, 52177, 52181, 52184, 52187, 52190, 52545, 52953, 53285, 53288
71 .....51887, 52192, 52194, 52957
97 .....51888, 51891

Proposed Rules:
39 .....52260, 52263, 52267, 52270, 52585, 52588
71 .....51919, 51920, 53667, 53669
121 53008
145 53008

15 CFR

738 52958
740 52958
742 52958
744 52958
772 52958
774 52958
801 53291
922 52960

Proposed Rules:
Ch.VII 53355

16 CFR

305 52549

17 CFR

Proposed Rules:
270 51922
274 51922

21 CFR

310 .....53133, 53134
314 .....53133, 53134
329 .....53133, 53134
520 53134
522 53134
558 53134

600 ..... 53133, 53134
864 52195
866 53608
1300 53520
1301 53520
1304 53520
1305 53520
1307 53520
1317 53520
Proposed Rules:
172 51922
182 51922
610 53670
680 53670

22 CFR
22 52197

23 CFR
627 52972
Proposed Rules:
450 ..... 51922, 53673
771 53673

24 CFR
500 51893
501 51893
502 51893
503 51893
504 51893
505 51893
506 51893
507 51893
508 51893
509 51893
510 51893
511 51893
572 51893
585 51893
590 51893
597 51893
598 51893
3285 53609
3286 53609

27 CFR
73 52198
Proposed Rules:
9 52273

28 CFR
Proposed Rules:
36 53146

32 CFR
706 52556
Proposed Rules:
286 52500

33 CFR
100 ..... 51895, 52556, 53291
117 53294
147 ..... 51898, 52559
165 ..... 52199, 52561, 53295, 53297
Proposed Rules:
100 53671
165 52591

34 CFR
Proposed Rules:
Ch. II 53254
Ch. VI 52273

36 CFR
Proposed Rules:
13 52595

38 CFR
3 52977
14 52977
20 52977
Proposed Rules:
36 53146

39 CFR
3020 53139

40 CFR
9 ..... 51899, 52563
52 ..... 51913, 52420, 52426, 52439, 52564, 53299
62 52201
81 52205
180 ..... 52210, 52215, 52985, 52990
271 52220
721 ..... 51899, 52563
Proposed Rules:
52 ..... 51923, 52602, 53355
62 52275
81 53008
180 53009
271 52275

42 CFR
495 52910

43 CFR
2 51916
Proposed Rules:
2 51926

44 CFR
64 53618

45 CFR
146 52994
147 52994
148 52994
155 52994
156 52994
170 52910

46 CFR
2 53621
24 53621
25 53621
30 53621
70 53621
90 53621
188 53621
Proposed Rules:
401 52602

47 CFR
25 52224
64 53303
73 ..... 52225, 53006, 53143
97 52226
Proposed Rules:
20 53356

48 CFR
Proposed Rules:
515 54126
538 54126
552 54126

49 CFR
Proposed Rules:
232 53356
613 ..... 51922, 53673
622 53673

50 CFR
17 ..... 52567, 52576, 53303, 53315
20 ..... 52226q
223 53852
300 53631
622 ..... 53006, 53144
635 53344
648 ..... 51917, 52578
679 52583
Proposed Rules:
Ch. II 53151
Ch. III 53151
Ch. IV 53151
Ch. V 53151
Ch. VI 53151
17 53384
92 53120
216 53013
223 ..... 51929, 52276
226 53384
600 53386
648 ..... 52293, 53386
660 53401

LIST OF PUBLIC LAWS

Note: No public bills which have become law were received by the Office of the Federal Register for inclusion in today's **List of Public Laws**.

Last List August 13, 2014

Public Laws Electronic Notification Service (PENS)

PENS is a free electronic mail notification service of newly enacted public laws. To subscribe, go to *http://listserv.gsa.gov/archives/publaws-l.html*

Note: This service is strictly for E-mail notification of new laws. The text of laws is not available through this service. **PENS** cannot respond to specific inquiries sent to this address.