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Endangered and Threatened Wildlife and Plants; Reclassification of *Acmispon dendroideus* var. *traskiae* (=*Lotus d.* subsp. *traskiae*) and *Castilleja grisea* as Threatened Throughout Their Ranges; Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2012–0007; FXES11130900000C5–123–FF09E32000]

RIN 1018–AY04

Endangered and Threatened Wildlife and Plants; Reclassification of *Acmispon dendroideus* var. *traskiae* (=*Lotus d.* subsp. *traskiae*) and *Castilleja grisea* as Threatened Throughout Their Ranges

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are reclassifying *Acmispon dendroideus* var. *traskiae* (San Clemente Island lotus) and *Castilleja grisea* (San Clemente Island paintbrush) from endangered to threatened. The endangered designation no longer correctly reflects the status of these plants due to substantial improvement in their status. This action is based on a review of the best available scientific and commercial data, which indicate that the ongoing threats are not of sufficient imminence, intensity, or magnitude to indicate that *A. d.* var. *traskiae* and *C. grisea* are presently in danger of extinction across their ranges. While both taxa will continue to be impacted by military training activities and land use, erosion, nonnative plants, and fire, the significant increase in abundance (number of occurrences) of both taxa reduces the severity and magnitude of threats and the likelihood that any one event would affect all occurrences of either taxon. Additionally, the Department of the Navy (Navy) is implementing conservation actions through their Integrated Natural Resources Management Plan and has successfully reduced threats impacting both taxa and their habitat.

DATES: This rule becomes effective on August 26, 2013.

ADDRESSES: This final rule is available on the Internet at *http://www.regulations.gov* at Docket Number [FWS–R8–ES–2012–0007]. Comments and materials received, as well as supporting documentation used in the preparation of this rule, will be available for public inspection, by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, 2177 Salk Avenue, Suite 250, CA 92008.

FOR FURTHER INFORMATION CONTACT: Jim Bartel, Field Supervisor, Carlsbad Fish and Wildlife Office (see **ADDRESSES**); by telephone at 760–431–9440; or by facsimile (fax) at 760–431–9624. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

This is a final rule to reclassify *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* as threatened under the Act.

Species addressed. Acmispon (previously listed as *Lotus*) *dendroideus* var. *traskiae* (previously San Clemente Island broom and currently known as San Clemente Island lotus), and *Castilleja grisea* (San Clemente Island paintbrush) are endemic to San Clemente Island, which is located 64 miles (mi) (103 kilometers (km)) west of San Diego, California. Current habitat conditions for *A. d.* var. *traskiae* and *C. grisea* on San Clemente Island are the result of present and historical land use practices. San Clemente Island is owned by the U.S. Department of the Navy and, with its associated offshore range complex, is the primary maritime training area for the Navy Pacific Fleet and Navy Sea, Air and Land teams (SEALs). The island also supports training by the U.S. Marine Corps, the U.S. Air Force, and other military organizations.

Purpose of the Regulatory Action. Under the Endangered Species Act, we may be petitioned to list, delist, or reclassify a species. On May 18, 2010, we received a petition dated May 13, 2010, from the Pacific Legal Foundation, requesting, among other actions, that we reclassify *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* from endangered to threatened under the Act, based on the analysis and recommendations contained in the 2007 5-year reviews for these taxa. In 2011, we published a 90-day finding, which concluded that the petition contained substantial information indicating reclassification of the two San Clemente Island plants may be warranted. In 2012, we published a 12-month finding and proposed rule, and found that the petitioned action to downlist *A. d.* var. *traskiae* and *C. grisea* was warranted. Threats to these taxa, though ongoing, have been reduced since listing and are being managed by the Navy through implementation of their Integrated Natural Resources Management Plan. Occurrences of both taxa have increased in number as a result. Therefore, we have determined in this final rule that *A. d.* var. *traskiae* and *C. grisea* no longer meet the definition of endangered under the Endangered Species Act. Instead, both taxa will be reclassified from endangered to threatened to afford continued protection from ongoing threats.

This rule changes the listing of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* from endangered to threatened.

Basis for the Regulatory Action. The increase in the number of occurrences of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* throughout the current range of each taxon demonstrates the success of the Navy's continued management activities on San Clemente Island. As a result, both taxa have increased their distribution and threats have been sufficiently reduced such that they are no longer in danger of extinction throughout all or a significant portion of their range. Therefore, these taxa no longer meet the definition of endangered under the Endangered Species Act. However, impacts due to military training activities, erosion, nonnatives, and fire are ongoing and the best available information indicates these taxa are likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges. Therefore, we are reclassifying *A. d.* var. *traskiae* and *C. grisea* from endangered to threatened. *All comments we received support this action.*

Acronyms Used

We use several acronyms throughout the preamble to this proposed rule. To assist the reader, we set them forth here:

AFP = Artillery Firing Point
AVMA = Assault Vehicle Maneuver Area
BMP = Best Management Practices
CESA = California Endangered Species Act (State of California)
CDFW = California Department of Fish and Wildlife (formerly CDFG, California Department of Fish and Game)
CNDDB = California Natural Diversity Database
DPS = Distinct Population Segment
EO = California Natural Diversity Database element occurrence
GIS = Geographic Information System
INRMP = Integrated Natural Resources Management Plan
IOA = Infantry Operations Areas
IPCC = Intergovernmental Panel on Climate Change
MOFMP = Military Operations and Fire Management Plan
Navy = United States Department of the Navy
NEPA = National Environmental Policy Act (Federal)
NPPA = Native Plant Protection Act (State of California)
OMB = Office of Management and Budget
PL = Point Location
SEALs = Navy Sea, Air, and Land teams

SERG = San Diego State University Soil Ecology and Restoration Group
SHOBA = Shore Bombardment Area
SPR = Significant Portion of the Range
SWAT = Special Warfare Training Areas
TAR = Training Area Ranges
USFWS; Service = United States Fish and Wildlife Service

Background

This is a final rule to reclassify *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* as threatened under the Act. It is our intent to discuss in this final rule only those topics directly relevant to the reclassification of *A. d.* var. *traskiae* and *C. grisea* under the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). For more information on the biology and ecology of these taxa, refer to the 12-month finding and proposed rule to reclassify *A. d.* var. *traskiae* and *C. grisea* from endangered to threatened, which published in the **Federal Register** on May 16, 2012 (77 FR 29078).

Previous Federal Actions

Acmispon dendroideus var. *traskiae* and *Castilleja grisea* were listed as endangered under the Act on August 11, 1977 (42 FR 40682). Subsequently, a Recovery Plan for Channel Island species, including *A. d.* var. *traskiae* and *C. grisea,* was finalized in 1984 (USFWS 1984, pp. 1–165), and 5-year status reviews were completed for each of these taxa in 2007 (USFWS 2007a, pp. 1–22; USFWS 2007b, pp. 1–19) and 2012 (USFWS 2012a, pp. 1–11; USFWS 2012b, pp. 1–9). These status reviews recommended reclassification of *A. d.* var. *traskiae* and *C. grisea* from endangered to threatened status.

On May 18, 2010, we received a petition dated May 13, 2010, from the Pacific Legal Foundation requesting that the Service delist *Oenothera californica* (*avita*) subsp. *eurekensis* (Eureka Valley evening-primrose) and *Swallenia alexandrae* (Eureka Valley dunegrass), and downlist tidewater goby (*Eucyclogobius newberryi*), *Malacothamnus clementinus* (San Clemente Island bush mallow), *Acmispon dendroideus* (*Lotus scoparius* subsp.) var. *traskiae,* and *Castilleja grisea* from endangered to threatened under the Act. The petition was based on the analysis and recommendations contained in the 2007 5-year reviews for these taxa. In a letter to the petitioner dated September 10, 2010, we acknowledged receipt of the petition and initiated a review of the petition under a provision of section 4 of the Act. We stated that we anticipated making an initial 90-day finding in Fiscal Year 2011 (based on available staffing and funding) as to whether or not the petition presented substantial information indicating that the requested action may be warranted.

On January 19, 2011, we published a 90-day finding (76 FR 3069). In the 90-day finding, we concluded that the petition and information in our files provided substantial information that indicated the delisting of *Oenothera californica* (*avita*) subsp. *eurekensis* and *Swallenia alexandrae,* and downlisting of tidewater goby, *Malacothamnus clementinus, Acmispon dendroideus* (*Lotus scoparius* subsp.) var. *traskiae,* and *Castilleja grisea* may be warranted, and announced that we were initiating status reviews for these species. On May 16, 2012, we announced the completion of our status review of the three San Clemente Island plant taxa, and issued a proposed rule to reclassify *A. d.* var. *traskiae* and *C. grisea* from endangered to threatened (we found reclassification of *M. clementinus* was not warranted) (77 FR 29078, USFWS 2012, p. 29078). This document is our final rule to reclassify *A. d.* var. *traskiae* and *C. grisea* from endangered to threatened (the 12-month findings for *O. c. (avita)* subsp. e*urekensis, S. alexandrae,* and tidewater goby will be addressed in separate documents).

Taxonomic Correction

Acmispon dendroideus var. *traskiae* has undergone taxonomic realignments since it was listed in 1977 (42 FR 40682; August 11, 1977). In our proposed rule to reclassify this taxon as a threatened species, we accepted the change of scientific name to *Acmispon dendroideus* (Greene) Brouillet var. *traskiae* (Noddin) Brouillet from *Lotus dendroideus* subsp. *traskiae.* This change was supported by morphological and molecular data (Allan and Porter 2000, p. 1876; Sokoloff 2000, p. 128; Brouillet 2008, p. 389). Please see the Species Description and Taxonomy—*Acmispon dendroideus* var. *traskiae* section of the proposed rule for a detailed explanation of this taxonomic correction.

Changes From Proposed Rule

(1) In the proposed rule to reclassify *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* we defined occurrences of the two taxa by mapping smaller groupings of plants (point locations) and combining point locations that fall within 0.25 mi (402 m) of one another with any corresponding California Natural Diversity Database (CNDDB) polygons representing elemental occurrences. Since publication of the proposed rule, most of the point locations have been assigned elemental occurrence numbers in CNDDB, and many elemental occurrences in CNDDB have been combined.

(2) The Navy informed us that the West Cove occurrence of *Castilleja grisea* was an error. Therefore, we removed the West Cove occurrence from our records and revised discussions of the taxon in this rule. This change has no effect on our finding regarding the reclassification of the taxon; although we recognize one less occurrence of the species, more individual *C. grisea* plants have been identified since the publication of the proposed rule, indicating that the plant's abundance is continuing to increase in response to the Navy's recovery efforts.

Current information for each occurrence of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* is presented in table 1 and in figures 1 and 2. Groups of plants were described in the past using many different terms including: Point localities, populations, occurrences, and element occurrences. Unless referring to a specific author's research and language, we refer to identifiable and separable groups of plants as ''occurrences'' in this final rule. We defined these occurrences by mapping smaller groupings of plants (point locations) and combining point locations that fall within 0.25 mi (402 m) of one another with any corresponding California Natural Diversity Database (CNDDB) polygons. These combined points meet the broader California Department of Fish and Wildlife (CDFW) definition of an element occurrence, which is a record of an observation or series of observations. Information for each occurrence of these two taxa is described in table 1.

TABLE 1—DISTRIBUTION AND STATUS OF OCCURRENCES OF *Acmispon dendroideus* var. *traskiae* (SAN CLEMENTE ISLAND LOTUS) AND *Castilleja grisea* (SAN CLEMENTE ISLAND PAINTBRUSH)

Location description (occurrences)	Element occurrence (EO) No. and point location (PL) [1]	Status [2] at listing; year of first record	Current status (reference)	Current threats [3]	Military use [4]
Acmispon dendroideus var. ***traskiae***					
Eagle Canyon	EO 1, 21; 9 PLs.	extant; 1980 CNDDB.	extant (Junak 2006, SERG 2008, CNDDB 2013).	A: land use, erosion, nonnatives, fire; E: movement, fire, climate.	low military value; area recently closed.
Bryce Canyon	EO 1; 14 PLs	unknown	Extant (SERG 2009, CNDDB 2013).	A: nonnatives, fire; E: fire, climate.	low military value; area recently closed.
North Mosquito Cove	EO 1; 14 PLs	extant; 1939 herbarium record.	Extant (SERG 2010)	A: land use, erosion, nonnatives, fire; E: movement, fire, climate.	low military value; area recently closed.
Canchalagua Canyon (including south Mosquito Cove).	EO 4, 23; 21 PLs.	unknown	extant (SERG 2011)	A: land use, erosion, nonnatives, fire; E: movement, fire, climate.	low military value; area recently closed.
Thirst Canyon (including Vista Canyon).	EO 20, 8 PLs	unknown	Extant (SERG 2009, CNDDB 2013).	A: nonnatives, fire; E: fire, climate.	medium military value.
Cave Canyon	EO 22, 42, 43; 3 PLs.	unknown	presumed extant (Junak 1997, CNDDB 2013).	A: nonnatives, fire; E: fire, climate.	medium military value.
Horse Canyon	EO 41; 2 PLs	unknown	presumed extant (Junak 1997, CNDDB 2013).	A: nonnatives, fire; E: fire, climate.	medium military value.
Pyramid Head	EO 5; 1 PL	extant; 1979 CNDDB.	presumed extant (Junak 1997).	A: nonnatives, fire; E: fire, climate.	high military value; area closed.
SHOBA Boundary (north to Twin Dams Canyon).	EO 17, 18, 19, 33; 8 PLs.	unknown	presumed extant (Junak 1996, CNDDB 2013).	A: nonnatives; E: climate	medium military value.
Twin Dams Canyon	EO 32; 2 PLs	unknown	Extant (Junak 2006, CNDDB 2013).	A: nonnatives; E: climate	medium military value.
Horton Canyon (including Stone, Burn's, and Horton Canyons).	EO 13; 27 PLs.	unknown	Extant (SERG 2010)	A: erosion, nonnatives; E: climate.	medium military value.
Tota Canyon	EO 13; 7 PLs	unknown	presumed extant (SERG 2010, CNDDB 2013).	A: erosion, nonnatives; E: climate.	low military value.
Lemon Tank Canyon (including Nanny Canyon).	EO 16, 25; 19 PLs.	unknown	extant (Junak 2004, CNDDB 2013).	A: erosion, nonnatives; E: movement, climate.	low military value; area partially closed.
Larkspur Canyon	EO 24; 2 PLs	unknown	extant (SERG 2011, CNDDB 2013).	A: erosion, nonnatives, fire; E: movement, fire, climate.	low military value.
Chamish Canyon	EO 3; 1 PL	extant; 1980 CNDDB.	presumed extant (Junak 1997).	A: erosion, nonnatives, fire; E: movement, fire, climate.	low military value.
Box Canyon	EO 40; 2 PLs	unknown	presumed extant (Junak 1997, CNDDB 2013).	A: nonnatives; E: climate	low military value.
Norton Canyon	EO 36, 38, 39; 1 PL.	unknown	extant (Junak 2004, CNDDB 2013).	A: nonnatives; E: climate, hybridization.	low military value.
Upper Middle Ranch Canyon.	EO 10, 5 PLs	unknown	extant (Junak 2004)	A: erosion, nonnatives; E: climate.	low military value.
Lower Middle Ranch Canyon.	EO 37; 3 PLs	unknown	extant (SERG 2008, CNDDB 2013).	A: nonnatives; E: climate	low military value.
Waymuck Canyon	EO 34; 4 PLs	unknown	extant (SERG 2011, CNDDB 2013).	A: nonnatives; E: climate	high military value.
Warren Canyon	EO 35, 12; 20 PLs.	unknown	extant (SERG 2011, CNDDB 2013).	A: erosion, nonnatives; E: movement, climate.	high military value.
Middle Wallrock Canyon.	EO 29, 31; 10 PLs.	unknown	extant (Junak 2004, CNDDB 2013).	A: nonnatives; E: movement, climate.	high military value.
Upper Wallrock Canyon.	EO 30; 3 PLs	unknown	extant (Junak 2006, CNDDB 2013).	A: erosion, nonnatives; E: climate.	high military value.
Seal Cove Terraces	EO 14, 27, 28; 3 PLs.	unknown	extant (Junak 2004, CNDDB 2013).	A: erosion, nonnatives, fire; E: movement, fire, climate.	high military value.
Eel Cove Canyon (including terraces).	EO 26; 6 PLs	unknown	extant (SERG 2010, CNDDB 2013).	A: erosion, nonnatives, fire; E: movement, fire, climate.	high military value.
Middle Island Plateau	EO 7; 6 PLs	unknown	extant (Tierra Data 2007)	A: land use, erosion, nonnatives, fire; E: movement, fire, climate.	high military value.

TABLE 1—DISTRIBUTION AND STATUS OF OCCURRENCES OF *Acmispon dendroideus* var. *traskiae* (SAN CLEMENTE ISLAND LOTUS) AND *Castilleja grisea* (SAN CLEMENTE ISLAND PAINTBRUSH)—Continued

Location description (occurrences)	Element occurrence (EO) No. and point location (PL) [1]	Status [2] at listing; year of first record	Current status (reference)	Current threats [3]	Military use [4]
Wilson Cove	EO 11; 52 PLs.	extant; 1981 CNDDB.	extant (SERG 2010)	A: land use, erosion, nonnatives, fire; E: movement, fire, climate, hybridization.	high military value.
North Wilson Cove	EO 9; no PLs	extant; 1959 herbarium record.	Unknown	A: erosion, nonnatives; E: climate.	high military value.
North Island Terraces.	EO 15; no PLs.	unknown	presumed extant (CNDDB 1996).	A: erosion, nonnatives; E: movement, climate.	medium military value.
Castilleja grisea					
Thirst Canyon (including Vista Canyon).	EO 3; 21 PLs	extant; 1980 CNDDB.	extant (SERG 2010)	A: nonnatives, fire; E: climate.	medium military value.
Eagle Canyon (including Grove Canyon).	EO 3; 50 PLs	extant; 1979 herbarium record.	extant (Tierra Data 2006)	A: land use, erosion, nonnatives, fire; E: movement, climate.	low military value; area recently closed.
Bryce Canyon	EO 3, 50; 43 PLs.	extant; 1979 GIS data.	extant (SERG 2010, CNDDB 2013).	A: land use, erosion, nonnatives, fire; E: movement, climate.	low military value; area recently closed.
Canchalagua Canyon (including south Mosquito Cove and Matriarch Canyon).	EO 3, 29; 56 PLs.	extant; 1963 herbarium record.	extant (SERG 2011, CNDDB 2013).	A: land use, erosion, nonnatives, fire, fire management; E: movement, climate.	low military value; area recently closed.
Knob Canyon	EO 2; 21 PLs	extant; 1979 CNDDB.	extant (Tierra Data 2006, SERG 2008).	A: land use, erosion, nonnatives, fire, fire management; E: movement, climate.	low military value; area recently closed.
Pyramid Head	EO 1; 25 PLs	extant; 1965 herbarium record.	extant (SERG 2011)	A: land use, erosion, nonnatives, fire; E: movement, climate.	high military value; partially recently closed.
Snake Canyon (including Sun Point).	EO 1; 4 PLs	extant; 1939 CNDDB.	presumed extant (Junak 1997).	A: nonnatives, fire; E: fire, climate.	high military value; area closed.
Upper Chenetti Canyon.	EO 34, 53; 1 PL.	unknown	extant (Junak 2004, CNDDB 2013).	A: nonnatives, erosion, fire, fire management; E: fire, climate.	high military value; area closed.
Horse Beach Canyon	EO 25; 49 PLs.	extant; 1939 herbarium record.	presumed extant (Junak 2006).	A: land use, erosion, nonnatives, fire, fire management; E: movement, fire, climate.	high military value; area closed.
China Canyon	EO 25, 28, 50; 6 PLs.	extant; 1939 herbarium record.	presumed extant (Junak 1997; SERG 2009, CNDDB 2013).	A: land use, erosion, nonnatives, fire, fire management; E: movement, fire, climate.	high military value; area closed.
Red Canyon	EO 36; no PLs.	extant; 1975 herbarium record.	presumed extant (CNDDB 1986).	A: land use, erosion, nonnatives, fire, fire management; E: movement, fire, climate.	high military value; area closed.
Kinkipar Canyon	EO 52; 2 PLs	unknown	extant (SERG 2006, CNDDB 2013).	A: nonnatives, fire; E: climate.	medium military value.
Cave Canyon	EO 17, 38; 9 PLs.	extant; 1980 CNDDB.	extant (SERG 2009, CNDDB 2013).	A: nonnatives, fire; E: climate.	medium military value.
Horse Canyon	EO 26, 67; 6 PLs.	unknown	extant (SERG 2010, CNDDB 2013).	A: nonnatives, fire; E: climate.	medium military value.
Upper Horse Canyon	EO 19; 1 PL	extant; 1979 CNDDB.	extant (Junak 2004)	A: erosion, nonnatives, fire; E: climate.	medium military value.
SHOBA Boundary (north to and including Twin Dams Canyon).	EO 3; 55 PLs	extant; 1965 CNDDB.	extant (Junak 2006, SERG 2011).	A: nonnatives; E: climate	medium military value.
Horton Canyon (including Stone and Burn's Canyons).	EO 3; 24 PLs	extant; 1981 CNDDB.	extant (Junak 2006, SERG 2010).	A: erosion, nonnatives; E: climate.	medium military value.

TABLE 1—DISTRIBUTION AND STATUS OF OCCURRENCES OF *Acmispon dendroideus* var. *traskiae* (SAN CLEMENTE ISLAND LOTUS) AND *Castilleja grisea* (SAN CLEMENTE ISLAND PAINTBRUSH)—Continued

Location description (occurrences)	Element occurrence (EO) No. and point location (PL) [1]	Status [2] at listing; year of first record	Current status (reference)	Current threats [3]	Military use [4]
Lemon Tank Canyon (including Tota Canyon).	EO 3; 14 PLs	unknown	extant (SERG 2010)	A: land use, erosion, nonnatives, fire; E: movement, fire, climate.	low military value; area closed.
Nanny Canyon	EO 13, 60; 3 PLs.	extant; 1979 CNDDB.	extant (Junak 2004, CNDDB 2013).	A: nonnatives; E: movement, climate.	low military value; area partially closed.
Larkspur Canyon (including Chamish Canyon).	EO 14, 68; 15 PLs.	extant; 1981 CNDDB.	extant (SERG 2006–2011, CNDDB 2013).	A: land use, erosion, nonnatives, fire; E: movement, fire, climate.	low military value.
Box Canyon	EO 20, 66; 22 PLs.	extant; 1979 CNDDB.	extant (SERG 2011, CNDDB 2013).	A: nonnatives; E: fire, climate.	low military value.
Upper Norton Canyon.	EO 20; 6 PLs	extant; 1979 CNDDB.	extant (SERG 2011)	A: nonnatives; E: fire, climate.	low military value.
Middle Ranch Canyon.	EO 24, 65; 8 PLs.	extant; 1981 CNDDB.	extant (SERG 2008, CNDDB 2013).	A: nonnatives; E: climate ...	low military value.
Waymuck Canyon	EO 22; 1 PL	unknown	extant (Junak 2004)	A: nonnatives; E: climate ...	high military value.
Plain northeast of Warren Canyon.	EO 63, 64; 4 PLs.	unknown	extant (Tierra Data 2007, CNDDB 2013).	A: land use, erosion, nonnatives; E: movement, climate.	medium military value.
Seal Cove Terraces	EO 62; 2 PLs	unknown	extant (CNDDB 1985, SERG 2010, CNDDB 2013).	A: erosion, nonnatives, fire; E: movement, fire, climate.	high military value.
Eel Cove Canyon (including terraces).	EO 61; 3 PLs	unknown	extant (Junak 2004, CNDDB 2013).	A: nonnatives, fire; E: movement, fire, climate.	high military value.
Terrace Canyon (south to terraces around Spray).	EO 55, 56, 57, 58, 59, 69; 6 PLs.	unknown	presumed extant (SERG 2004, CNDDB 2013).	A: erosion, nonnatives; E: movement, climate.	high military value.

[1] EO: element occurrence, as defined and described according to the California Natural Diversity Database. PL: point locations of plants.
[2] Threats identified in the listing rule for these two taxa include: Factor A: habitat modification by feral animals; Factor C: grazing by animals; Factor E: nonnative plants.
[3] Current threats: Nonnatives = Nonnative Plants; Movement = Movement of Vehicles and Troops; Climate = Climate Change; Genetic = Genetic Diversity.
[4] Military value as defined in the Navy's 2002 INRMP. Values defined according to the management emphasis, with high-value areas designated for maximum military use and low-value areas retaining the greatest flexibility for maintaining natural resource values.

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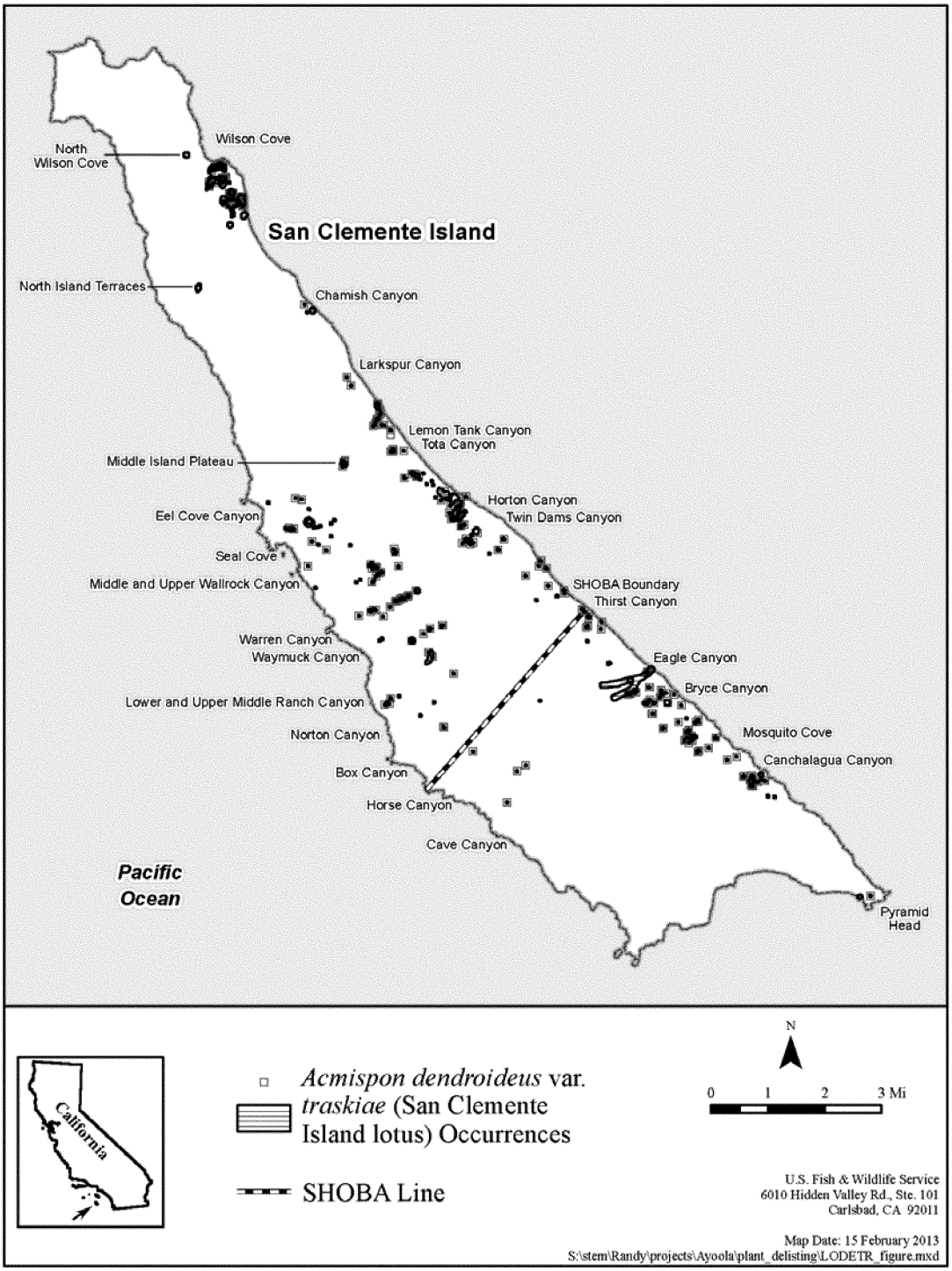

Figure 1. Distribution of 29 occurrences of *Acmispon dendroideus* var. *traskiae* (San Clemente Island lotus) on San Clemente Island, Los Angeles County, California. General geographic location of each occurrence is indicated by name. Squares represent point locations and horizontal striped polygons represent element occurrences.

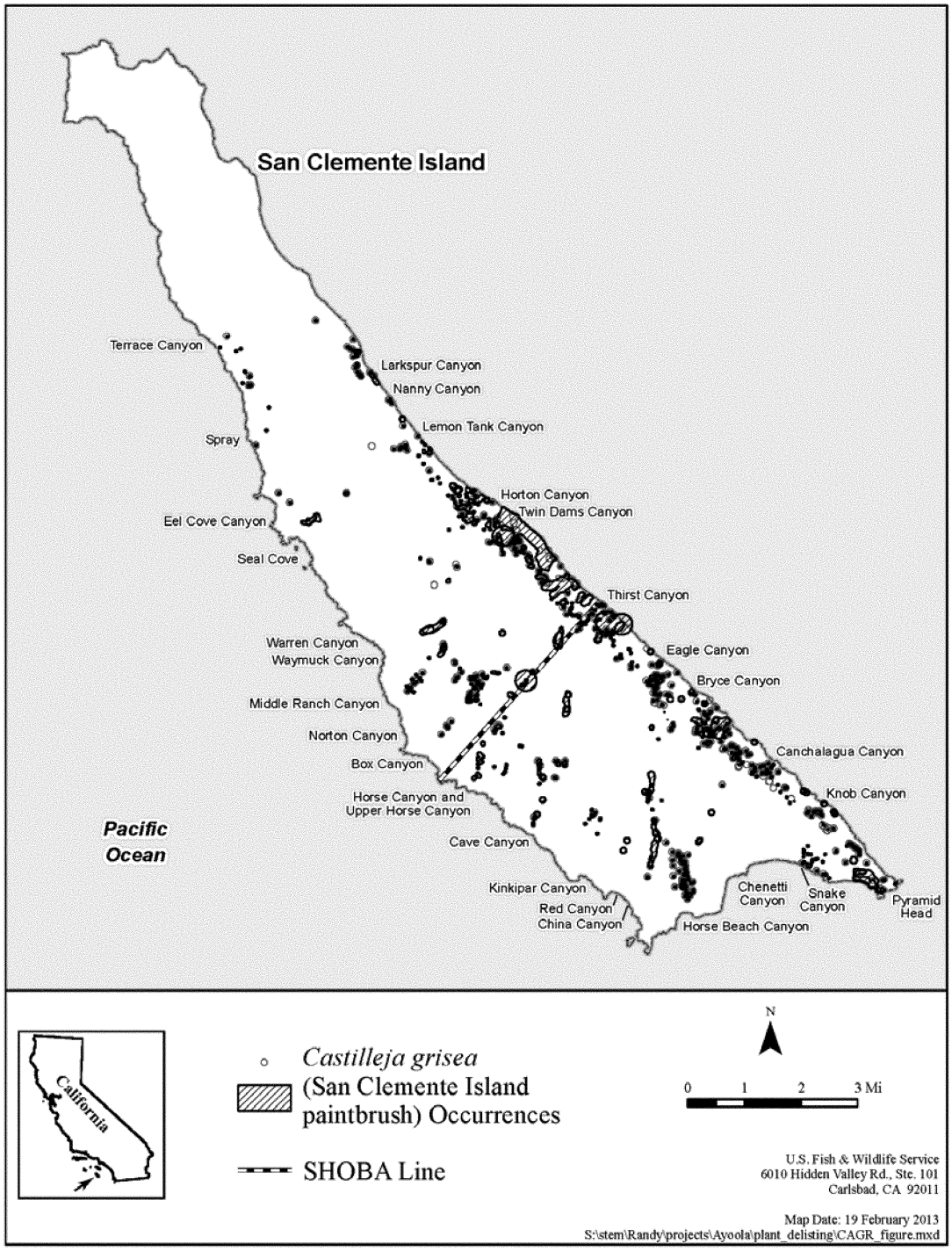

Figure 2. Distribution of 28 occurrences of *Castilleja grisea* (San Clemente Island paintbrush) on San Clemente Island, Los Angeles County, California. General geographic location of each occurrence is indicated by name. Circles represent point locations and diagonal striped polygons represent element occurrences.

BILLING CODE 4310–55–C

(3) In the proposed rule, we discussed a study by Liston *et al.* (1990), who performed genetic analysis on 38 plants (6 *Acmispon argophyllus* var. *argenteus* and 32 *Acmispon dendroideus* var. *traskiae*) in the vicinity of Wilson Cove to determine the extent of hybridization between the two taxa (Liston *et al.* 1990, pp. 239–244). Liston *et al.* (1990, p. 240) detected 4 hybrids out of the 38 plants examined (11 percent). Since publication of the proposed rule, we received information from a peer reviewer regarding a more recent study. Dr. Mitchell McGlaughlin (University of Northern Colorado, 2012, pers. comm.) in collaboration with Dr. Kaius Helenurm analyzed 219 *A. d.* var.

traskiae and *A. argophyllus* var. *argenteus* plants and found evidence of hybridization in 12 plants (approximately 5 percent). The hybrid plants were found at Wilson Cove, Pyramid Head, Bryce Canyon, Eagle Canyon, Waymuck Canyon (between 1 and 4 hybrids were documented at each site out of an average of 20 plants sampled per site) (McGlaughlin 2012, pers. comm). McGlaughlin (2012, pers. comm.) concludes that the data indicate hybridization between these taxa is relatively rare and may not represent a significant threat to *A. d.* var. *traskiae.* Further details of this study are discussed below in the Five-Factor Analysis for *A. d.* var. *traskiae.*

Recovery

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. The Act directs that, to the maximum extent practicable, we incorporate into each plan:

(1) Site-specific management actions that may be necessary to achieve the plan's goals for conservation and survival of the species;

(2) Objective, measurable criteria, which when met would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from the list; and

(3) Estimates of the time required and cost to carry out the plan.

Revisions to the list (adding, removing, or reclassifying a species) must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is endangered or threatened (or not) because of one or more of five threat factors. Objective, measurable criteria, or recovery criteria contained in recovery plans, help indicate when we would anticipate an analysis of the five threat factors under section 4(a)(1) would result in a determination that a species is no longer endangered or threatened. Section 4(b) of the Act requires that the determination be made ''solely on the basis of the best scientific and commercial data available.''

While recovery plans are intended to provide guidance to the Service, States, and other partners on methods of minimizing threats to listed species and on criteria that may be used to determine when recovery is achieved, they are not regulatory documents and cannot substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. Determinations to remove a species from the list made under section 4(a)(1) of the Act must be based on the best scientific and commercial data available at the time of the determination, regardless of whether that information differs from the recovery plan.

In the course of implementing conservation actions for a species, new information is often gained that requires recovery efforts to be modified accordingly. There are many paths to accomplishing recovery of a species, and recovery may be achieved without all criteria being fully met. For example, one or more recovery criteria may have been exceeded while other criteria may not have been accomplished, yet the Service may judge that, overall, the threats have been minimized sufficiently, and the species is robust enough, that the Service may reclassify the species from endangered to threatened or perhaps delist the species. In other cases, recovery opportunities may have been recognized that were not known at the time the recovery plan was finalized. These opportunities may be used instead of methods identified in the recovery plan.

Likewise, information on the species may be learned that was not known at the time the recovery plan was finalized. The new information may change the extent that criteria need to be met for recognizing recovery of the species. Overall, recovery of species is a dynamic process requiring adaptive management, planning, implementing, and evaluating the degree of recovery of a species that may, or may not, fully follow the guidance provided in a recovery plan.

Thus, while the recovery plan provides important guidance on the direction and strategy for recovery, and indicates when a rulemaking process may be initiated, the determination to remove a species from the Federal List of Endangered and Threatened Plants (50 CFR 17.12) is ultimately based on an analysis of whether a species is no longer endangered or threatened. The following discussion provides a brief review of recovery planning for *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* as well as an analysis of the recovery criteria and goals as they relate to evaluating the status of the taxa.

In 1984, we published the California Channel Islands Species Recovery Plan (Recovery Plan) that addresses seven listed taxa (including *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea*) and three candidate taxa distributed among three of the Channel Islands (USFWS 1984). Recovery plans are intended to guide actions to recover listed species and to provide measurable objectives against which to measure progress towards recovery. Following guidance in effect at that time, the Recovery Plan was not focused on criteria that specifically addressed the point at which threats identified for each species in the listing rule would be removed or sufficiently ameliorated. Given the threats in common to the species addressed, the Recovery Plan is broad in scope and focuses on restoration of habitats and ecosystem function. Instead of specific criteria, it included six general objectives covering all of the plant and animal species:

Objective 1: Identify present adverse impacts to biological resources and strive to eliminate them.

Objective 2: Protect known resources from further degradation by: (a) Removal of feral herbivores, carnivores, and selected exotic plant species; (b) control of erosion in sensitive locations; and (c) direct military operations and adverse recreational uses away from biologically sensitive areas.

Objective 3: Restore habitats by revegetation of disturbed areas using native species.

Objective 4: Identify areas of San Clemente Island where habitat restoration and population increase of certain addressed taxa may be achieved through a careful survey of the island and research on habitat requirements of each taxon.

Objective 5: Delist or upgrade the listing status of those taxa that achieve vigorous, self-sustaining population levels as the result of habitat stabilization, restoration, and preventing or minimizing adverse human-related impacts.

Objective 6: Monitor effectiveness of recovery effort by undertaking baseline quantitative studies and subsequent followup work (USFWS 1984, pp. 106–107).

Progress has been made toward achieving these objectives. Our review of the Recovery Plan focuses on the actions identified that promote the recovery of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea.* The Recovery Plan adopts a generalized strategy of eliminating or controlling selected nonnative species and restoring habitat conditions on the Channel Islands to support viable, self-sustaining occurrences of each of the addressed taxa. The Recovery Plan states that ''[o]nce the threats to these taxa have been removed or minimized and the habitats are restored, adequately protected, and properly managed, reclassification for some taxa may be considered'' (USFWS 1984, p. 108).

Actions specified in the Recovery Plan that are pertinent to recovery of the endangered San Clemente Island plant taxa include:

(1) Removing feral animals;

(2) Removing or controlling selected nonnative plants;

(3) Controlling erosion;

(4) Revegetating eroded and disturbed areas;

(5) Reintroducing and reestablishing listed plant species populations;

(6) Modifying existing management plans to minimize habitat disturbance and incorporate recovery actions into natural resource management plans;

(7) Protecting habitat by minimizing habitat loss and disturbance and by preventing the introduction of additional nonnative organisms;

(8) Determining the habitat and other ecological requirements of the listed plant taxa (such as reproductive biology and fire tolerance);

(9) Evaluating the success of management actions;

(10) Increasing public support for recovery efforts; and

(11) Using existing laws and regulations to protect each taxon.

Recovery Plan Implementation

The primary objective of the Recovery Plan is to restore endangered and threatened species to nonlisted status. Though the specific sizes and numbers of occurrences needed for self-sustaining populations for each species were not identified, habitat restoration and protection that would result in achieving self-sustaining populations were discussed (see Objective 5). The Recovery Plan stated that reclassification of these taxa may be considered after threats have been removed or sufficiently minimized and the habitat is restored. Specific criteria for determining when threats have been removed or sufficiently minimized were not identified in the Recovery Plan, but six objectives were described in general to achieve recovery of the Channel Island species. This section provides a summary of actions and activities that have been implemented according to the 1984 Recovery Plan (USFWS 1984, pp. 106–107) and contribute to achievement of these objectives.

Objective 1: Identify present adverse impacts to biological resources and strive to eliminate them.

The Navy has taken significant steps to eliminate incidental impacts to *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* by educating Navy personnel stationed on San Clemente Island. The Navy also created the position of Island Operations Manager to increase support for recovery efforts on the island. This individual's role is to act as a liaison between the Navy's natural resource branch and other island users (Larson 2009, pers. comm.). The Island Operations Manager educates users of the island to the uniqueness and fragility of the island's ecosystem, and briefs new operational groups as they come onto the island (Larson 2009, pers. comm.). These briefings inform operational groups of the Navy's natural resource management responsibilities under the law, and may include additional information about threats to, and locations of, listed taxa.

The Recovery Plan recommends that existing laws and regulations be used to protect *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* from threats on San Clemente Island. Based on the occurrence of these taxa on federally owned land, the primary laws with potential to protect them include the National Environmental Policy Act (NEPA) and the Act. NEPA requires Federal action agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. The Navy has implemented NEPA since its enactment in 1970. Likewise, the Navy has a history of consultation and coordination with us under the Act regarding the effects of various San Clemente Island activities on federally listed species since taxa on the island were first listed in 1977. Finally, pursuant to the Sikes Act Improvement Act (Sikes Act), the Navy adopted an Integrated Natural Resources Management Plan (INRMP) for San Clemente Island in 2002 that helps guide the management and protection of these taxa (Navy 2002, pp. 1.1–8.12).

The Sikes Act (16 U.S.C. 670) authorizes the Secretary of Defense to develop cooperative plans with the Secretaries of Agriculture and the Interior for natural resources on public lands (see *Sikes Act Improvement Act* section under *Factor D. Inadequacy of Existing Regulatory Mechanisms* below for further discussion). An INRMP is a plan that is intended ''. . . to guide installation commanders in managing their natural resources in a manner that is consistent with the sustainability of those resources while ensuring continued support of the military mission'' (Navy 2002, p. 1–1). To achieve this, the INRMP identifies goals and objectives for specified management units and their natural resources. The following objectives have been incorporated as part of the INRMP to address the Recovery Plan task of incorporating recovery actions into existing management plans (Navy 2002, pp. 4–38–4–40):

(1) Protect, monitor, and restore plants and cryptograms (soil crusts composed of living cyanobacteria, algae, fungi, or moss) in order to manage for their long-term sustainability on the island;

(2) Conduct status surveys for listed plants;

(3) Ensure that Management Focus Plants have a network of suitable sites;

(4) Perform studies to determine the pollinators of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea;* and

(5) Continue to apply genetic research and management approaches to rare plant management.

Through these mechanisms, the Navy is required to identify and address all threats to these species during the INRMP planning process. If possible, threats are ameliorated, eliminated, or mitigated through this procedure. The Navy has strived to fulfill this objective through both internal planning (INRMP) and through compliance with Federal law (consultations with us under the Act and preparing environmental review documents under NEPA). As discussed below under the five factors, the actions taken by the Navy under the INRMP have not completely eliminated all adverse impacts, but their efforts have greatly reduced many of the current threats impacting these taxa. These contributions to the elimination of adverse impacts partially fulfill, but do not fully achieve, the objective for the two species.

Objective 2: Protect known resources from further degradation by: (a) removal of feral herbivores, carnivores, and selected exotic plant species; (b) control of unnatural erosion in sensitive locations; and (c) directing military operations and adverse recreational uses away from biologically sensitive areas.

In 1992, the Navy fulfilled a major part of this objective by removing the last of the feral goats and pigs from San Clemente Island. Nonnative plants have also been targeted for removal from San Clemente Island, and efforts to control nonnatives have been implemented on an annual basis since approximately 1993 (O'Connor 2009a, pers. comm.; Munson 2013, pers. comm.). The specific nonnative plants targeted and amount of money allocated to this program are adjusted on an annual basis (O'Connor 2009b, pers. comm.; Munson 2013, pers. comm.). The effectiveness of this program was improved by providing authorization to apply herbicides (O'Connor 2009b, pers.

comm.; Munson 2013, pers. comm.). Priorities in the nonnative plant program are currently focused on new nonnatives to the island and particularly destructive nonnative species.

The Navy is also taking steps to minimize the effects of erosion on the island. Erosion control measures are being incorporated into project designs to minimize the potential to exacerbate existing erosion (O'Connor 2009c, pers. comm.; Munson 2013, pers. comm.). With the expansion of military operational areas, the Navy committed to prepare and implement an erosion control plan that will minimize soil erosion within and adjoining the operational areas (Navy 2008b, pp. 5–30; USFWS 2008 p. 62). The Navy is nearing finalization of the erosion control plan, and has agreed not to conduct training activities that may lead to impacts from erosion until the plan is successfully implemented (Munson 2013, pers. comm.). The Navy is using best management practices (BMPs) when creating and approving projects that might contribute to erosion on the island (Munson 2013, pers. comm.). It is, however, unclear whether erosion control measures will be implemented consistently in areas that are closed to monitoring and access due to unexploded ordnance. The proposed erosion control plan includes development and application of BMPs such as: establishing setbacks and buffers from steep slopes, drainages, and sensitive resources; constructing site-specific erosion control structures; conducting revegetation and routine maintenance; and monitoring and adjusting the BMPs as appropriate. The Navy has taken steps to reduce the threat of erosion on the island and contribute to the achievement of this objective.

The Navy is taking precautions to avoid plants when possible to minimize direct impacts to *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* resulting from military activities. For example, in the Military Operations and Fire Management Plan (MOFMP), the Navy proposed to develop a Training Area Range (TAR) that contained *A. d.* var. *traskiae* within its boundaries. After consultation with the Service, the Navy revised these boundaries to avoid most of the *A. d.* var. *traskiae* and minimize the impact of training on the species (USFWS 2008, p. 118).

This objective has been largely met for *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea.* Feral herbivores have been removed, erosion control measures are being implemented, and military activities are avoiding direct impacts to plants whenever possible. The Navy is also developing an erosion control plan for military activities.

Objective 3: Restore habitats by revegetation of disturbed areas using native species.

Since 2001, the Navy has contracted with the San Diego State University Soil Ecology and Restoration Group (SERG) to propagate and outplant (transplant individuals from the greenhouse to vegetative communities) native species on the island (Howe 2009, pers. comm.; Munson 2013, pers. comm.). The SERG has outplanted about 4,000 native plants in the past 5 years, and thousands of native plants were outplanted by SERG before that time (Munson 2013, pers. comm.). There have been about 4,000 recruits documented at outplanting sites (Munson 2013, pers. comm.). This program has not included propagation and outplanting of listed plant taxa, except in one instance to replace *Acmispon dendroideus* var. *traskiae* plants that were extirpated during a scrap metal removal project (Munson 2011, pers. comm.). The outplanting of native species is primarily focused on restoring sensitive habitats on the island and improving habitat conditions for endangered animal taxa (such as the San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*)), with some revegetation of eroded and disturbed areas (O'Connor 2009b, pers. comm.; Munson 2013, pers. comm.). Although only one of the restoration efforts was specifically designed for the benefit of one of the plant taxa addressed in this rule, restoration of the island's vegetation communities should help improve habitat suitability for both taxa by reducing the spread of invasive nonnative plants and restoring ecological processes. Although progress has been made toward restoring disturbed areas, areas still exist (e.g., especially within SHOBA) that need further restoration of native species. Therefore, while restoration is occurring, the objective has not been fully met at this time for *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea.*

Objective 4: Identify areas of San Clemente Island where habitat restoration and population increase of certain addressed taxa may be achieved through a careful survey of the island and research on habitat requirements of each taxon.

A number of studies have addressed the ecology, taxonomy, and genetics of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* since they were listed. Evans and Bohn (1987, pp. 537–545) observed insects on plants, collected seeds, and studied the germination of *A. d.* var. *traskiae* and *C. grisea.* Junak and Wilken (1998, pp. 1–426) studied flowering and fruiting in natural populations and performed germination trials with collected seeds from both taxa. Allan (1999, pp. 46–105) observed pollinators and germinated seeds collected from *A. d.* var. *traskiae.* Liston *et al.* (1990) confirmed suspected hybridization between *A. d.* var. *traskiae* and *A. argophyllus* var. *argenteus* using genetic techniques. Additionally, Allan (1999, pp. 46–105) surveyed the genetics of a number of taxa within the genus *Lotus,* including a group that includes *A. d.* var. *traskiae,* to compare genetic divergence between California mainland and island taxa. Helenurm *et al.* (2005, pp. 1221–1227) studied patterns of genetic variation among occurrences of *C. grisea.* These studies have helped to elucidate potential plant pollinators and mating systems, develop plant propagation techniques, and design management strategies that take into consideration genetic factors. There is a growing body of knowledge on the habitat requirements and life history of listed species on the island. This research, encouraged and supported by the Navy, will continue to contribute to achieving Objective 4 and to planning successful restoration of habitat and recovery of both taxa. Additional surveys and research necessary to identify appropriate restoration, management, and recovery actions include: research on the degree of hybridization in *A. d.* var. *traskiae* and study of the host plants of *C. grisea.* Thus, this objective has not been fully achieved at this time for these taxa.

Objective 5: Delist or upgrade the listing status of those taxa that achieve vigorous, self-sustaining population levels as the result of habitat stabilization, restoration, and preventing or minimizing adverse human-related impacts.

The distributions of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* have increased substantially over much of the island since listing. There are now vigorous, self-sustaining occurrences of *A. d.* var. *traskiae* and *C. grisea* on San Clemente Island, as described above. Threats to these taxa have also been reduced due to management actions carried out by the Navy (USFWS 2007a, pp. 1–22; USFWS 2007b, pp. 1–19). Although the goal of delisting has not yet been met, the objective to improve the status of *A. d.* var. *traskiae* and *C. grisea* to the point they can be reclassified has been met.

Objective 6: Monitor effectiveness of recovery efforts by undertaking baseline quantitative studies and subsequent followup work.

To evaluate the success of management actions undertaken to benefit listed plant taxa, the Navy implemented a long-term vegetation monitoring study (Tierra Data Inc. 2005, pp. i–96 and Appendices) and commissioned sensitive plant surveys (Junak and Wilken 1998, pp. 1–416; Junak 2006, pp. 1–176). Overall, vegetation trend monitoring reveals that the cover of both native and nonnative plant species has changed since the removal of feral goats and pigs, but the response of individual species and vegetative communities has varied, with some species and communities exhibiting greater changes than others. Discerning long-term vegetative community trends is difficult because the vegetative community study was preceded by a wet year that likely had a strong influence on the data collected (Tierra Data Inc. 2005, p. 29). Within the few monitoring plots that included *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* occurrence counts varied among years and did not provide a clear indication of trend (Tierra Data Inc. 2005, pp. 79–80). The clearest indication of the success of feral animal removals for listed taxa was obtained from rare plant survey data (Junak and Wilken 1998, pp. 1–416, GIS data; Junak 2006, pp. 1–176, GIS data; Tierra Data Inc. 2008, pp. 1–24, appendices and GIS data; SERG 2009–2011, GIS data). These surveys have added substantially to the number of documented occurrences of each taxon.

Rare plant surveys and island flora studies have documented many more locations occupied by *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* than were known at the time of listing. Since listing, 23 additional occurrences of *A. d.* var. *traskiae,* and 10 additional occurrences of *C. grisea* have been documented (Table 1). It is unknown whether the higher number of occurrences represents detections due to increased survey efforts, recruitment from the seed bank, or recolonization by the plants as a result of management actions implemented by the Navy to conserve listed species on the island. However, this improvement in the documented status of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* suggests that feral goats and pigs were a significant threat to each. Thus, their improved status may largely be due to the implementation of a single action identified in the Recovery Plan. Because portions of the island remain closed, monitoring effectiveness of recovery efforts is not being fully implemented. Occurrences for each species, as described in the proposed rule, are closed to access for monitoring or any recovery efforts. Thus, Objective 6 cannot be fully met for the two taxa under current operational closure directives.

Summary of Recovery Plan Implementation

In summary, while the Recovery Plan does not include taxon-specific downlisting or delisting criteria for measuring the recovery of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* many of the actions identified in the Recovery Plan have been implemented to benefit these taxa. Most significantly, the Navy removed feral goats and pigs from San Clemente Island in 1992. The improvement in the documented status of each of these listed plant taxa suggests that the removal of these animals was integral to establishing vigorous, self-sustaining occurrences.

Threats are reduced in areas occupied by *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* and many of the objectives have been met in part or full for these two taxa. Additionally, the ecology and genetics of each of these taxa have been studied, and a number of programs are now in place to improve habitat suitability, prevent introductions of nonnative species, guide and track management efforts, and protect occurrences of these plant taxa. We investigated other potential threats for these taxa and concluded that they do not pose significant impacts at all occurrences. Based on our review of the Recovery Plan, we conclude that the status of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* has improved due to activities being implemented by the Navy on San Clemente Island. The effects of these activities on the status of both taxa are discussed in further detail below.

Summary of Comments and Recommendations

In the proposed rule published on May 16, 2012 (77 FR 29078), we requested that all interested parties submit written comments on the proposal by July 16, 2012. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. Newspaper notices inviting general public comment were published in the San Diego Union-Tribune. We did not receive any requests for a public hearing.

During the comment period for the proposed rule, we received two comment letters (one from a peer reviewer and one from the Navy) directly addressing the proposed reclassification of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* with threatened status. All substantive information provided during the comment period has either been incorporated directly into this final determination or addressed below.

Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinion from four knowledgeable individuals with scientific expertise that included familiarity with the two plant taxa and their habitat, biological needs, recovery efforts, and threats. We received a response from one of the peer reviewers.

We reviewed all comments received from the peer reviewer for substantive issues and new information regarding the listing of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea.* In general, the peer reviewer expressed support for reclassifying the two taxa as threatened, and supported our finding that downlisting of *Malacothamnus clementinus* is not warranted at this time. The peer reviewer also provided additional information about *A. d.* var. *traskiae,* and provided general technical and grammatical corrections. The peer reviewer expressed four comments that are addressed in the following summary and incorporated into the final rule as appropriate.

Peer Reviewer Comments

(1) *Comment:* The peer reviewer expressed agreement with our finding regarding *Malacothamnus clementinus* (downlisting not warranted), but was concerned that portions of the island are closed to biological resource managers and the effects of these closures may greatly impact the management and survival of the species. The reviewer indicated that being able to access the closed sites will be important to future determinations regarding the status of the species. The peer reviewer also expressed concern with other aspects of our discussion of *M. clementinus,* its biology, and threats.

Our Response: We agree that access to all sites supporting *Malacothamnus clementinus* occurrences for monitoring and management of the species and its habitat is a consideration for future determinations regarding the status of the plant. We will continue to work with the Navy to find ways to monitor and manage occurrences in areas that are closed to resource managers.

Because we found downlisting of *Malacothamnus clementinus* not warranted in our 2012 finding (77 FR 29078), it is not addressed in this document. However, we appreciate the peer reviewer's comments and suggestions, and will consider them when evaluating the species' status in the future.

(2) *Comment:* The peer reviewer expressed agreement with our finding regarding *Acmispon dendroideus* var. *traskiae* (downlisting is warranted). The reviewer also provided summaries of unpublished conservation genetics data for the taxon, suggesting that: (a) Hybridization is occurring between *A. d.* var. *traskiae* and *A. argophyllus* var. *argenteus,* but at a lower level than suggested in previous work by Liston *et al.* (1990); and (b) the occurrence at Wilson Cove has been modified over time by translocation of *A. d.* var. *traskiae* plants from throughout the island to that location.

Our Response: We have incorporated these data into this final downlisting rule where appropriate.

(3) *Comment:* The peer reviewer expressed agreement with our finding regarding *Castilleja grisea* (downlisting is warranted) and our proposal to downlist the species.

Our Response: We appreciate the peer reviewer's review of our finding and proposal to downlist *Castilleja grisea.*

(4) *Comment:* The peer reviewer identified technical and grammatical errors in the preamble of our finding and proposed downlisting rule.

Our Response: We thank the reviewer for these observations and we made corrections in this final downlisting rule where appropriate.

Comments From U.S. Navy

(5) *Comment:* The Navy expressed appreciation for our recommendation to downlist *Castilleja grisea* and *Acmispon dendroideus* var. *traskiae,* and encouraged us to move forward with a final downlisting rule. However, the Navy did not agree with our finding regarding *Malacothamnus clementinus* (downlisting not warranted) and explained why they believe this species should also be downlisted. They also provided additional information regarding the current status and ongoing management of *M. clementinus.*

Our Response: We thank the Navy for their review. This final rule reclassifies *Castilleja grisea* and *Acmispon dendroideus* var. *traskiae* from endangered to threatened.

On May 16, 2012, in response to a petition seeking its downlisting, the Service made a finding that downlisting was not warranted for *Malacothamnus clementinus* (77 FR 29078). The 2012 finding was finalized based upon the best available information, and it constitutes our final determination on the subject petition for that species, in accordance with section 4(b)(3)(B)(i) of the Act. *Malacothamnus clementinus* will therefore not be evaluated in this document. However, we thank the Navy for the additional information they provided, which will be considered when we evaluate the status of *M. clementinus* in the future. While not addressed in this document, we will through separate correspondence respond to the Navy's comments regarding *Malacothamnus clementinus.*

Summary of Changes From Proposed Rule

We have not made any substantive changes in this final rule, based on the comments that were received during the comment period. The two commenters were in favor of downlisting *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* (see Summary of Comments and Recommendations section above). The range of both taxa has expanded since listing, and the threats continue to be reduced through conservation actions implemented by the Navy. Therefore, as proposed, we are reclassifying *A. d.* var. *traskiae* and *C. grisea* from endangered to threatened.

Summary of Factors Affecting the Taxa

Section 4 of the Act and its implementing regulations (50 CFR 424) set forth procedures for listing species, reclassifying species, or removing species from the Federal Lists of Endangered and Threatened Wildlife and Plants. ''Species'' is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct vertebrate population segment of fish or wildlife that interbreeds when mature (16 U.S.C. 1532(16)). Once the ''species'' is determined, we then evaluate whether that species may be endangered or threatened because of one or more of the five factors described in section 4(a)(1) of the Act. Those factors are:

(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 must consider these same five factors in reclassifying or delisting a species. Listing, reclassifying, or delisting may be warranted based on any of the above threat factors, either singly or in combination. For species that are already listed as threatened or endangered, an analysis of threats is an evaluation of both the threats currently facing the species and the threats that are reasonably likely to affect the species in the foreseeable future following the delisting or downlisting.

Under section 3 of the Act, a species is ''endangered'' if it is in danger of extinction throughout all or a significant portion of its range, and is ''threatened'' if it is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. The word ''range'' refers to the range in which the species currently exists, and the word ''significant'' refers to the value of that portion of the range being considered to the conservation of the species. The ''foreseeable future'' is the period of time over which events or effects reasonably can or should be anticipated, or trends extrapolated. Based on currently available data and this analysis, the period over which we can anticipate or extrapolate trends is approximately 40 years. This determination is based on the following: We listed *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* 36 years ago. Since then, recovery has been slow, but the status of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* has improved in response to the complete removal of goats and pigs in 1992. Additionally, the Navy has worked to develop and implement management plans to reduce threats for the conservation of listed plants and their habitat on the island. As a result, we have observed an increase in the distribution and abundance of both taxa over the past 20 years. However, we anticipate military land use and other threats will continue to affect both species throughout their ranges into the future. While threats remain on the island, management plans are in place, and we now have a better understanding of how the status of these taxa and habitats may continue to recover on the island. We expect that it will take an equivalent number of years of additional monitoring to determine the effectiveness of current and planned management in reducing and ameliorating those threats and determine the species' response to those efforts. Therefore, based on currently available data and for the purposes of this analysis, we acknowledge the foreseeable future, the period over which we can anticipate effects or extrapolate trends, is approximately 40 years.

We considered and evaluated the best available scientific and commercial information for this analysis. Information pertaining to *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* in relation to the five factors provided in section 4(a)(1) of the Act is discussed below. For the purposes of this analysis, we will first evaluate whether the currently listed species should be considered threatened or endangered throughout all their ranges. If we determine that the species are threatened, then we will consider whether there are any significant portions of their ranges where they are in danger of extinction or likely to become endangered within the foreseeable future. The five factors listed under section 4(a)(1) of the Act and their applications to *A. d.* var. *traskiae* and *C. grisea* are presented below.

Acmispon dendroideus var. traskiae (San Clemente Island lotus)

In the 2007 status review, we acknowledged that the predominant threat at listing (grazing and rooting from feral herbivores) was ameliorated with the removal of goats and pigs from the island in 1992 (USFWS 2007a, pp. 1–22). Threats to *Acmispon dendroideus* var. *traskiae* identified in the 2007 status review include: (1) Erosion, (2) invasive nonnative species, (3) fire, (4) land use, (5) lack of access to SHOBA, and (6) hybridization. Impacts to habitat from erosion, nonnatives, fire, and land use are discussed below under *Factor A,* and hybridization is discussed under *Factor E* below. In 2007, lack of access to SHOBA was described as a threat because it ''can undermine the effectiveness of invasive species control programs that often rely on treatments during a particular time in an organism's life cycle'' (USFWS 2007a, p. 16). While lack of access to portions of the island still limits our ability to fully assess the status of the taxon, lack of access to SHOBA is not considered a threat. Rather, the lack of access contributes to uncertainty in assessing threats and the taxon's response to those threats and to actions taken to ameliorate threats. In this finding, we focus on threats responsible for impacting the listed entity or habitat where it occurs, not our inability to access these areas.

Factor A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The final listing rule (42 FR 40682; August 11, 1977) identified the following threats to *Acmispon dendroideus* var. *traskiae:* habitat alteration and destruction, competition from nonnative species, and direct predation caused by nonnative herbivores (goats and pigs). With the final removal of these herbivores in 1992, the vegetation on San Clemente Island has rebounded, and the status of many rare plant occurrences, including *A. d.* var. *traskiae,* has improved (Junak and Wilken 1998, p. 18; Junak 2006a, pers. comm.). Although the principle threat to *A. d.* var. *traskiae* identified in the final listing rule has been eliminated, erosion as a result of overgrazing and invasive nonnative plants are ongoing threats to habitat of *A. d.* var. *traskiae.* We also identified habitat alteration and disturbance from the Navy's use of the island for military operations and training as threats to the habitats occupied by *A. d.* var. *traskiae* in the Recovery Plan and the 2007 status review (USFWS 1984, pp. 58–63; USFWS 2007a, pp. 11, 12). Fire is an additional threat to habitat recognized since listing. Below, we discuss impacts of the following threats that affect the habitat or range of *A. d.* var. *traskiae:* (1) Land use, (2) erosion, (3) nonnative plants, and (4) fire.

Land Use

In this section we describe threats considered likely based on land use designations. At the time of listing, the Navy had acquired the island, although military operations were not intense and feral grazers were still on the island. Since listing, training activities and land use by the Navy have increased significantly. Since it was first listed in 1977, the Navy has consulted and coordinated with us regarding the effects of various activities on *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* (USFWS 2002, pp. 1–21; USFWS 2003, p. 1; USFWS 2004, pp. 1–2; USFWS 2008, pp. 1–237). These consultations have addressed numerous activities including training, fire management, the installation of wind turbines, missile tests, maintenance and construction of Ridge Road and the assault vehicle maneuver route, construction of berthing buildings, and development and use of training areas.

Most recently, training activities approved in the Military Operations and Fire Management Plan (MOFMP) include substantial increases in vehicle and foot traffic in the Infantry Operations Areas (IOA) (Navy 2008b, pp. 2–1 to 2–52). Examples of projected increases in training levels relative to a representative year of training prior to 2008 include: 11 percent increase in naval fire support exercises, 23 percent increase in land bombing exercises, 150 percent increase in explosive ordnance disposal, 60 percent increase in artillery operations, 90 percent increase in land demolitions, 19 percent increase in land navigation exercises, and 96 percent increase in SEAL platoon operations (USFWS 2008, p. 11).

We considered the status and distribution of *Acmispon dendroideus* var. *traskiae,* and the various management, avoidance, and minimization measures in place, including those the Navy will implement with the new MOFMP, in our 2008 biological opinion (we also considered impacts to *Castilleja grisea*). We concluded that ongoing and likely impacts from the proposed increases in military training activities would not jeopardize the continued existence of *A. d.* var. *traskiae* and *C. grisea* (USFWS 2008, p. 90).

Eight of 29 *Acmispon dendroideus* var. *traskiae* occurrences (28 percent) occur within SHOBA, which supports a variety of training operations involving both live and inert munitions fire (Eagle Canyon, Bryce Canyon, North Mosquito Cove, Canchalagua Canyon, Thirst Canyon, Cave Canyon, Horse Canyon, and Pyramid Head). Most of the land area of the SHOBA serves as a buffer from the Impact Areas, although military training in parts of SHOBA could result in habitat alteration due to off-highway vehicle and large-scale troop movements through the military impact and training areas (IOA and AVMA). Most of the occurrences within SHOBA are located along the eastern escarpment, which should provide a level of protection from training impacts. Large-scale troop movements are less likely in this area, because of the extreme slope of the escarpment. Training impacts may become difficult to assess and manage with the recent closure of the eastern escarpment due to unexploded ordnance.

Four of 29 *Acmispon dendroideus* var. *traskiae* occurrences (14 percent) are within or partially within the IOA and may experience direct impacts (Canchalagua Canyon, Middle Island Plateau, North Mosquito Cove, and Eagle Canyon). Nine occurrences (31 percent) are within 1,000 ft (305 m) of the IOA, and could experience diffuse or accidental impacts associated with troop movement (Upper Middle Ranch Canyon, Warren Canyon, Horton Canyon, Upper Wallrock Canyon, Tota Canyon, Lemon Tank Canyon, Larkspur Canyon, Chamish Canyon, and North Island Terraces). These areas near the IOA are at less risk of disturbance than the occurrences within the IOA, and would only be likely to sustain diffuse or accidental impacts to the habitat. While the increase in military training

could affect the taxon, the Navy through implementation of the INRMP will avoid and minimize impacts to individuals or occurrences of *A. d.* var. *traskiae* (as a rare plant taxon), to the extent practicable while meeting operational needs (Navy 2002, p. 1–2).

Because of the taxon's close proximity to Navy facilities, military activities have the potential to impact habitat at one of the largest known occurrences of *Acmispon dendroideus* var. *traskiae,* near Wilson Cove. All construction, maintenance, and training activities in the Wilson Cove area go through a site approval request process. Through this process, the areas are assessed to see if the activities will potentially impact any listed species, including *A. d.* var. *traskiae.* Part of this occurrence is within a TAR where tactical training and movement are projected to occur, possibly causing habitat damage through troop traffic (USFWS 2008, pp. 119–120). The Navy recently did work at Wilson Cove that affected *A. d.* var. *traskiae;* they assessed the impact to be a loss of habitat occupied by 50 plants. The Navy worked to salvage plant material and outplant back to the site. Thus far, this outplanting has been successful, the habitat has rebounded, and more plants are present in the area than before the work was done (Munson 2013, pers. comm.).

The majority of *Acmispon dendroideus* var. *traskiae* occurrences (24 of 29 occurrences, 83 percent) are located outside of heavily impacted training areas. Though five occurrences (17 percent; Wilson Cove, Canchalagua Canyon, Middle Island Plateau, North Mosquito Cove, and Eagle Canyon) are partially or wholly within the boundaries of an IOA or TAR, many of the impacts to these occurrences would be diffuse, and are unlikely to have a high impact on the species' habitat. Although land use is likely to impact *A. d.* var. *traskiae* habitat, the Navy has demonstrated its commitment to help conserve and manage listed species on the island. Land use appears to pose a high-magnitude threat to the habitat of a small percentage of the occurrences of *A. d.* var. *traskiae* on San Clemente Island.

Erosion

Erosion and associated soil loss caused by browsing of feral goats and rooting of feral pigs likely modified the island's habitat (Navy 2002, p. 1–14). Defoliation from overgrazing on San Clemente Island increased erosion over much of the island, especially on steep slopes where denuded soils can quickly wash away during storm events (Johnson 1980, p. 107; Navy 2002, pp. 1–14, 3–9; Tierra Data Inc. 2007, pp. 6–7). Erosion was identified in the INRMP as a threat to the canyon woodland habitat and maritime desert scrub where *Acmispon dendroideus* var. *traskiae* occurs (Navy 2002, p. 4–3). Gullying and other processes may concentrate surface runoff to unnatural levels, leading to accelerated erosion in the canyons below (Tierra Data Inc. 2007, p. 6). *Acmispon dendroideus* var. *traskiae* occurs within steep canyon areas where such concentration of flows may be a threat to its habitat or range.

Although more vegetative cover is now present than at the time of listing, erosion is still a threat to the recovery of *Acmispon dendroideus* var. *traskiae,* especially in areas where it grows in close proximity to roads. The Navy studied the potential for erosion from several proposed military activities (Tierra Data Inc. 2007, pp. 1–45, Appendices). Increased military activities are expected to cause erosion through soil compaction or other soil disturbances in occupied habitat areas associated with roadways or vehicle maneuver areas, especially where the taxon is located within training area boundaries (IOA) (Tierra Data Inc. 2007, p. 12). The four *A. d.* var. *traskiae* occurrences within or partially within the IOA are likely to be further impacted by erosion (Table 1). Three of these occurrences (Canchalagua Canyon, North Mosquito Cove, and Eagle Canyon) are along the eastern escarpment, which has recently been closed to biological monitoring due to unexploded ordnance. The threat of erosion to this area will be difficult to assess if the closure remains into the future. The nine occurrences near the IOA (within 1,000 ft (305 m)) could experience erosion from nearby training activities.

Roads can concentrate water flow causing incised channels and erosion of slopes (Forman and Alexander 1998, pp. 216–217). This increased erosion around roads can degrade habitat, especially along the steep canyons associated with the eastern escarpment of the island. Nine of 29 *Acmispon dendroideus* var. *traskiae* occurrences (31 percent) are within 500 ft (152 m) of a road on the island (Eel Cove Canyon, Seal Cove Terraces, Lemon Tank Canyon, Wilson's Cove, North Wilson's Cove, Upper Middle Ranch Canyon, Eagle Canyon, North Mosquito Cove, and Canchalagua Canyon) (Forman and Alexander 1998, p. 217). These occurrences could be subject to diffuse disturbance and road effects that degrade habitat quality. The largest known occurrence of *A. d.* var. *traskiae,* Wilson Cove, occurs on gradual or steep slopes where erosion is evident (USFWS 2008, p. 117). Military activities in this area have the potential to adversely affect the taxon's habitat due to its proximity to Navy facilities and the level of human activity and traffic in the area.

The Navy incorporates erosion control measures into all site-feasibility studies and project planning, design, and construction to minimize the potential to exacerbate existing erosion and avoid impacts to listed species (Munson 2013, pers. comm.). The INRMP requires that all projects include erosion conservation work and associated funding (Navy 2002, p. 4–89). These conservation actions include best management practices for construction and engineering, choosing sites that are capable of sustaining disturbance with minimum soil erosion, and stabilizing disturbed sites with native plants (Navy 2002, pp. 4–89—4–91). Additionally, the Navy has agreed not to conduct training activities that may lead to impacts from erosion until an erosion control plan is successfully implemented. They are developing the erosion control plan for San Clemente Island to reduce the impacts of erosion to *Acmispon dendroideus* var. *traskiae* habitat in areas likely to experience increased and expanded military operations (Munson 2013, pers. comm.). This erosion control plan will address military operations associated with the IOA, Assault Vehicle Maneuver Area (AVMA), and Artillery Firing Point (AFP).

The processes and results of erosion are threats to the habitat of *Acmispon dendroideus* var. *traskiae,* particularly to 17 of 29 occurrences that are within an IOA, within 1,000 ft (305 m) of an IOA, or within 500 ft (152 m) of a road. Erosion may lead to overall habitat degradation and the loss of individuals or groupings of plants in a given area. However, this taxon has persisted despite current levels of erosion. The processes and results of erosion are island-wide threats to the habitat or range of *A. d.* var. *traskiae,* particularly to the 17 occurrences in or adjacent to military training areas or roads. Therefore, erosion is still considered a threat to the habitat of *A. d.* var. *traskiae.*

Nonnative Species

Spread of nonnative plants into *Acmispon dendroideus* var. *traskiae* habitat is another threat identified in the final listing rule (42 FR 40682). Nonnative plants can diminish the abundance or survival of native species by altering natural ecosystem processes such as fire regimes, nutrient cycling,

hydrology, and energy budgets, and by competing with native plants for water, space, light, and nutrients (Zink *et al.* 1995, p. 307; Brooks 1999, pp. 16–17; Mack *et al.* 2000, p. 689). By 1992, researchers had documented 99 nonnative plant species on San Clemente Island (Kellogg and Kellogg 1994, p. 5), and transfer of nonnative species to the island continues to be a problem (Dunn 2006, pers. comm.; Junak 2006b, pers. comm.; Kellogg 2006, pers. comm.; O'Connor 2009c, pers. comm.).

Nonnative species of particular concern include *Avena barbata* (slender oat), *Bromus* spp. (bromes), *Foeniculum vulgare* (sweet fennel), and *Brassica tournefortii* (Sahara mustard), which have already invaded the habitat of most *Acmispon dendroideus* var. *traskiae* occurrences. Another nonnative species, *Carpobrotus edulis* (iceplant), also appears to be hindering the recovery of *A. d.* var. *traskiae* (Allan 1999, p. 92). This nonnative species occupies large areas of Wilson Cove where it may alter the habitat (Allan 1999, p. 92) by changing vegetation structure and creating an environment less hospitable to *A. d.* var. *traskiae.* Since nonnative herbivores were removed from the island, the most significant structural alteration to the habitat has been the proliferation of nonnative annual grasses, such as *Avena* spp. (oats), *Bromus* spp., and *Vulpia myuros* (annual fescue). Annual grasses vary in abundance with rainfall, potentially changing the vegetative community from shrubs to grasses and increasing the fuel load in wet years (see Factor A—Fire section below).

Although previous invasions of nonnatives probably occurred through introductions in grazing fodder, current nonnative species invasions are typically introduced by military activities and training on the island. Nonnative plants constitute a rangewide threat to the habitat of all native plants on San Clemente Island, including all occurrences of *Acmispon dendroideus* var. *traskiae.* Roadsides tend to provide conditions (high disturbance, seed dispersal from vehicles, ample light and water) preferable to nonnative species (Forman and Alexander 1998, p. 210). The nine occurrences within 500 ft (152 m) of roads on the island may be subject to diffuse disturbance and road effects that degrade habitat quality along the road, including impacts caused by nonnative plants species (Forman and Alexander 1998, p. 217).

Potential impacts from nonnative plants to habitats on San Clemente Island are minimized through annual implementation of the Navy's island-wide nonnative plant control program (O'Connor 2009b, pers. comm.; Munson 2013, pers. comm.). The focus of the nonnative plant species program is to control plants on the island with the potential to adversely impact habitat of federally listed species, which includes eradication of isolated occurrences of nonnatives, and early detection and eradication of new nonnative species (Navy 2008b, p. 5–28). This program targets nonnative species for elimination using herbicide and mechanical removal, with priorities currently focused on new invasions and particularly destructive nonnative species. Nonnative species management targets are identified and prioritized annually by Navy natural resource managers (Munson 2013, pers. comm.). These tactics are successful in isolating and limiting some species, such as *Foeniculum vulgare,* to a few locations (Howe 2011, pers. comm.; Munson 2013, pers. comm.). To reduce the potential for transport of nonnative plants to San Clemente Island, military and nonmilitary personnel inspect tactical ground vehicles and remove any visible plant material, dirt, or mud prior to transporting the vehicles to San Clemente Island (USFWS 2008, p. 63). This cleaning helps prevent nonnative plants from reaching the island, but once there, nonnative plants are easily spread from one area to another by the movement of vehicles.

Acmispon dendroideus var. *traskiae* has persisted on the island and, despite the continued risk of encroachment to habitat by nonnatives, the range of this taxon has expanded from 6 to 29 occurrences since listing. Impacts from nonnative plants may be a persistent, but low-level, threat to *A. d.* var. *traskiae* habitat.

Fire

Fire was not considered a threat to habitat occupied by *Acmispon dendroideus* var. *traskiae* at the time of listing (42 FR 40682; August 11, 1977). Since that time, however, over 50 percent of the island has experienced at least one wildfire (Navy 2002, Map 3–3, p. 3–32), and some habitat has burned multiple times with very short intervals between fires (Navy 2002, Map 3–4, p. 3–33). Between 1990 and 2004, the island experienced 114 wildfires suspected to be from Navy operational sources (Navy 2008a, pp. 5–18, 5–19). The majority of fires are concentrated in SHOBA, potentially impacting habitat occupied by eight occurrences within Impact Areas I and II where military training exercises employ live ordnance and incendiary devices (Eagle Canyon, Bryce Canyon, North Mosquito Cove, Canchalagua Canyon, Thirst Canyon, Cave Canyon, Horse Canyon, and Pyramid Head). Fires are also occasionally ignited by activities north of SHOBA, such as training activities near Eel Point (possibly impacting Seal Cove Terraces and Eel Cove Canyon occurrences) (Navy 2002, Map 3–4, p. 3–33).

Increased fire frequency resulting from intensified military uses could lead to localized changes in vegetation on San Clemente Island, which could be detrimental to *Acmispon dendroideus* var. *traskiae* habitat. The Navy recently approved a significant expansion in the number of locations where live fire and demolition training will take place (Navy 2008a, pp. 2–3—2–38), including TAR north of SHOBA (TAR 17—Eel Cove Canyon and Seal Cove Terraces, and TAR 14 and 15—Larkspur and Chamish Canyon). These higher levels of training have not occurred in recent history, and will likely expand from current levels. In addition to demolitions, certain proposed munitions exercises involve the use of incendiary devices, such as illumination rounds, white phosphorous, and tracer rounds, which pose a high risk of fire ignition. Additionally, smoke, flares, and pyrotechnics are proposed for use within TAR 11 (Wilson's Cove) toward the eastern shore, and expanded live fire and demolition training is proposed within TAR 16 (Middle Island Plateau) toward the center of the island. It is likely that the fire pattern on the island will change in response to this increase in ignition sources, with fires becoming more common within and adjoining the training areas north of SHOBA.

At the time of listing, fire was not identified as a habitat threat because of lack of fire history and the low intensity of military training on the island. Since that time, military training has significantly increased, and we have better records of the fire frequency on the island. Approximately 14 of the 29 occurrences of *Acmispon dendroideus* var. *traskiae* fall within areas that may be subject to recurrent fire associated with military training (Table 1). This includes locations that fall within 1,000 ft (305 m) of TAR, where the Navy conducts live fire and demolition training, and occurrences within SHOBA (SHOBA serves as a buffer for Impact Areas I and II). Fires that escape designated training areas may threaten habitat on other parts of the island, but because of the broad distribution of the species, one fire is unlikely to spread throughout the entire range. The Navy's implementation of the MOFMP will limit the frequency with which fires escape impact areas and TAR. Through

the annual review process, the Navy identifies mechanisms to reduce fire return intervals within areas where this taxon is concentrated (USFWS 2008, pp. 91–122). The Navy's implementation of an MOFMP will help to reduce the risk of habitat conversion by fire, although the habitat of *A. d.* var. *traskiae* could be altered by increased fire frequency and spread of nonnative grass. Although the threat is ameliorated through the MOFMP, fire remains an island-wide threat to *A. d.* var. *traskiae* habitat, particularly to the 14 occurrences that fall within areas that may be subject to recurrent fire associated with military training.

Summary of Factor A

San Clemente Island was used for sheep ranching, cattle ranching, goat grazing, and pig farming from 1850 until 1934 (Navy 2002, pp. 3–4). These grazers were not completely removed from the island until 1992, and their effects on the taxon and its habitat as well as other threats led us to classify *Acmispon dendroideus* var. *traskiae* as endangered in the 1977 listing rule (42 FR 40682). Currently, *A. d.* var. *traskiae* habitat is threatened by destruction and modification caused by land use, erosion, nonnative plants, and fire. To help reduce these threats, the Navy is implementing an MOFMP, an INRMP, and an island-wide nonnative species control program (Navy 2002, pp. 1–1—8–12; USFWS 2008, pp. 1–237). The MOFMP has been helpful in informing strategic decisions for training using live fire or incendiary devices. The Navy has also agreed not to conduct training activities that may lead to impacts from erosion until an erosion control plan is successfully implemented. Natural resource managers have been successful in decreasing the prevalence of particularly destructive nonnatives, such as *Foeniculum vulgare.* Though increased impacts associated with military training could threaten the taxon in the future, 24 of 29 occurrences (83 percent) of *A. d.* var. *traskiae* fall outside of training areas (IOA or TAR) where the most intensive habitat disturbances are likely to occur. Impacts to the habitat from land use, erosion, nonnative plants, and fire are ongoing, and though they have been reduced due to the expanded range of *A. d.* var. *traskiae* and conservation efforts discussed above, we expect these threats will continue to impact *A. d.* var. *traskiae* habitat now and in the future as recovery of the taxon and its habitat continues.

Factor B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

In the listing rule (42 FR 40682; August 11, 1977), we did not identify any threats from overutilization, and no new information indicates that overutilization is a threat to *Acmispon dendroideus* var. *traskiae.* Although voucher herbarium specimens of *A. d.* var. *traskiae* and seeds have been collected for research and seed banking, overutilization of *A. d.* var. *traskiae* for any purpose is not currently considered a threat nor is expected to be in the future.

Factor C. Disease or Predation

Grazing of feral goats and rooting of feral pigs were considered a direct threat to *Acmispon dendroideus* var. *traskiae* in the final listing rule (42 FR 40682; August 11, 1977). As stated above, however, nonnative mammalian herbivores were removed from San Clemente Island by 1992, and this threat was ameliorated, as recognized in our 2007 status review (USFWS 2007a, p. 13). Currently, no other predators or diseases on San Clemente Island are known to pose a significant threat to *A. d.* var. *traskiae* and none are expected to pose a threat in the future.

Factor D. Inadequacy of Existing Regulatory Mechanisms

The Act requires us to examine the adequacy of existing regulatory mechanisms with respect to those existing and foreseeable threats that may affect *Acmispon dendroideus* var. *traskiae.* The inadequacy of existing regulatory mechanisms was not considered a threat to *A. d.* var. *traskiae* at listing (42 FR 40682; August 11, 1977). Since it was listed as endangered, the Act has been and continues to be the primary Federal law that affords protection to *A. d.* var. *traskiae.* Our responsibilities in administering the Act include sections 7, 9, and 10.

Section 7(a)(1) of the Act requires all Federal agencies, including the Navy, to utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of endangered and threatened species. Section 7(a)(2) of the Act requires Federal agencies, including the Navy and us, to ensure that actions funded, authorized, or carried out do not ''jeopardize'' the continued existence of a listed species. Section 7(a)(2) of the Act also requires Federal agencies to ensure that such actions do not result in the destruction or adverse modification of habitat in areas designated as critical habitat; however, we have not designated or proposed critical habitat for this taxon.

The section 7(a)(2) prohibition against jeopardy applies to plants as well as animals, but other protections of the Act are more limited for plant species. Section 9(a)(2) does not prohibit the taking of a protected plant, thus no incidental take statement is prepared in the analysis of effects associated with a project. A non-jeopardy opinion for plants, therefore, would not include reasonable and prudent measures to minimize the impact of incidental take. However, voluntary conservation recommendations may be included, which are discretionary actions the action agency can implement relevant to the proposed action.

Under section 9(a)(2) of the Act, with respect to endangered plant taxa, it is unlawful to remove and reduce to possession (collect) any endangered plants from areas under Federal jurisdiction, or to maliciously damage or destroy endangered plants in any such area. Protections provided plants listed as threatened are the same, except that the Code of Federal Regulations stipulates protections are not extended to seeds of cultivated specimens of threatened plants (50 CFR 17.71). This change in protections would not have an effect on the conservation of *Acmispon dendroideus* var. *traskiae,* because conservation of this taxon does not require protection for seeds of cultivated plants.

The Navy has consulted and coordinated with us regarding the effects of various activities on *Acmispon dendroideus* var. *traskiae* (and *Castilleja grisea*) since they were first listed in 1977. We concluded that ongoing and likely impacts from the proposed increases in military training activities on the island would not jeopardize the continued existence of *A. d.* var. *traskiae* or *C. grisea* (USFWS 2008, pp. 1–237). We continue to coordinate with the Navy to protect these taxa and their habitats.

Listing *Acmispon dendroideus* var. *traskiae* provided a variety of protections, including the prohibitions against removing or destroying plants within areas under Federal jurisdiction and the conservation mandates of section 7 for all Federal agencies. These protections would continue to be afforded to *A. d.* var. *traskiae* if it is downlisted. In the following discussion, we evaluate additional protections provided by other regulatory mechanisms to determine whether they effectively reduce or remove threats to *A. d.* var. *traskiae.*

Other Federal Protections

National Environmental Policy Act (NEPA)

All Federal agencies are required to adhere to the National Environmental Policy Act (NEPA) of 1970 (42 U.S.C. 4321 *et seq.*) for projects they fund, authorize, or carry out. The Council on Environmental Quality's regulations for implementing NEPA (40 CFR parts 1500–1518) state that agencies shall include a discussion on the environmental impacts of the various project alternatives (including the proposed action), any adverse environmental effects that cannot be avoided, and any irreversible or irretrievable commitments of resources involved (40 CFR part 1502). NEPA itself is a disclosure law, and does not require subsequent minimization or mitigation measures by the Federal agency involved. Although Federal agencies may include conservation measures for *Acmispon dendroideus* var. *traskiae* as a result of the NEPA process, any such measures are typically voluntary in nature and are not required by the statute. NEPA does not itself regulate activities that might affect *A. d.* var. *traskiae,* but it does require full evaluation and disclosure of information regarding the effects of contemplated Federal actions on sensitive species and their habitats. On San Clemente Island, the Navy must meet the NEPA requirements for actions significantly affecting the quality of the human environment. Typically, the Navy prepares Environmental Assessments and Environmental Impact Statements on operational plans and new or expanding training actions. Absent the listing of *A. d.* var. *traskiae,* we would expect the Navy to continue to meet the procedural requirements of NEPA for its actions, including evaluating the environmental impacts to rare plant species and other natural resources. However, as explained above, NEPA does not itself regulate activities that might affect species listed as endangered or threatened under the Act.

Sikes Act Improvement Act (Sikes Act)

The Sikes Act (16 U.S.C. 670) authorizes the Secretary of Defense to develop cooperative plans with the Secretaries of Agriculture and the Interior for natural resources on public lands. The Sikes Act Improvement Act of 1997 requires Department of Defense installations to prepare INRMPs that provide for the conservation and rehabilitation of natural resources on military lands consistent with the use of military installations to ensure the readiness of the Armed Forces. An INRMP is a plan intended ''. . . to guide installation commanders in managing their natural resources in a manner that is consistent with the sustainability of those resources while ensuring continued support of the military mission'' (Navy 2002, p. 1–1). INRMPs are developed in coordination with the State and the Service, and are generally updated every 5 years. Although an INRMP is technically not a regulatory mechanism because its implementation is subject to funding availability, it is an important guiding document that helps to integrate natural resource protection with military readiness and training.

San Clemente Island Integrated Natural Resources Management Plan (INRMP)

Pursuant to the Sikes Act, the Navy adopted an INRMP for San Clemente Island that identifies multiple objectives for protecting *Acmispon dendroideus* var. *traskiae* and its habitat to help to reduce threats to this taxon (Navy 2002). The INRMP discloses actions through the NEPA process and to comply with such legislation and regulations as the Endangered Species Act, Federal Noxious Weed Act of 1974 (7 U.S.C. 2801), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601), the Resource Conservation and Recovery Act (42 U.S.C. 6901), and Soil Conservation Act (16 U.S.C. 3B).

Goals and objectives in the INRMP for specified management units on the island are identified based on each unit's ranking for both military and natural resource value. Natural resource management objectives for the management units are stepped down from broader natural resource objectives identified for species and habitats. Natural resource objectives of relevance to the protection of *A. d.* var. *traskiae* in the INRMP include: ''Protect, monitor, and restore plants and cryptograms in order to manage for their long-term sustainability on the island'' (Navy 2002, p. 4–39).

The INRMP specifically includes the following objectives for *Acmispon dendroideus* var. *traskiae* management: removal of nonnatives, restoration of native grasses and scrub species, monitoring of the taxon, studies of response to fire, and studies and inventory of insect pollinators (Navy 2002, p. D–11). To date, multiple INRMP management strategies have been implemented for the conservation of *A. d.* var. *traskiae.* Other INRMP strategies that target the plant communities within which this taxon occurs include: controlling erosion, with priority given to locations where erosion may be affecting listed species; producing a new vegetation map; reducing nonnative plant cover from 1992–1993 baseline levels; managing the size and intervals of fires; experimenting with fire management to improve native plant dominance while protecting sensitive plant occurrences; and conducting genetic and biological studies of *A. d.* var. *traskiae* and *Castilleja grisea* across the island.

To date, the Navy has implemented multiple INRMP management strategies, or aspects of them that benefit both taxa. They have implemented rare plant surveys and documented new occurrences of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* on the island. Genetic research and natural history studies have also been performed. The Navy has made concerted efforts to control escape of fire from military training activities, and they have annually implemented nonnative plant species control activities, with a focus on species that have the potential to compete with listed species (O'Connor 2009b, pers. comm.; Munson 2013, pers. comm.). Overall, considerable progress has been made toward the identified INRMP goals to maintain sustainable occurrences and implement strategies that help reduce threats to *A. d.* var. *traskiae* and *C. grisea.*

The INRMP is an important guiding document that helps to integrate the military's mission with natural resource protection on San Clemente Island. Although the INRMP includes objectives targeted toward habitat protection of optimal *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* habitat, the Navy's operational needs may diverge from INRMP natural resource goals. For example, control measures for erosion, fire, and nonnatives described in the INRMP may not be implemented effectively or consistently in those areas that are operationally closed due to the presence of unexploded ordnance. The MOFMP, Erosion Control Plan, and nonnative plant species control conducted on the island are discussed above under *Acmispon dendroideus* var. *traskiae —Factor A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range.* The INRMP provides protection to covered taxa whether they are listed as endangered or threatened under the Act, and additionally covers taxa that are not listed, but require special management. However, as noted under the other factors, while the INRMP helps to ameliorate threats and provides some protection for *A. d.* var. *traskiae* occurrences, those occurrences within Impact Areas or operationally closed

areas may not benefit from the conservation measures. While the INRMP has reduced the severity of threats and contributed to conservation of the species, it still allows for land use consistent with military readiness and training. Thus, Navy activities will continue to impact *A. d.* var. *traskiae* as described under Factor A.

The Navy is currently revising the 2002 INRMP, and future iterations of this plan may differ from the existing INRMP. Pending completion of the new INRMP, the Navy continues to implement the 2002 INRMP. We expect that the revised INRMP will continue to manage for natural resource conservation to the maximum extent practicable based on the Navy's historical commitment to implement beneficial management actions for native flora and fauna, and their continued cooperation with the Service to provide conservation actions that benefit taxa such as *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* and their habitat.

Federal Noxious Weed Act

The Federal Noxious Weed Act of 1975 (88 Stat. 2148, 7 U.S.C. 2801) established a Federal program that has subsequently been largely superseded by other statutes, including the Plant Protection Act (7 U.S.C. 7701, et seq.), to control the spread of noxious weeds. The 1990 amendment to the Federal Noxious Weed Act (7 U.S.C. 2814), has been retained, and requires each Federal land-managing agency to: designate an office or person adequately trained in managing undesirable plant species to develop and coordinate a program to control such plants on the agency's land; establish and adequately fund this plant management program through the agency's budget process; complete and implement cooperative agreements with the States regarding undesirable plants on agency land; and establish integrated management systems (as defined in the section) to control or contain undesirable plants targeted under the cooperative agreements. In accordance with this direction, the Navy (through implementation of their INRMP) works to control the introduction of nonnative plant species to the island and to control or remove those currently present, which are actions that assist in protecting *Acmispon dendroideus* var. *traskiae* habitat.

Soil Conservation and Domestic Allotment Act

The Soil Conservation and Domestic Allotment Act of 1935 (16 U.S.C. 590(a, b), 49 Stat. 163) recognized that the wastage of soil and moisture resources on farm, grazing, and forest lands of the Nation, resulting from soil erosion, is a menace to the national welfare. The Act further provided for the control and prevention of soil erosion to preserve natural resources, control floods, prevent impairment of reservoirs, and maintain the navigability of rivers and harbors, protect public health and public lands, and relieve unemployment, and authorized the Secretary of Agriculture to coordinate and direct all activities with relation to soil erosion. In order to effectuate this policy, the Secretary of Agriculture authorizes, from time to time, that the following actions may be performed on lands owned or controlled by the United States or any of its agencies, with the cooperation of the agency having jurisdiction: Conduct surveys, investigations, and research relating to the character of soil erosion and the preventive measures needed; publish the results of any such surveys, investigations, or research; disseminate information concerning such methods; conduct demonstrational projects in areas subject to erosion by wind or water; and carry out preventative measures, including, but not limited to, engineering operations, methods of cultivation, the growing of vegetation, and changes in use of land. These measures are addressed through various objectives outlined in the Navy's INRMP, and implementation of these measures assist *Acmispon dendroideus* var. *traskiae* by encouraging management actions that prevent and control erosion, thus protecting *Acmispon dendroideus* var. *traskiae* habitat.

State Protections

Since the time of listing, *Acmispon dendroideus* var. *traskiae* has benefited from additional State protections under the Native Plant Protection Act (NPPA) and California Endangered Species Act (CESA; listed 1982). Both the NPPA and CESA include prohibitions forbidding the ''take'' of State-listed species (California Fish & Game Code, Sections 1908 and 2080). With regard to prohibitions of unauthorized take under NPPA, landowners are exempt from this prohibition for plants to be taken in the process of habitat modification. Where landowners are notified by the State that a rare or endangered plant is growing on their land, the landowners are required to notify CDFW 10 days in advance of changing land use in order to allow salvage of listed plants (California Fish & Game Code, Section 1913). Sections 2081(b) and (c) of CESA allow CDFW to issue incidental take permits for State-listed threatened and endangered species if:

(1) The authorized take is incidental to an otherwise lawful activity;

(2) The impacts of the authorized take are minimized and fully mitigated;

(3) The measures required to minimize and fully mitigate the impacts of the authorized take are roughly proportional in extent to the impact of the taking on the species, maintain the applicant's objectives to the greatest extent possible, and are capable of successful implementation;

(4) Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and

(5) Issuance of the permit will not jeopardize the continued existence of a State-listed species.

However, the range of *Acmispon dendroideus* var. *traskiae* is restricted to a Federal military installation, so listing under NPPA and CESA may afford protection to this species only in rare instances when the lead agency is a non-Federal agency or when proposed activities fall under other State laws.

Summary of Factor D

The inadequacy of existing regulatory mechanisms was not indicated as a threat to *Acmispon dendroideus* var. *traskiae* at the time of listing or in the recent status review. Because San Clemente Island is under Federal ownership, various laws, regulations, and policies administered by the Federal Government provide protective mechanisms for the species and its habitat. Primary Federal laws that provide some benefit for the species and its habitat include the Act, NEPA, Sikes Act, Federal Noxious Weed Act, and the Soil Conservation and Domestic Allotment Act.

The regulatory mechanisms outlined above help to reduce threats for the conservation of *Acmispon dendroideus* var. *traskiae.* In continuance of a long history of cooperative conservation efforts, the Navy implements several conservation actions that benefit this plant taxon. The Navy has implemented an MOFMP to reduce the risk of fire on the island and a nonnative plant species control program. In response to the conservation actions proposed and the current status of the listed taxon, we issued a non-jeopardy biological opinion on the Navy's MOFMP. The provisions included in the San Clemente Island INRMP provide for protection of *A. d.* var. *traskiae* occurrences and adaptive management of its habitat in order to help address threats to the plant from military

activities and nonnative plants. Implementation may not be extended to occurrences in operationally closed areas, but only three occurrences of the taxon occur in these areas. *Acmispon dendroideus* var. *traskiae* occurrences are afforded protection through Federal mechanisms, and thus the inadequacy of existing regulatory mechanisms is not considered a current threat to the taxon. However, the Act is the primary law providing protection to this taxon; in the absence of the Act, the existing regulatory mechanisms are not adequate to conserve *A. d.* var. *traskiae* throughout its range.

Factor E. Other Natural or Manmade Factors Affecting Its Continued Existence

The 1977 listing rule identified nonnatives as a threat to *Acmispon dendroideus* var. *traskiae* under Factor E (42 FR at 40684; August 11, 1977). In this 5-factor analysis, impacts from nonnative plants are discussed above under *Factor A* as a threat to habitat. Other threats attributable to Factor E that have been identified since listing include: (1) Movement of vehicles and troops, (2) fire, (3) climate change, and (4) hybridization. Factor E addresses threats to individuals of the species, rather than the habitat modification threats that are discussed in Factor A. Therefore, while some threats are discussed in both sections, in this section we are focusing on the direct impacts to individuals of *A. d.* var. *traskiae.*

Movement of Vehicles and Troops

Military training activities within SWAT, TAR, and the IOA often entail the movement of vehicles and troops over the landscape, which has the potential of trampling or crushing individual plants. SWATs are large areas that typically support the movement of small groups to reach an objective or destination. The dispersed movement of troops through these areas is likely to result in occasional trampling of plants, with minor or temporary impacts at the occurrence level. TARs are generally smaller areas designated to accommodate intensive use and bombardment. Plants located within TARs are, therefore, more vulnerable to being trampled by vehicle and troop movements, particularly as the level of military training increases in these areas.

Use of the IOA, at its highest intensity, involves the movement of battalion-sized landings of troops (1,500 individuals) from the northern to southern end of the island several times a year (Navy 2008b, pp. 2–1 to 2–52). During such operations, the Navy anticipates that about half of the troops will travel on roads in vehicles, while the other half will proceed on foot (Navy 2008b, pp. 2–1 to 2–52). Thirteen occurrences of *A. d.* var. *traskiae* are partially or wholly within the boundaries of a training area (IOA, TAR, or SWAT). Loss of individual plants from proposed increases in troop and vehicle movements within SWAT, TAR, and the IOA is likely to increase, though this will not significantly impact the survival and recovery of this taxon because of the diffuse nature of this threat and the location of much of the taxon along the eastern escarpment, away from military training activities (USFWS 2008, pp. 113–122). Based on the distribution of *Acmispon dendroideus* var. *traskiae* occurrences, and type of troop movements likely to occur, impacts due to trampling and crushing are considered a low-level threat to its long-term persistence.

Fire

Although not specifically mentioned in the listing rule, intense or frequent fires threaten individuals at 14 of 29 (48 percent) of *Acmispon dendroideus* var. *traskiae* occurrences. In the *Factor A* discussion above, we addressed impacts of fire on the habitat. This section covers the discrete threat to individuals or occurrences of *A. d.* var. *traskiae.* It is unknown if *A. d.* var. *traskiae* is adapted to periodic fires, though it is likely that this taxon is resilient to occasional fires (Navy 2002, p. D–10; Tierra Data Inc. 2005, p. 80). Adult plants have been lost in fires, but subsequent recruitment from the seed bank resulted in replacement numbers of juvenile plants (Tierra Data Inc. 2005, p. 80). Aside from this observation, the relationship between fire and the life history of *A. d.* var. *traskiae* has not been adequately studied. Additionally, the taxon's tolerance to fire frequency is unknown. The seed bank may become depleted in areas that burn more frequently if individuals burn before they produce seeds. Although an individual plant has the ability to produce vast amounts of seed, the seed bank must be replenished regularly for the taxon to persist (Junak and Wilken 1998, p. 257).

Acmispon dendroideus var. *traskiae* occurs in some areas of the island that may experience elevated fire frequency, such as in SHOBA and surrounding Eel Point (Eagle Canyon, Bryce Canyon, North Mosquito Cove, Canchalagua Canyon, Thirst Canyon, Cave Canyon, Horse Canyon, Pyramid Head, Seal Cove Terraces, and Eel Cove Canyon) (discussed in *A. d.* var. *traskiae—Factor A*). Increased fire frequency from intensified military use could also lead to localized changes in vegetation, resulting in indirect adverse effects on *A. d.* var. *traskiae.* The potential for frequent fire at many of the occurrences within SHOBA is reduced by their location on the eastern escarpment of the island, away from Impact Areas I and II. However, this threat may become difficult to assess with the recent closure of the eastern escarpment area due to unexploded ordnance. The Navy's fire management practices are anticipated to minimize frequency of ignitions as well as the spread of fires (as described above in *Factor A*).

The Navy conducts annual reviews of fire management and fire occurrence that allow for adaptive management. While the threat of fire remains, these measures should minimize loss of individuals or occurrences of *Acmispon dendroideus* var. *traskiae.* At the present time, fire management does not pose a threat as fuelbreak locations have not been proposed in the vicinity of this taxon. Although the Navy has planned and implemented fire management, fire continues to threaten 14 occurrences of *A. d.* var. *traskiae.* Due to the continued impacts of fire within SHOBA, fire remains a Factor E threat to the existence of *A. d.* var. *traskiae.*

Climate Change

Consideration of climate change is a component of our analyses under the Endangered Species Act, and applies to our analysis of both taxa. In general terms, ''climate change'' refers to a change in the state of the climate (whether due to natural variability, human activity, or both) that can be identified by changes in the mean or variability of its properties, and that persists for an extended period—typically decades or longer (Intergovernmental Panel on Climate Change (IPCC) 2007a, p. 78).

Changes in climate are occurring. Examples include warming of the global climate system over recent decades, and substantial increases in precipitation in some regions of the world and decreases in other regions (for these and other examples see IPCC 2007a, p. 30; Solomon *et al.* 2007, pp. 35–54, 82–85).

Most of the observed increase in global average temperature since the mid-20th century cannot be explained by natural variability in climate, and is very likely due to the observed increase in greenhouse gas concentrations in the atmosphere as a result of human activities, particularly emissions of carbon dioxide from fossil fuel use (IPCC 2007a, p. 5 and Figure SPM.3; Solomon *et al.* 2007, pp. 21–35).

Therefore, to project future changes in temperature and other climate conditions, scientists use a variety of climate models (which include consideration of natural processes and variability) in conjunction with various scenarios of potential levels and timing of greenhouse gas emissions (e.g., Meehl *et al.* 2007 entire; Ganguly *et al.* 2009, pp. 11555, 15558; Prinn *et al.* 2011, pp. 527, 529).

The projected magnitude of average global warming for this century is very similar under all combinations of models and emissions scenarios until about 2030. Thereafter, the projections show greater divergence across scenarios. Despite these differences in projected magnitude, however, the overall trajectory is one of increased warming throughout this century under all scenarios, including those which assume a reduction of greenhouse gas emissions (Meehl *et al.* 2007, pp. 760–764; Ganguly *et al.* 2009, pp. 15555–15558; Prinn *et al.* 2011, pp. 527, 529). (For examples of other global climate projections, see IPCC 2007b, p. 8).

Various types of changes in climate can have direct or indirect effects on species and these may be positive or negative depending on the species and other relevant considerations, including interacting effects with existing habitat fragmentation or other nonclimatic variables. Vulnerability to climate change has three main components: Exposure to changes in climate, sensitivity to such changes, and adaptive capacity (IPCC 2007a, p. 89; Glick *et al* 2011, pp. 19–22). Because aspects of these components can vary by species and situation, as can interactions among climatic and nonclimatic conditions, there is no single way to conduct our analyses. We use the best scientific and commercial data available to identify potential impacts and responses by species that may arise in association with different components of climate change, including interactions with nonclimatic conditions.

As is the case with all potential threats, if a species is currently affected or is expected to be affected in a negative way by one or more climate-related impacts, this does not necessarily mean the species meets the definition of a threatened or endangered species as defined under the Act. The impacts of climate change and other conditions would need to be to the level that the species is in danger of extinction, or likely to become so, throughout all or a significant portion of its range. If a species is listed as threatened or endangered, knowledge regarding the species' vulnerability to, and impacts from, climate-associated changes in environmental conditions can be used to help devise appropriate strategies for its recovery.

While projections from global climate model simulations are informative and in some cases are the only or the best scientific information available, various downscaling methods are being used to provide higher-resolution projections that are more relevant to the spatial scales used to assess impacts to a given species (see Glick *et al,* 2011, pp. 58–61). With regard to the area of analysis for the San Clemente Island and specifically for the taxa at issue here, downscaled projections are available at least with respect to southern California.

San Clemente Island is located within a Mediterranean climatic regime, but with a significant maritime influence. Climate change models indicate a 1.8 to 5.4 degrees Fahrenheit (1 to 3 degrees Celsius) increase in average temperature for southern California by the year 2070 (Field *et al.* 1999, p. 5; Cayan *et al.* 2008, p. S26; PRBO 2011, p. 40). Over the same timespan, a 10 to 37 percent decrease in annual precipitation is predicted (PRBO 2011, p. 40), though other models predict little to no change in annual precipitation (Field *et al.* 1999, pp. 8–9; Cayan *et al.* 2008, p. S26). Although the island has a short rainy season, the presence of fog during the summer months helps to reduce drought stress for many plant species (Halvorson *et al.* 1988, p. 111; Fischer *et al.* 2009, p. 783). However, fog projections remain uncertain (Field *et al.* 1999, pp. 21–22). Researchers also have substantial uncertainty in precipitation projections, and relatively little consensus concerning precipitation patterns and projections for southwestern California (PRBO 2011, p. 40). San Clemente Island typically gets less rainfall than the neighboring mainland areas (Tierra Data 2005, p. 4). Therefore, the models may underestimate the effects of precipitation changes on island vegetation. Additionally, changes in sea level and temperature may be more acute on small islands due to their high vulnerability (surrounded by ocean) and low adaptive capacity (from limited size) (IPCC 2007b, p. 1). Less rainfall and warmer air temperatures could limit the range of *Acmispon dendroideus* var. *traskiae* in the future, although no research has directly explored the effects of climate change on the taxon.

Since listing of *Acmispon dendroideus* var. *traskiae,* the potential impact of ongoing, accelerated climate change has become a recognized threat to the flora and fauna of the United States (IPCC 2007a, pp. 1–52; PRBO 2011, pp. 1–68). However, the impacts of predicted future climate change to *A. d.* var. *traskiae* remain unclear. The best available information does not provide sufficient certainty on how and when climate change will affect the taxon, the extent of average temperature increases in California, or potential changes to the level of threat posed by fire on San Clemente Island. The most recent literature on climate change includes predictions of hydrological changes, higher temperatures, and expansion of drought areas (IPCC 2007a, pp. 1–18). While we recognize that climate change is an important issue with potential effects to listed species and their habitats, the best available information does not inform accurate predictions regarding its impacts to *A. d.* var. *traskiae* at this time.

Hybridization

Acmispon dendroideus var. *traskiae* is known to hybridize with *Acmispon argophyllus* var. *argenteus.* In 1990, Liston *et al.* (p. 240) confirmed hybridization between co-occurring populations of *A. d.* var. *traskiae* and *A. a.* var. *argenteus* in Wilson Cove. At that time, they detected only 4 hybrid individuals out of 38 individuals tested, and failed to detect hybridization in another area of co-occurrence at the southern end of the island.

Liston *et al.* (1990, pp. 240–243) offered three hypotheses for the scarcity of confirmed hybrid individuals. First, hybrids may have reduced fitness and be selected against, or be sterile and thus unable to produce viable seed even if backcrossed to the parent taxa. In this situation, hybridization would not be a threat to the genetic integrity of *Acmispon dendroideus* var. *traskiae.* Second and conversely, if the fertile hybrids are recent in origin (within the last 20 years), and because both parental taxon are long-lived woody perennials, few hybrid individuals would be expected due to the slower development and lifespan of the taxa. If this assumption is correct, then the genetic integrity of the largest known occurrence of *A. d.* var. *traskiae* in Wilson Cove, and the other occurrences containing hybrids, might be at risk of introgressive hybridization (introduction of genes from one species to another resulting in fertile hybrids). Introgressive hybridization could lead to the loss of genetic variation and lower fitness of *A. d.* var. *traskiae.* Finally, the limited number of hybrid plants (four) might be an artifact of the genetic testing method used by the study. A single diagnostic locus was used to detect hybrids, so although first-generation hybrids would be detected, later generations would be more difficult to

detect (Liston *et al.* 1990, pp. 240–243). If this is the case, the study could have underestimated the extent of hybridization between the two taxa.

Liston *et al.* (1990, p. 243) suggested further investigation of these hypotheses before management recommendations are made to the Navy. Hybridization may threaten, and could diminish, the genetic diversity of the taxon, especially in the already disturbed occurrence of Wilson Cove (Allan 1999, pp. 91–92). Allan (1999, p. 91) stated that *Acmispon dendroideus* var. *traskiae* should be ''closely monitored.'' The more recent data from McGlaughlin (2012, pers. comm.) suggest that hybridization among *A. d.* var. *traskiae* and *A. argophyllus* var. *argenteus* may be a rare event and may not be a substantial threat. For now, hybridization with *A. a.* var. *argenteus* remains a concern at the largest of the 29 occurrences (Wilson's Cove) and the 4 other areas where hybrids have been found. Biologists have also observed other unconfirmed hybrids (no genetic testing done) elsewhere on the island (e.g., Norton Canyon) (Howe 2009, pers. comm.; Braswell 2011, pers. obs.). Additional information is needed to determine the extent and magnitude of this threat to *A. d.* var. *traskiae.*

Summary of Factor E

Threats associated with military activities and fire continue to impact *Acmispon dendroideus* var. *traskiae* at 18 of 29 occurrences (62 percent) on San Clemente Island (Wilson Cove, Canchalagua Canyon, Middle Island Plateau, North Mosquito Cove, Eagle Canyon, Larkspur Canyon, Chamish Canyon, Lemon Tank Canyon, Seal Cove Terraces, Eel Cove Canyon, Middle Wallrock Canyon, Warren Canyon, North Island Terraces, Bryce Canyon, Thirst Canyon, Cave Canyon, Horse Canyon, and Pyramid Head). Incidental trampling and crushing of individual plants is likely to increase with increases in training levels on the island. However, the Navy is implementing conservation measures that will improve conditions for *A. d.* var. *traskiae,* which has expanded its distribution on the island. Military training activities have the potential to ignite fires that can spread to habitat supporting this taxon, though the majority of the occurrences are outside of the areas designated for live fire and demolition. In preparation for these training efforts, the Navy implemented a fire management plan within the MOFMP that will limit the frequency of fires escaping the Impact Areas.

Climate change may also likely impact *Acmispon dendroideus* var. *traskiae,* though the magnitude of this threat is largely unknown. The genetic integrity of *A. d.* var. *traskiae* may be threatened by hybridization with *A. argophyllus* var. *argenteus* at one of the largest occurrences and requires further investigation; however, the rate of hybridization appears to be rare.

Overall, the threats described under Factor E are either of unknown magnitude (climate change), of low likelihood (hybridization), or have been reduced through conservation measures implemented by the Navy (fire and military activities). Although impacts to *Acmispon dendroideus* var. *traskiae* due to fire and military activities have been reduced, we expect impacts will continue now and in the future.

Combination of Factors—Acmispon dendroideus var. traskiae

A species may be affected by more than one threat in combination. Within the preceding review of the five listing factors, we have identified multiple threats that may have interrelated impacts on *Acmispon dendroideus* var. *traskiae* (these interrelated impacts also occur for *Castilleja grisea*). For example, fires (Factor A and E) may be more intense or frequent in the habitat if greater amounts of nonnative grass (Factor A) are present in the vegetative community. Similarly, fires (Factor A and E) also may become more frequent if the climate changes (Factor E) into a drier, hotter environment. The movement of vehicles and troops (Factor E) and land use (Factor A) can also create more disturbance and erosion (Factor A) in *A. d.* var. *traskiae* habitat (as well as *C. grisea* habitat). The historical past on San Clemente is an illustration of interacting threats: Nonnative herbivores (Factor C) ate and killed much of the vegetation, causing greater impacts of erosion (Factor A) on the island. Thus, the taxons' productivity may be reduced because of these threats, either singularly or in combination. However, it is not necessarily easy to determine (nor is it necessarily determinable) whether a particular threat is the primary threat having the greatest effect on the viability of the species, or whether it is exacerbated by or working in combination with other potential threats to have cumulative or synergistic effects on the species. While the combination of factors is a threat to the existence of *A. d.* var. *traskiae,* we are unable to determine the magnitude or extent of cumulative or synergistic effects of the combination of factors on the viability of the taxon at this time.

Castilleja grisea (San Clemente Island paintbrush)

In the 2007 status review, we stated that the predominant threat at listing (nonnative herbivores) was removed from San Clemente Island in 1992 (USFWS 2007b, pp. 1–19). Additional threats to *Castilleja grisea* that we identified in 2007 include: (1) Erosion, (2) invasive nonnative species, (3) fire, (4) land use, and (5) lack of access to SHOBA. The first four of these threats are discussed below under *Factor A.* As discussed previously, lack of access to SHOBA is not considered a threat, though it limits our ability to assess all occurrences of the taxon reviewed here.

Factor A. The Present or Threatened Destruction, Modification, or Curtailment of Their Habitat or Range

Under this listing factor in the final listing rule, we identified habitat modification by browsing feral goats and rooting feral pigs as threats to *Castilleja grisea* and other island taxa (42 FR 40682). As discussed above, the Navy removed the last of the remaining feral goats and pigs from San Clemente Island in 1992 (Kellogg and Kellogg 1994, p. 5), which resulted in improved habitat conditions, and led to changes in the cover of native and nonnative plants on the island (Tierra Data Inc. 2005, pp. i–96; Kellogg 2006, pers. comm.). The Recovery Plan identified habitat alteration and disturbance from the Navy's use of the island for military operational and training needs as additional threats to the habitats occupied by *C. grisea* (USFWS 1984, pp. 58–63). Additional threats identified since listing include alteration of habitats on San Clemente Island by military training activities, fire, and fire management. Below, we discuss the impacts of the following threats that affect the habitat or range of *C. grisea:* (1) Land use, (2) erosion, (3) nonnative plants, (4) fire, and (5) fire management.

Land Use

The distribution of *Castilleja grisea* includes 28 occurrences distributed across the southern 15.5 mi (25 km) of the island, particularly along the eastern escarpment. Training activities approved in the MOFMP would include substantial increases in vehicle and foot traffic in the IOA, leading to habitat modification. Ten of the 28 occurrences (36 percent) are within or partially within the IOA and experience direct habitat impacts (plain northeast of Warren Canyon, Larkspur Canyon, Lemon Tank Canyon, Eagle Canyon, Bryce Canyon, Horse Beach Canyon, China Canyon, Knob Canyon,

Canchalagua Canyon, and Pyramid Head). An additional three occurrences (11 percent) are near the IOA (within 1,000 ft (305 m)) and could experience diffuse or accidental impacts to *C. grisea* habitat (Thirst Canyon, SHOBA Boundary Occurrence, and Upper Horse Canyon). Recent area closures due to unexploded ordnance could make habitat impacts from training difficult to assess for 10 occurrences in the future (36 percent; Nanny Canyon, Lemon Tank Canyon, Eel Point, Eagle Canyon, Bryce Canyon, Horse Beach Canyon, China Canyon, Knob Canyon, Canchalagua Canyon, and Pyramid Head).

The southern portion of *Castilleja grisea's* distribution extends through SHOBA where impacts to the habitat are likely. Certain munitions exercises involve the use of incendiary devices, such as illumination rounds, white phosphorous, and tracer rounds, which pose a high risk of fire ignition (USFWS 2008, pp. 11–13). Because of the elevated risk of fire associated with training activities, the Navy targets live and inert munitions fire toward Impact Areas I and II within SHOBA where bombardments and land demolition are concentrated. Four occurrences (14 percent) are within or partially within Impact Areas (China Canyon, Red Canyon, Upper Chenetti Canyon, and Horse Beach Canyon). Currently, the Impact Areas are closed to nonmilitary personnel, so the plant's status at these four occurrences is unknown, as well as the status of any conservation action that would otherwise be expected to be implemented in these areas (USFWS 2008, p. 50).

Also within SHOBA, an occurrence of *Castilleja grisea* is located in lower Horse Beach Canyon, above Horse Beach. Horse Beach (TAR 21) is used for special warfare training activities that include the use of live fire, illumination rounds, and tracers. Training activities within parts of SHOBA pose a direct threat to habitat due to associated ground disturbance and land demolition. Twelve of the 28 occurrences (43 percent) are at least partially within the boundaries of a training area (IOA, TAR, AVMA, or Impact Area) (Plain northeast of Warren Canyon, Larkspur Canyon, Lemon Tank Canyon, Eagle Canyon, Bryce Canyon, China Canyon, Knob Canyon, Canchalagua Canyon, Pyramid Head, Red Canyon, Upper Chenetti Canyon, and Horse Beach Canyon). The other 16 occurrences are located outside of heavily impacted training areas. Within training areas, many of the impacts to these 12 occurrences would be diffuse and are unlikely to have a high impact on the species. The Navy has demonstrated their efforts to help conserve and manage listed species on the island by ameliorating habitat impacts through implementation of the MOFMP and INRMP. Impacts to the habitat from land use are likely to continue in the future, but appear to pose a high-magnitude threat to the habitat of a small number of occurrences of *C. grisea* on San Clemente Island.

Erosion

Erosion and associated soil loss caused by browsing of feral goats and rooting of feral pigs likely modified the island's habitat (Navy 2002, p. 1–14). Overgrazing on San Clemente Island resulted in defoliation, which led to increased erosion over much of the island, especially on steep slopes where denuded soils can be quickly washed away during storm events (Johnson 1980, p. 107; Navy 2002, pp. 1–14, 3–9; Tierra Data Inc. 2007, pp. 6–7). There may be residual impacts from historical grazing, and vegetation may be slow to recover and hold soil. In the INRMP, erosion was identified as a threat to the canyon woodland habitat and maritime desert scrub, which is habitat for *Castilleja grisea* (Navy 2002, pp. 4–3, 4–12). The process of soil erosion can lead to destruction of terraces, steep slopes, and canyons that support the growth and reproduction of *C. grisea* (Navy 2002, p. D–23).

Increased military activities where *Castilleja grisea* occurs within training area boundaries are expected to increase erosion associated with roadways, through soil compaction and other soil disturbances. The impacts from erosion are anticipated along the ridgeline of the eastern escarpment, affecting eight occurrences (Pyramid Head, Knob Canyon, Canchalagua Canyon, Bryce Canyon, Eagle Canyon, Thirst Canyon, SHOBA Boundary occurrence, and Horton Canyon) (Tierra Data Inc. 2007, pp. 12–18; Navy 2008a, p. G–8). Closure of the eastern escarpment within SHOBA due to unexploded ordnance could make assessing this threat and implementing conservation measures in these eight occurrences difficult in the future.

The Navy studied the potential for erosion from several proposed military activities (Tierra Data Inc. 2007, pp. 1–45, Appendices). Approximately 12 *Castilleja grisea* occurrences fall partially or wholly within the boundaries of a designated training area (IOA, TAR, AVMA, or Impact Area), and are likely to be impacted by erosion. Fourteen occurrences of *C. grisea* are at least partially within 500 ft (152 m) of a road (paved or unpaved) (China Canyon, Horse Beach Canyon, Pyramid Head, Knob Canyon, Canchalagua Canyon, Bryce Canyon, Eagle Canyon, Upper Horse Canyon, Plain northeast of Warren Canyon, Horton Canyon, Seal Cove Terraces, Lemon Tank Canyon, Larkspur Canyon, and Terrace Canyon) (Forman and Alexander 1998, p. 217). These occurrences could be subject to diffuse disturbance and road effects that degrade the habitat quality. Roads can concentrate water flow, causing incised channels and erosion of slopes (Forman and Alexander 1998, pp. 216–217). This increased erosion near roads can degrade habitat, especially along the steep canyons and ridges.

Along the eastern escarpment, *Castilleja grisea* is found in steep canyons in proximity to roads where it may be vulnerable to runoff during storm events (Navy 2008a, pp. G–4, G–8). At the southern end of the species' range, one occurrence is downslope from Horse Beach Canyon Road along a poorly maintained dirt road that is proposed to serve as part of the Assault Vehicle Maneuver Corridor. This location is likely to have an elevated risk from erosion (USFWS 2008, p. 99).

The Navy incorporates erosion control measures into all site feasibility studies and project design to minimize the potential to exacerbate existing erosion and avoid impacts to listed species (Munson 2013, pers. comm.). The INRMP requires that all projects include erosion conservation work (Navy 2002, p. 4–89). These conservation actions include best management practices, choosing sites that are capable of sustaining disturbance with minimum soil erosion, and stabilizing disturbed sites (Navy 2002, pp. 4–89–4–91). An erosion control plan for San Clemente Island is in the development stage, with expectations to reduce impacts of erosion where *Castilleja grisea* occurs in areas with increased and expanded military operations (Munson 2013, pers. comm.). This erosion control plan will address military operations associated with the IOA, AVMA and AFP.

In areas that will not be covered under the erosion control plan, erosion control measures are already being incorporated into project designs to minimize the potential to exacerbate existing erosion and avoid impacts to listed species (Munson 2013, pers. comm.). Additionally, the Navy has agreed not to conduct training activities that may lead to impacts from erosion until the plan is successfully implemented. The processes and results of erosion cause island-wide impacts to *C. grisea,* particularly to the occurrences in or adjacent to military training areas or roads. Sixteen occurrences of *C.*

grisea (57 percent) are in areas that could be subject to, and threatened by, erosion from training activities or road use (Plain northeast of Warren Canyon, Larkspur Canyon, Lemon Tank Canyon, Eagle Canyon, Bryce Canyon, China Canyon, Knob Canyon, Canchalagua Canyon, Pyramid Head, Red Canyon, Upper Chenetti Canyon, Horse Beach Canyon, Upper Horse Canyon, Horton Canyon, Seal Cove Terraces, and Terrace Canyon). Occurrences in operationally closed areas may not be afforded the conservation measures outlined by the Navy.

Despite existing levels of erosion on the island, the distribution of *Castilleja grisea* has increased since listing. The Navy incorporates erosion control measures into all projects to minimize the potential to exacerbate existing erosion and avoid impacts to habitat and listed species. Although the Navy works to ameliorate the threat of erosion, management efforts are not possible in areas that are closed to natural resource personnel. Erosion is an island-wide threat to *C. grisea,* particularly to the 16 occurrences in or adjacent to military training areas or roads. Therefore, erosion is still considered a threat to the habitat of *C. grisea.*

Nonnative Plants

One of the threats to *Castilleja grisea* identified in the final listing rule was the spread of nonnative plants into its habitat (42 FR 40682, 40684). Nonnatives can alter habitat structure, ecological processes such as fire regimes, nutrient cycling, hydrology, and energy budgets, as well as compete for water, space, light, and nutrients (for discussion of nonnatives on San Clemente Island, see above discussion on Nonnative Species under *Acmispon dendroideus* var. *traskiae—Factor A*). *Castilleja grisea* is often associated with native maritime desert scrub vegetation types, where nonnative grasses are present but not a dominant component of the plant community (Tierra Data Inc. 2005, pp. 29–42).

Although previous invasions of nonnative species were probably introduced in grazing fodder, current invasions are typically introduced and spread around the island by military activities and training (see above discussion on Nonnative Species under *Acmispon dendroideus* var. *traskiae—Factor A*). Nonnative plants constitute a rangewide threat to all native plants on San Clemente Island, including all occurrences of *Castilleja grisea.* A total of 9 occurrences (32 percent) are within 500 ft (152 m) of Ridge Road or China Point Road, and may be subject to diffuse disturbance and road effects that degrade the habitat quality along the road (China Canyon, Horse Beach Canyon, Pyramid Head, Knob Canyon, Canchalagua Canyon, Bryce Canyon, Eagle Canyon, Plain northeast of Warren Canyon, and Lemon Tank Canyon) (Forman and Alexander 1998, p. 217). Roadsides tend to create conditions preferred by nonnative species (high disturbance, seed dispersal from vehicles, ample light and water) (Forman and Alexander 1998, p. 210). Nonnatives, including *Foeniculum vulgare* and *Mesembryanthemum crystallinum* (crystalline iceplant), have been found in the disturbed shoulders along the road between Ridge Road and China Point in SHOBA (Braswell 2011, pers. obs.).

Potential impacts from nonnative plants are expected to be minimized by annual implementation of the Navy's island-wide nonnative plant control program (O'Connor 2009b, pers. comm.; Munson 2013, pers. comm.; see above discussion on Nonnative Species under *Acmispon dendroideus* var. *traskiae—Factor A*). This program targets nonnative species for elimination using herbicide and mechanical removal, prioritizing species that are new to the island or are particularly destructive. The program has been successful at isolating and limiting some species, such as *Foeniculum vulgare,* to a few locations (Howe 2011, pers. comm.). To reduce the potential for transport of nonnative plants to San Clemente Island, military and nonmilitary personnel inspect tactical ground vehicles, and remove any visible plant material, dirt, or mud prior to going onto the island (USFWS 2008, p. 63). This precaution helps to control the movement of nonnative plants onto the island, but once on the island nonnatives are easily spread by the movement of vehicles from one area to another. Although nonnative plants will continue to pose a rangewide risk to *C. grisea,* it is a threat of low intensity, and the Navy has taken steps to curtail habitat conversion from nonnative plants.

Nonnative plant species are an island-wide threat to the native vegetative community. The Navy has taken preventative and conservation measures through funding and implementing nonnative plant species control on the island. Management and control of nonnative plants, however, is not in place at the four occurrences that are closed to natural resource managers. However, outside of these areas, *Castilleja grisea* has persisted on the island. Despite the continued risk of encroachment by nonnatives, *Castilleja grisea* remains on the island, and its range has continued to expand. Impacts from nonnative plants are a persistent, but low-level, threat to *C. grisea* habitat.

Fire

Fire was not considered a threat to *Castilleja grisea* habitat at the time of listing (42 FR 40682; August 11, 1977). Since that time, however, over 50 percent of the island has experienced at least one wildfire (Navy 2002, Map 3–3, p. 3–32). The majority of fires are concentrated in SHOBA, potentially impacting 15 of 28 occurrences (54 percent; Thirst Canyon, Eagle Canyon, Bryce Canyon, Canchalagua Canyon, Knob Canyon, Pyramid Head, Snake Canyon, Upper Chenetti Canyon, Horse Beach Canyon, China Canyon, Red Canyon, Kinkipar Canyon, Cave Canyon, Horse Canyon, and Upper Horse Canyon). Seven occurrences occur within the eastern escarpment in SHOBA where impacts from fire are less likely (Thirst Canyon, Eagle Canyon, Bryce Canyon, Canchalagua Canyon, Knob Canyon, Pyramid Head, and Snake Canyon). Recent closure of this area limits the ability to assess the status and manage habitat at these occurrences.

Because of the elevated risk of fire associated with training activities, the Navy targets live and inert munitions fire towards two delineated Impact Areas. The risk of frequent fire is higher in Impact Areas I and II, potentially affecting the habitat of four occurrences. The effects of fire, and the state of plants within the Impact Areas, are currently unknown due to closure of the area (USFWS 2008, p. 50). Fires are occasionally ignited by activities north of SHOBA, posing a low-magnitude threat to the habitat at 13 occurrences (46 percent; SHOBA Boundary, Horton Canyon, Lemon Tank Canyon, Nanny Canyon, Larkspur Canyon, Box Canyon, Upper Norton Canyon, Middle Ranch Canyon, Waymuck Canyon, Plain northeast of Warren Canyon, Seal Cove Terraces, Eel Cove Canyon, and Terrace Canyon) (Navy 2002, Map 3–4, p. 3–33).

Increased fire frequency from intensified military use could lead to localized changes in vegetation (see above discussion on fire frequency under *Acmispon dendroideus* var. *traskiae—Factor A*). The Navy has significantly expanded the number of locations where live fire and demolition training will take place (USFWS 2008, pp. 21–37), including TAR north of SHOBA (TAR 17—Eel Cove Canyon and Seal Cove Terraces, and TAR 14 and 15—Larkspur Canyon). In addition to demolitions, the Navy has proposed certain munitions exercises involving the use of incendiary devices, such as

illumination rounds, white phosphorous, and tracer rounds, which pose a high risk of fire ignition. They have also approved expanded live fire and demolition training within TAR 16 (Lemon Tank Canyon) toward the center of the island. The fire pattern on the island will likely change due to this increase in ignition sources, with fires becoming more common within and adjoining the training areas north of SHOBA.

At the time of listing, we did not identify fire as a threat because of lack of fire history and the low intensity of military training on the island. Since that time, military training has significantly increased, and we have better records of the fire frequency on the island. Approximately 18 occurrences (64 percent) of *Castilleja grisea* fall within areas that may be subject to recurrent fires associated with military training. This includes locations that fall within SHOBA that serve as a buffer for Impact Areas I and II, and occurrences near live fire and demolition training areas. Occurrences of *C. grisea* have been discovered within and outside of the impact areas in SHOBA (Junak and Wilken 1998, p. 298; Navy 2002, p. D–20), indicating that the species is tolerant of at least occasional fire. High fire frequency may be a potential threat that could limit the distribution of *C. grisea* by overwhelming its tolerance threshold (Brooks *et al.* 2004, p. 683; Jacobson *et al.* 2004, p. 1). Frequent fire may exceed a plant taxon's capacity to persist by depleting seed banks and reducing reproductive output when fire occurs at higher than natural frequencies in *C. grisea* habitat (Zedler *et al.* 1983, pp. 811–815).

Within the Impact Areas or operationally closed zones, the Navy is not implementing fire suppression and firefighting because of safety hazards from the presence of unexploded ordnance. Fires that escape designated training areas threaten other parts of the island, though it is unlikely that one fire is capable of spreading throughout the entire range of the species due to its broad distribution across the island. The Navy's implementation of the MOFMP will limit the frequency with which fires escape Impact Areas and TAR. Through the annual review process, the Navy will identify mechanisms to reduce fire return intervals within areas and habitats where this taxon is concentrated (USFWS 2008, pp. 91–122). Although the threat is ameliorated through the MOFMP, fire remains an island-wide threat to *C. grisea* habitat, particularly to the habitat at the 18 occurrences that fall within areas that may be subject to recurrent fire associated with military training.

Fire Management

Fire suppression techniques are used by the Navy on San Clemente Island as described in the MOFMP, including creation of firebreaks (bare soil created through manual or herbicide removal of vegetation), use of fire retardants (spraying of fire retardants along fire breaks), and aerial drops of saltwater from aircraft. All of these activities have the potential to impact *Castilleja grisea* individuals and occurrences. However, within the MOFMP, the Navy proposed the implementation of a fire management plan directed at fire suppression, fire prevention, and fuels management (Navy 2008b, p. 3.11–62). This plan was developed to provide flexibility for the timing of military training and will modify the level of fire suppression resources required to be present during training activities (Navy 2008b, p. 3.11–62). The Navy also committed to conducting an annual review of fire management and fire occurrences that will allow for adaptive management and changes in the MOFMP (USFWS 2008, pp. 91–122).

The Navy maintains fuelbreaks within SHOBA along the boundaries of Impact Areas I and II to prevent the spread of fire outside of the areas (USFWS 2008, p. 57). Four documented occurrences of *Castilleja grisea* are within the Impact Areas; these occurrences are likely exposed to impacts from higher intensity training, such as bombardment and weapon fire. Some of these occurrences are near fuelbreaks and may be impacted by erosion or invasive nonnative plants caused by fuelbreak maintenance. Additionally, occurrences on the eastern escarpment near the firebreaks on Ridge Road (Canchalagua Canyon, Knob Canyon) might be impacted by the creation and maintenance of firebreaks (USFWS 2008, p. 57).

The Navy uses herbicides and strip burning to create fuelbreaks on the island, and maintains these fuelbreaks with continued use of herbicides and fire retardant (Phos-Chek D75F) (USFWS 2008, pp. 97–98). The use of fire retardant or herbicide, as proposed in the MOFMP, results in the loss of *Castilleja grisea* habitat within the fuelbreak footprint (USFWS 2008, p. 81). The use of Phos-Chek may also allow or facilitate the expansion and persistence of nonnative species due to the fertilizing effect of this retardant (Larson *et al.* 1999, p. 115; Kalabokidis 2000, p. 130). Fire retardants act as a source of nitrogen and phosphorous, which are nutrients that can affect plant species composition (Larson and Duncan 1982, p. 702). The Navy has begun a study on the effects of Phos-Chek on San Clemente Island vegetation, and has avoided application of Phos-Chek within 300 ft (91.4 m) of mapped listed species (including *C. grisea*) to the extent allowable with fuelbreak installation (USFWS 2008, pp. 97–98).

We anticipate the Navy will construct additional fuelbreaks to minimize the risk of fire spreading from areas of live fire and demolition training north of SHOBA (USFWS 2008, p. 98). In the MOFMP, the Navy agreed to conduct preseason briefings for firefighting personnel on the guidelines for fire suppression, and the limitations associated with the use of Phos-Chek and saltwater drops (USFWS 2008, pp. 97–98). The impact of saltwater on the habitat of *Castilleja grisea* has not yet been assessed. However, if salt persists in the soil, the composition of the plant community could change to favor more salt-tolerant taxa.

To minimize the potential for effects to listed species, the Navy considers the documented locations of listed species on the island as fuelbreak lines are developed (Navy 2009, p. 4–32). The majority of *Castilleja grisea* habitat is not impacted by fire management, and only 6 occurrences (21 percent) are associated with fuelbreaks. Even if expanded in conjunction with increased levels of training activities, the benefits of fuelbreaks outweigh the detrimental impacts of recurrent fire to *C. grisea* habitat. The threat of fire management to *C. grisea* habitat is restricted mainly to occurrences within SHOBA, and particularly to occurrences in the Impact Areas. Because of the isolated nature of this threat and its role in prevention of fire, fire management is a low-magnitude threat to *C. grisea* habitat.

Summary of Factor A

The habitat of *Castilleja grisea* is threatened by destruction and modification of habitat associated with land use, erosion, the spread of nonnatives, fire, and fire management. To help ameliorate these threats, the Navy is implementing an MOFMP, an INRMP, and the island-wide control of nonnative plants (Navy 2002, pp. 1–1–8–12; USFWS 2008, pp. 1–237). The MOFMP has been helpful in informing strategic decisions for training using live fire or incendiary devices. The Navy has agreed not to conduct training activities that may lead to impacts from erosion until an erosion control plan is successfully implemented (Munson 2013, pers. comm.). Natural resource

managers have been successful at decreasing the prevalence of particularly destructive nonnatives, such as *Foeniculum vulgare.* In recent years, the Navy has strictly prohibited access to Impact Areas I and II within SHOBA for biological monitoring and conservation actions (USFWS 2008, p. 50), so the status of the four occurrences in these areas remains unknown. Recently, closures along the eastern escarpment in SHOBA have also limited the monitoring and management of four occurrences (Knob Canyon, Canchalagua Canyon, Bryce Canyon, and Eagle Canyon). However, 16 occurrences (57 percent) of *C. grisea* fall outside Impact Areas, IOA, AVMA, TAR, and fuelbreaks, where the most intensive habitat disturbances are likely to take place. Threats posed by land use, erosion, nonnatives, fire, and fire management are ongoing, and though impacts have been reduced due to the expanded range of *C. grisea* and conservation efforts, we expect these threats will continue to impact *C. grisea* habitat now and in the future as recovery of the species and its habitat continues.

Factor B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

In the listing rule (42 FR 40682; August 11, 1977), we did not identify any threats from overutilization, and there is no new information to indicate that overutilization is a threat to *Castilleja grisea.* Although voucher herbarium specimens of *C. grisea* and seeds have been collected for research and seed banking, overutilization of *C. grisea* for any purpose is not currently considered a threat nor expected to be in the future.

Factor C. Disease or Predation

Grazing of feral goats and rooting of feral pigs were considered a direct threat to *Castilleja grisea* in the final listing rule (42 FR 40682; August 11, 1977). As stated above, this threat was ameliorated by the removal of all goats and pigs from San Clemente Island in 1992, as recognized in our 2007 status review (USFWS 2007b, p. 11). Currently, no other predators or diseases on San Clemente Island are known to pose a significant threat to *C. grisea,* nor are they expected to become a threat in the future.

Factor D. Inadequacy of Existing Regulatory Mechanisms

The Act requires us to examine the adequacy of existing regulatory mechanisms with respect to those existing and foreseeable threats that may affect *Castilleja grisea.* The inadequacy of existing regulatory mechanisms was not indicated as a threat to *C. grisea* at the time of listing (42 FR 40682; August 11, 1977). Since it was listed as endangered, *C. grisea* has been and continues to be primarily protected by the Act. Our responsibilities in administering the Act include sections 7, 9, and 10 (for more information on our responsibilities, see above discussion under *Acmispon dendroideus* var. *traskiae—Factor D*). Critical habitat has not been designated or proposed for this taxon.

Listing *Castilleja grisea* as endangered provided a variety of protections, including the prohibitions against removing or destroying plants within areas under Federal jurisdiction and the conservation mandates of section 7 for all Federal agencies. These protections would continue to be afforded to *C. grisea* if it is downlisted. For plants listed as threatened, protections are the same, except that the Code of Federal Regulations stipulates protections are not extended to seeds of cultivated specimens of threatened plants (50 CFR 17.71). This change in protections would not have an effect on the conservation of *C. grisea,* because conservation of this taxon does not require protection for seeds of cultivated plants. In the following discussion, we evaluate protections provided by other regulatory mechanisms to determine whether they effectively remove threats to *C. grisea.*

Other Federal Protections

National Environmental Policy Act (NEPA)

All Federal agencies are required to adhere to the National Environmental Policy Act (NEPA) of 1970 (42 U.S.C. 4321 *et seq.*) for projects they fund, authorize, or carry out. The Council on Environmental Quality's regulations for implementing NEPA (40 CFR parts 1500–1518) state that agencies shall include a discussion on the environmental impacts of the various project alternatives (including the proposed action), any adverse environmental effects that cannot be avoided, and any irreversible or irretrievable commitments of resources involved (40 CFR part 1502). The NEPA itself is a disclosure law, and does not require subsequent minimization or mitigation measures by the Federal agency involved. Although Federal agencies may include conservation measures for *Castilleja grisea* as a result of the NEPA process, any such measures are typically voluntary in nature and are not required by the statute. NEPA does not itself regulate activities that might affect *C. grisea,* but it does require full evaluation and disclosure of information regarding the effects of contemplated Federal actions on sensitive species and their habitats.

On San Clemente Island, the Navy must meet the NEPA requirements for actions significantly affecting the quality of the human environment. Typically, the Navy prepares Environmental Assessments and Environmental Impact Statements on operational plans and new or expanding training actions. Absent the listing of *Castilleja grisea,* we would expect the Navy to continue to meet the procedural requirements of NEPA for its actions, including evaluating the environmental impacts to rare plant species and other natural resources. However, as explained above, NEPA does not itself regulate activities that might affect species listed as endangered or threatened under the Act.

Sikes Act Improvement Act (Sikes Act)

The Sikes Act (16 U.S.C. 670) authorizes the Secretary of Defense to develop cooperative plans with the Secretaries of Agriculture and the Interior for natural resources on public lands. The Sikes Act Improvement Act of 1997 requires Department of Defense installations to prepare INRMPs that provide for the conservation and rehabilitation of natural resources on military lands consistent with the use of military installations to ensure the readiness of the Armed Forces. An INRMP is a plan intended ". . . to guide installation commanders in managing their natural resources in a manner that is consistent with the sustainability of those resources while ensuring continued support of the military mission" (Navy 2002, p. 1–1). INRMPs are developed in coordination with the State and the Service, and are generally updated every 5 years. Although an INRMP is technically not a regulatory mechanism because its implementation is subject to funding availability, it is an important guiding document that helps to integrate the military's mission with natural resource protection.

San Clemente Island Integrated Natural Resources Management Plan (INRMP)

Pursuant to the Sikes Act, the Navy adopted an INRMP for San Clemente Island that identifies multiple objectives for protecting *Castilleja grisea* and its habitat to help reduce threats to this taxon (Navy 2002). The INRMP also disclosed actions through the NEPA process, and to comply with such legislation and regulations as the

Endangered Species Act, the Federal Noxious Weed Act of 1974 (7 U.S.C. 2801), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601), the Resource Conservation and Recovery Act (42 U.S.C. 6901), and the Soil Conservation Act (16 U.S.C. 3B) (see INRMP section above under *Acmispon dendroideus* var. *traskiae—Factor D*).

Natural resource objectives of relevance to the protection of *Castilleja grisea* in the INRMP include an objective to: ''Protect, monitor, and restore plants and cryptograms in order to manage for their long-term sustainability on the island'' (Navy 2002, p. 4–39). The INRMP specifically includes the following objectives for *C. grisea* management: recovery of native shrub communities that are host plants for the species, the removal of nonnatives, monitoring of the species, studies of preferred host plants, study of plant's response to fire, and studies and inventory of insect pollinators (Navy 2002, pp. D–20, D–21). Multiple INRMP management strategies have been implemented for the conservation of *C. grisea.* Other INRMP strategies that target the plant communities within which this species occurs include: controlling erosion, with priority given to locations where erosion may be affecting listed species; producing a new vegetation map; reducing nonnative plant cover; managing the size and intervals of fires; experimenting with fire management to improve native plant dominance while protecting sensitive plant occurrences; and conducting genetic and biological studies of *C. grisea* across the island.

The MOFMP, Erosion Control Plan, and nonnative plant species control conducted on the island are discussed above under *Castilleja grisea—Factor A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range.* As noted under the other factors, while the INRMP helps to ameliorate threats and provides some protection for *C. grisea* occurrences, those occurrences within Impact Areas or operationally closed areas may not benefit from the conservation measures. While the INRMP has reduced the severity of threats and contributed to conservation of the species, it still allows for land use consistent with military readiness and training. Thus, Navy activities will continue to impact *C. grisea* and habitat where it occurs, as described under Factor A and E.

See also the section above for *Acmispon dendroideus* var. *traskiae* for discussion related to the Federal Noxious Weed Act and the Soil Conservation and Domestic Allotment Act, which also apply to *Castilleja grisea.*

State Protections

Since the time of listing, *Castilleja grisea* has benefited from additional State protections under the Native Plant Protection Act (NPPA) and California Endangered Species Act (CESA; listed 1982) (see State Protections for *Acmispon dendroideus* var. *traskiae* above, which provides additional information that also applies to *C. grisea*). However, the range of *C. grisea* is restricted to a Federal military installation, so listing under NPPA and CESA may only afford protection to this species in rare instances when the lead agency is a non-Federal agency or when proposed activities fall under other State laws.

Summary of Factor D

The regulatory mechanisms above help to reduce threats for the conservation of *Castilleja grisea.* In continuance of a long history of cooperative conservation efforts, the Navy implemented several conservation actions that benefit this plant taxon. The Navy has implemented an MOFMP to reduce the risk of fire on the island and a nonnative plant species control program. In response to the conservation actions proposed and the current status of the listed taxon, we issued a non-jeopardy biological opinion on the Navy's MOFMP. The provisions included in the San Clemente Island INRMP provide protection to all *C. grisea* occurrences and adaptive management of its habitat in order to help address threats to the plant from military activities and nonnative plants. However, as indicated in the discussion under Factor A, not all management tools described in the INRMP are in place, and conservation management may not be implemented at four occurrences that have been closed to natural resource managers. *Castilleja grisea* occurrences are afforded protection through Federal mechanisms, and thus the inadequacy of existing regulatory mechanisms is not considered a current threat to the species. However, the Act is the primary law providing protection to this taxon; in the absence of the Act, the existing regulatory mechanisms are not adequate to conserve *C. grisea* throughout its range.

Factor E. Other Natural or Manmade Factors Affecting Their Continued Existence

The 1977 listing rule identified competition from nonnative plants as a threat to *Castilleja grisea* under ''*Other Natural or Manmade Factors Affecting Their Continued Existence''* (42 FR 40682; August 11, 1977). In this 5-factor analysis, we discuss impacts from nonnative plants above under *Factor A* as a threat to habitat. Other Factor E threats identified since listing that currently impact *C. grisea* plants include: (1) Movement of vehicles and troops, (2) fire, and (3) climate change. Factor E addresses threats to individuals of the species, rather than the habitat modification threats that are discussed in Factor A. Therefore, while some threats are discussed in both sections, in this section we are focusing on the direct impacts to individuals of *C. grisea.*

Movement of Vehicles and Troops

Military training activities within training areas often entail the movement of vehicles and troops over the landscape with the potential of trampling or crushing individual plants (for discussion of SWAT, TAR, and IOA, see above discussion for *Acmispon dendroideus* var. *traskiae—Factor E*). Based on the distribution of *Castilleja grisea* occurrences and type of troop movements likely to occur, impacts due to trampling and crushing are likely to occur within the IOA or AVMA, along roads, and in the Impact Areas. Specifically, major troop movements and vehicle landings are planned through Horse Beach and the Horse Beach Canyon occurrence, with troops and assault vehicles moving north along Horse Beach Road from the beach (USFWS 2008, pp. 30, 41). These operations could affect the Horse Beach Canyon and China Canyon occurrences (USFWS 2008, pp. 85–86). The status of these plants is currently unknown because of closure of the Impact Areas (USFWS 2008, p. 50).

Fifteen of the 28 documented occurrences of *Castilleja grisea* are partially or wholly within the boundaries of a training area (IOA, TAR, AVMA, SWAT, or Impact Area), and may be impacted by trampling (Terrace Canyon, Larkspur Canyon, Nanny Canyon, Lemon Tank Canyon, Seal Cove Canyon, Eel Cove Canyon, Plain northeast of Warren Canyon, Eagle Canyon, Bryce Canyon, Horse Beach Canyon, China Canyon, Red Canyon, Knob Canyon, Canchalagua Canyon, and Pyramid Head). Recent documentation of *C. grisea* within these training areas suggests that, while the individual plants have the potential to be impacted by the activities described above, they are able to sustain themselves under the recent levels of traffic from vehicles and troops associated with training activities

(SERG 2009–2011, GIS data). Steep slopes along the eastern escarpment may also afford the eight *C. grisea* occurrences there some topographic protection from vehicle and troop movements. The anticipated loss of individual plants from proposed increases in troop and vehicle movement is likely to increase in the future, though this will likely be a low-level impact to the survival and recovery of *C. grisea* because it is diffuse and managed by the Navy (USFWS 2008, pp. 91–102).

Fire

Although not specifically mentioned in the listing rule, intense or frequent fires could threaten *Castilleja grisea.* In the *Factor A* discussion above, we addressed impacts of fire on the habitat; this section covers the discrete threats to individuals of *C. grisea.* It is unknown if *C. grisea* is adapted to periodic fires, though it is likely that this taxon is resilient to occasional fires (Navy 2002, p. D–10; Tierra Data Inc. 2005, p. 80). *Castilleja grisea* has recently been documented in portions of Horse Beach Canyon that burned up to three times since 1979, and a large occurrence was discovered in Pyramid Cove the year following a fire (Navy 1996, p. 5–2). The mechanisms and conditions under which *C. grisea* can tolerate fire, and at what frequency, are unknown. At higher than natural fire frequencies, fire has the potential to exceed a plant's capacity to persist by depleting seed banks and reducing reproductive output (Zedler *et al.* 1983, pp. 811–815). The response of *C. grisea* to fire may also be governed by the response of its host species to fire.

Castilleja grisea occurs in some areas of the island that may experience elevated fire frequency, such as SHOBA and especially the Impact Areas (Red Canyon, China Canyon, Horse Beach Canyon, Upper Chenetti Canyon) (discussed in *Factor A* above). The potential for frequent fire at many of the occurrences within SHOBA is reduced by their location on the eastern side of the island, away from Impact Areas I and II. In conjunction with its expansion of training activities, the Navy implemented a fire management plan within the MOFMP that is focused on fire prevention, fuels management, and fire suppression. These measures should minimize the frequency and spread of fires that could result in loss of *C. grisea* individuals.

Castilleja grisea is likely to withstand occasional fires, as demonstrated through its stability on the island since listing. Fires may escape the military training areas and spread to other areas of the island, but are not likely to disturb the entire distribution of *C. grisea* at one time because this taxon is widely distributed across San Clemente Island. Also, the species is associated with steep canyon areas where fires are less likely to impact the plant. Nine *C. grisea* occurrences (32 percent) are more vulnerable to the spread of fire associated with military training (Eel Cove Canyon, Seal Cove Terraces, Red Canyon, China Canyon, Horse Beach Canyon, Upper Chenetti Canyon, Larkspur Canyon, Lemon Tank Canyon, and Snake Canyon). These occurrences include locations that fall within 0.5 mi (805 m) of TAR, or within Impact Areas where live fire and demolition training will be performed.

The Navy's fire management practices minimize ignitions as well as the spread of fires (as described above in Factor A). The Navy is conducting annual reviews of fire management and fire occurrences that will allow for adaptive management. These measures should minimize the frequency and spread of fires that could result in loss of individuals of *C. grisea.* Although, in areas operationally closed to natural resource managers, conservation actions may not be implemented, and the plant's status remains unknown. We anticipate that the Navy's implementation of the MOFMP will limit the frequency with which fires escape Impact Areas and TAR and that, through the annual review process, the Navy will identify mechanisms to reduce fire return intervals in areas not designated for incendiary use (USFWS 2008, pp. 91–122). Therefore, the impact of fire on individual *C. grisea* plants is likely a low-level threat to long-term persistence of this taxon.

Climate Change

For general information regarding climate change impacts, see above discussion on climate change under *Acmispon dendroideus* var. *traskiae—Factor E.* Since listing of *Castilleja grisea* (USFWS 1977, p. 40684), the potential impacts of ongoing, accelerated climate change have become a recognized threat to the flora and fauna of the United States (IPCC 2007a, pp. 1–52; PRBO 2011, pp. 1–68) (for discussion of climate change scenarios in California, see *Acmispon dendroideus* var. *traskiae—Factor E* above). San Clemente is located within a Mediterranean climatic regime, but with a significant maritime influence. Climate change models predict an increase in average temperature for southern California. There is substantial uncertainty in precipitation projections, and relatively little consensus concerning precipitation patterns and projections for southwestern California (PRBO 2011, p. 40). Less rainfall and warmer air temperatures could limit the range of *C. grisea,* although there is no direct research on the effects of climate change on the species. *Castilleja grisea* occurs in great numbers on the eastern side of the island, where fog contributes to a wetter climate. This area could become drier if fog is less frequent, possibly affecting moisture availability for *C. grisea.* The impacts of predicted future climate change to *C. grisea* remain unclear. While we recognize that climate change is an important issue with potential effects to listed species and their habitats, information is not available to make accurate predictions regarding its effects to *C. grisea* at this time.

Summary of Factor E

Castilleja grisea continues to be impacted by military activities and fire at 16 of the 28 (57 percent) occurrences on San Clemente Island. Military training activities have the potential to ignite fires within *C. grisea* habitat, though only a few of the occurrences are within the Impact Areas and TAR where the highest impacts are concentrated. The threat from fire is reduced by implementation of the Navy's MOFMP, which should limit the frequency of fires escaping from the Impact Areas, although suppression will not likely occur within the boundaries of the Impact Areas. Threats from trampling and crushing of individual plants are likely to increase due to increases in training on the island. However, *C. grisea* has expanded its distribution on the island, and the Navy is implementing conservation measures that will continue to improve conditions for this taxon. Finally, climate change may likely influence this taxon, though the magnitude of this rangewide threat or how it may affect this taxon is unknown at this time. Given the distribution of the species and the conservation measures that will be implemented by the Navy, the threats described here currently and in the future are either of limited extent or adequately managed to reduce and minimize impacts to the species, while the potential overall threat of climate change remains unknown across this taxon's range. Although these threats are ongoing and could directly impact occurrences of this species, we are of the view that they are not likely to result in serious impacts to most of the known occurrences, now or in the future.

Combination of Factors—Castilleja grisea

A species may be affected by more than one threat in combination. Within the preceding review of the five listing factors, we have identified multiple threats that may have interrelated impacts on the species (see above discussion on Combination of Factors under *Acmispon dendroideus* var. *traskiae—Factor E*). The species' productivity may be reduced because of these threats, either singularly or in combination. However, it is not easy to determine (nor is it necessarily determinable) whether a particular threat is the primary threat having the greatest effect on the viability of the species, or whether it is exacerbated by or working in combination with other potential threats to have cumulative or synergistic effects on the species. While the combination of factors is a threat to the existence of *Castilleja grisea,* we are unable to determine the magnitude or extent of cumulative or synergistic effects of the combination of factors on the viability of the species at this time.

Determination

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* including information presented in the May 18, 2010, petition, available in our files, and through our 90-day and 12-month findings and proposed rule in response to this petition, as well as other available published and unpublished information. We also consulted with species experts and Navy staff who are actively managing for the conservation of *A. d.* var. *traskiae* and *C. grisea* on San Clemente Island.

A direct threat identified in the listing rule (42 FR 40682), grazing from feral herbivores, was eliminated by 1992 through the complete removal of goats and pigs from the island (Factors A and C). This action also fulfilled one of the primary goals of the Recovery Plan under Objective 2 (USFWS 1984, p. 107). However, as a result of years of grazing, impacts from nonnative plants and erosion have continued to increase on the island. Our review of the status of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* determined that threats to these species under Factors A and E are present. The Navy's natural resource management and INRMP for the island have substantially helped to reduce impacts from many of the threats to these species. The Navy implements natural resource management through the control of nonnative species, execution of the fire management plan, and avoidance of federally listed species. Despite current impacts from these threats to the habitat and individuals of these taxa, surveys indicate that the range of both has increased since the time of listing. Increased survey efforts and survey accuracy have also shown that these taxa occupy significantly more sites than were known at listing. The extent to which this represents the detection of previously unknown occurrences, recruitment from the existing seed bank, recolonization associated with dispersal events, or positive response to management and conservation efforts is not known. Regardless, the increase of both the range and number of occurrences for both taxa indicates an overall improved status for these taxa since listing.

The surveys and discoveries of new occurrences also contribute to the achievement of objectives in the Recovery Plan (Objective 6; USFWS 1984, p. 107). The Navy has taken measures to locate the heaviest impacts of military operations away from the species to the extent feasible while meeting operational needs, which will minimize, but not fully eliminate, the damage or destruction of individuals or occurrences of *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* partially fulfilling Objective 1 of the Recovery Plan (USFWS 1984, p. 107; USFWS 2008, pp. 90, 101, 121).

Acmispon dendroideus var. *traskiae*

Since listing and the removal of feral goats and pigs on San Clemente Island, the distribution of *Acmispon dendroideus* var. *traskiae* has expanded from 6 to 29 occurrences, mainly along the western terraces and eastern escarpment. These significant gains demonstrate alleviation of threats from feral ungulates and that the taxon is persisting despite existing and remaining threats across the landscape. The taxon faces continued impacts to its habitat from military training activities and land use, erosion, nonnative plants, and fire (see *Acmispon dendroideus* var. *traskiae—Factor A*). Impacts from land use include movement of vehicles and troops over the landscape, as well as the use of live fire, demolitions, and bombardments. Much of this activity is concentrated in training areas within the range of *A. d.* var. *traskiae.* However, many of these occurrences are along the eastern escarpment that is more protected from fire and military activity. Additionally, the majority of locations occupied by *A. d.* var. *traskiae* (24 of 29 occurrences, or 83 percent) fall outside of training areas, and thus do not receive intensive habitat disturbance. However, access to the eastern escarpment, within SHOBA and east of Ridge Road, was recently closed for safety concerns. As a result, the status of four occurrences (14 percent) are difficult to monitor now and in the future.

The Navy implemented a nonnative plant management plan and an MOFMP to ameliorate habitat threats to the species. Erosion control measures are incorporated into all project designs to minimize the potential to exacerbate existing erosion and avoid impacts to listed species (Munson 2013, pers. comm.). Additionally, the Navy has agreed not to conduct training activities that may lead to impacts from erosion until an erosion control plan is successfully implemented. It is anticipated that military training activities, erosion, nonnatives, and fire will have ongoing impacts to the taxon's habitat, although impacts from these threats are reduced due to the current distribution of this taxon and existing conservation efforts. As a result, the best available information indicates that the taxon is no longer in danger of extinction. However, ongoing impacts are likely to continue such that the taxon is still likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Under the Sikes Act, the Navy implemented an INRMP to coordinate the management of natural resources on the island. Providing a framework for military operations, this plan helps to ameliorate threats to the federally listed species on the island, and provides for long-term conservation planning within the scope of military readiness. Provisions included in the INRMP provide some protection for *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* occurrences, and allow adaptive management of the habitat in order to minimize impacts to the taxa from military activities and nonnative plants. Benefits provided to the taxa by the conservation measures in the MOFMP may be limited in the Impact Areas and operationally closed areas because natural resource personnel are not provided access to these areas. Under the INRMP, occurrences of *A. d.* var. *traskiae* will continue to be impacted by military activities necessary for military readiness and training.

As discussed above in relation to Factor D, there are existing regulatory mechanisms that provide protections to *A. d.* var. *traskiae.* However, these existing regulatory mechanisms, absent the protections of the Act, provide

insufficient certainty that efforts needed to address long-term conservation of the species will be implemented, or that they will be effective in reducing the level of threats to *A. d.* var. *traskiae* throughout its range.

Individual *Acmispon dendroideus* var. *traskiae* plants also face threats on the island. Movement of vehicles and troops, fire, climate change, and hybridization with related species all impact the status of the species (see *Acmispon dendroideus* var. *traskiae—Factor E*). The steps that the Navy has taken to minimize impacts and avoid listed species to the extent practicable are ameliorating the threat of trampling individual *A. d.* var. *traskiae* plants caused by training. Hybridization has also been studied (fulfilling Objective 4 of the Recovery Plan), with confirmed hybrids occurring in Wilson Cove (Wilson Cove) and four other locations. The genetic integrity of *A. d.* var. *traskiae* may be threatened by hybridization with *A. argophyllus* var. *argenteus* at a few occurrences, including one of the largest occupied locations, and requires further investigation. Although these threats could directly impact occurrences of this taxon, we are of the view that they will not cause catastrophic decline in the number of *A. d.* var. *traskiae* occurrences at this time or the future.

As discussed above in the Factor Analysis, a species may be affected by more than one threat in combination. For example, fires (Factors A and E) may be more intense or frequent in the habitat if there are greater amounts of nonnative grasses (Factor A) present in the vegetative community. Thus, the species' viability may be reduced because of threats in combination, but we are unable to determine the magnitude or extent of any synergistic effects of the various factors and their impact on *Acmispon dendroideus* var. *traskiae* at this time.

In conclusion, we have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by *Acmispon dendroideus* var. *traskiae.* Though threats still exist (military training activities and land use, erosion, nonnative plants, and fire) and will continue into the foreseeable future, the range of this taxon has substantially increased since listing. The expanded number of occurrences reduces the severity and magnitude of threats and the likelihood that any one event would affect all occurrences of the species. Additionally, the Navy is implementing conservation actions through their INRMP to reduce threats impacting *A. d.* var. *traskiae.* However, ongoing threats from military training activities, erosion, nonnatives, and fire remain throughout its range. After review of the information pertaining to the five threat factors, we find that the ongoing threats are not of sufficient imminence, intensity, or magnitude to indicate that *A. d.* var. *traskiae* is presently in danger of extinction throughout all or a significant portion of its range. Rather, the best available information indicates this species is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range due to the impacts from the ongoing threats throughout the species range. Thus, *A. d.* var. *traskiae* meets the definition of a threatened species.

Castilleja grisea

The known distribution of *Castilleja grisea* has expanded from 19 to 28 documented occurrences since listing, likely due to the removal of feral goats and pigs from the island in 1992. These significant gains demonstrate some alleviation of threats from feral ungulates and that the species is persisting despite existing and remaining threats across the landscape.

Castilleja grisea faces impacts to its habitat or range from military training activities and land use, erosion, nonnative plants, fire, and fire management (see *Castilleja grisea—Factor A*). The movement of vehicles and troops over the landscape, as well as use of live fire, demolitions, and bombardments, results in destruction and degradation of habitat occupied by *C. grisea.* Much of this activity is concentrated in SHOBA within training areas and Impact Areas. Four occurrences are within the Impact Areas, where frequent fire, habitat disturbance (bombardment), and troop and vehicle movement take place in the heavily used ranges. Access to parts of SHOBA, including the eastern escarpment and east of Ridge Road, were recently closed for safety concerns, so the status of the four occurrences may be difficult to assess in the future. However, these areas may be more protected from fire and military activity and are likely less impacted by habitat threats. In addition, a large proportion of *C. grisea* occurrences fall outside Impact Areas, TAR, and fuelbreaks, where the most intensive habitat disturbances are likely to take place. Although threats are being reduced due to the expanded range of *C. grisea* and conservation measures implemented by the Navy, we expect military training activities and land use, erosion, nonnative plants, fire, and fire management will continue to impact *C. grisea* habitat. As a result, the best available information indicates that the taxon is no longer in danger of becoming extinct. However, ongoing habitat disturbances are likely, such that the taxon is still likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Threats impacting individual plants of *Castilleja grisea* on the island include: Movement of vehicles and troops, fire, and potentially climate change (see *Castilleja grisea—Factor E*). The Navy has ameliorated the threats to individual plants by taking steps to minimize training impacts and measures to avoid endangered species to the extent practicable. The threats described under Factor E are either of limited extent or adequately managed and are not likely to seriously impact most *C. grisea* occurrences.

Under the Sikes Act, the Navy has implemented an INRMP to organize the management of natural resources on the island. Under the INRMP, occurrences of *C. grisea* will continue to be impacted by military activities necessary for military readiness and training.

As discussed in our analysis of Factor D, above, there are existing regulatory mechanisms that provide some level of protection to *C. grisea.* However, existing regulatory mechanisms, absent the protections of the Act, provide insufficient certainty that efforts needed to address long-term conservation of the species will be implemented, or that they will be effective in reducing the level of threats to *Castilleja grisea* throughout its range.

As discussed above in the Factor Analysis, a species may be affected by more than one threat in combination. For example, fires (Factors A and E) may be more intense or frequent in the habitat if there are greater amounts of nonnative grasses (Factor A) present in the vegetative community. Thus, the species' viability may be reduced because of threats in combination. Therefore, the combination of factors is a threat to the existence of *Castilleja grisea,* but we are unable to determine the magnitude or extent of any synergistic effects of the various factors and their impact at this time.

In conclusion, we have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by *Castilleja grisea.* Though threats still exist (military training activities and land use, erosion, nonnative plants, fire, and fire management) and will continue into the foreseeable future, the range of this taxon has substantially increased since

listing. In addition, the Navy continues to implement conservation actions through their INRMP to manage and reduce threats impacting *C. grisea.* The expanded number of occurrences reduces the severity and magnitude of threats and we do not expect that impacts to the species brought on by any of the threats discussed or a combination thereof would destroy enough plants or occurrences to bring about extinction. However, ongoing threats from military training activities, erosion, nonnatives, and fire remain throughout its range. After review of the information pertaining to the five threat factors, we find that the ongoing threats are not of sufficient imminence, intensity, or magnitude to indicate that *C. grisea* is presently in danger of extinction throughout all or a significant portion of its range. Rather, the best available information indicates this species is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range due to the impacts from ongoing threats throughout the species range. Thus, *C. grisea* meets the definition of a threatened species.

Significant Portion of the Range Analysis

Having determined that *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* do not meet the definition of endangered throughout their ranges, we must next consider whether there are any significant portions of their ranges that are in danger of extinction. The Act defines ''endangered species'' as any species which is ''in danger of extinction throughout all or a significant portion of its range,'' and ''threatened species'' as any species which is ''likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The definition of ''species'' is also relevant to this discussion. The Act defines the term ''species'' as follows: ''The term 'species' includes any subspecies of fish or wildlife or plants, and any distinct population segment [DPS] of any species of vertebrate fish or wildlife which interbreeds when mature.'' The phrase ''significant portion of its range'' (SPR) is not defined by the statute, and we have never addressed in our regulations: (1) The consequences of a determination that a species is either endangered or likely to become so throughout a significant portion of its range, but not throughout all of its range; or (2) what qualifies a portion of a range as ''significant.''

Two recent district court decisions have addressed whether the SPR language allows the Service to list or protect less than all members of a defined ''species'': *Defenders of Wildlife* v. *Salazar,* 729 F. Supp. 2d 1207 (D. Mont. 2010), concerning the Service's delisting of the Northern Rocky Mountain gray wolf (74 FR 15123, Apr. 12, 2009); and *WildEarth Guardians* v. *Salazar,* 2010 U.S. Dist. LEXIS 105253 (D. Ariz. Sept. 30, 2010), concerning the Service's 2008 finding on a petition to list the Gunnison's prairie dog (73 FR 6660, Feb. 5, 2008). The Service had asserted in both of these determinations that it had authority, in effect, to protect only some members of a ''species,'' as defined by the Act (i.e., species, subspecies, or DPS), under the Act. Both courts ruled that the determinations were arbitrary and capricious on the grounds that this approach violated the plain and unambiguous language of the Act. The courts concluded that reading the SPR language to allow protecting only a portion of a species' range is inconsistent with the Act's definition of ''species.'' The courts concluded that once a determination is made that a species (i.e., species, subspecies, or DPS) meets the definition of ''endangered species'' or ''threatened species,'' it must be placed on the list in its entirety and the Act's protections applied consistently to all members of that species (subject to modification of protections through special rules under sections 4(d) and 10(j) of the Act).

Consistent with that interpretation, and for the purposes of this finding, we interpret the phrase ''significant portion of its range'' in the Act's definitions of ''endangered species'' and ''threatened species'' to provide an independent basis for listing; thus there are two situations (or factual bases) under which a species would qualify for listing: A species may be endangered or threatened throughout all of its range; or a species may be endangered or threatened in only a significant portion of its range. If a species is in danger of extinction throughout an SPR, it, the species, is an ''endangered species.'' The same analysis applies to ''threatened species.'' Therefore, the consequence of finding that a species is endangered or threatened in only a significant portion of its range is that the entire species shall be listed as endangered or threatened, respectively, and the Act's protections shall be applied across the species' entire range.

We conclude, for the purposes of this finding, that interpreting the SPR phrase as providing an independent basis for listing is the best interpretation of the Act because it is consistent with the purposes and the plain meaning of the key definitions of the Act; it does not conflict with established past agency practice (i.e., prior to the 2007 Solicitor's Opinion), as no consistent, long-term agency practice has been established; and it is consistent with the judicial opinions that have most closely examined this issue. Having concluded that the phrase ''significant portion of its range'' provides an independent basis for listing and protecting the entire species, we next turn to the meaning of ''significant'' to determine the threshold for when such an independent basis for listing exists.

Although there are potentially many ways to determine whether a portion of a species' range is ''significant,'' we conclude, for the purposes of this finding, that the significance of the portion of the range should be determined based on its biological contribution to the conservation of the species. For this reason, we describe the threshold for ''significant'' in terms of an increase in the risk of extinction for the species. We conclude that a biologically based definition of ''significant'' best conforms to the purposes of the Act, is consistent with judicial interpretations, and best ensures species' conservation. Thus, for the purposes of this finding, a portion of the range of a species is ''significant'' if its contribution to the viability of the species is so important that, without that portion, the species would be in danger of extinction.

We evaluate biological significance based on the principles of conservation biology using the concepts of redundancy, resiliency, and representation. *Resiliency* describes the characteristics of a species that allow it to recover from periodic disturbance. *Redundancy* (having multiple populations distributed across the landscape) may be needed to provide a margin of safety for the species to withstand catastrophic events. *Representation* (the range of variation found in a species) ensures that the species' adaptive capabilities are conserved. Redundancy, resiliency, and representation are not independent of each other, and some characteristic of a species or area may contribute to all three. For example, distribution across a wide variety of habitats is an indicator of representation, but it may also indicate a broad geographic distribution contributing to redundancy (decreasing the chance that any one event affects the entire species), and the likelihood that some habitat types are less susceptible to certain threats, contributing to resiliency (the ability of the species to recover from disturbance). None of these concepts is intended to be mutually exclusive, and a portion of a species'

range may be determined to be ''significant'' due to its contributions under any one of these concepts.

For the purposes of this finding, we determine if a portion's biological contribution is so important that the portion qualifies as ''significant'' by asking whether, *without that portion,* the representation, redundancy, or resiliency of the species would be so impaired that the species would have an increased vulnerability to threats to the point that the overall species would be in danger of extinction (i.e., would be ''endangered''). Conversely, we would not consider the portion of the range at issue to be ''significant'' if there is sufficient resiliency, redundancy, and representation elsewhere in the species' range that the species would not be in danger of extinction throughout its range if the population in that portion of the range in question became extirpated (extinct locally).

We recognize that this definition of ''significant'' establishes a threshold that is relatively high. On the one hand, given that the consequences of finding a species to be endangered or threatened in an SPR would be listing the species throughout its entire range, it is important to use a threshold for ''significant'' that is robust. It would not be meaningful or appropriate to establish a very low threshold whereby a portion of the range can be considered ''significant'' even if only a negligible increase in extinction risk would result from its loss. Because nearly any portion of a species' range can be said to contribute some increment to a species' viability, use of such a low threshold would require us to impose restrictions and expend conservation resources disproportionately to conservation benefit: listing would be rangewide, even if only a portion of the range of minor conservation importance to the species is imperiled. On the other hand, it would be inappropriate to establish a threshold for ''significant'' that is too high. This would be the case if the standard were, for example, that a portion of the range can be considered ''significant'' only if threats in that portion result in the entire species' being currently endangered or threatened. Such a high bar would not give the SPR phrase independent meaning, as the Ninth Circuit held in *Defenders of Wildlife* v. *Norton,* 258 F.3d 1136 (9th Cir. 2001).

The definition of ''significant'' used in this finding carefully balances these concerns. By setting a relatively high threshold, we minimize the degree to which restrictions will be imposed or resources expended that do not contribute substantially to species conservation. But we have not set the threshold so high that the phrase ''in a significant portion of its range'' loses independent meaning. Specifically, we have not set the threshold as high as it was under the interpretation presented by the Service in the *Defenders* litigation. Under that interpretation, the portion of the range would have to be so important that current imperilment there would mean that the species would be *currently* imperiled everywhere. Under the definition of ''significant'' used in this finding, the portion of the range need not rise to such an exceptionally high level of biological significance. (We recognize that if the species is imperiled in a portion that rises to that level of biological significance, then we should conclude that the species is in fact imperiled throughout all of its range, and that we would not need to rely on the SPR language for such a listing.) Rather, under this interpretation we ask whether the species would be endangered everywhere without that portion, *i.e.,* if that portion were completely extirpated. In other words, the portion of the range need not be so important that even being in danger of extinction in that portion would be sufficient to cause the remainder of the range to be endangered; rather, the *complete extirpation* (in a hypothetical future) of the species in that portion would be required to cause the remainder of the range to be endangered.

The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that have no reasonable potential to be significant *and* threatened or endangered. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that: (1) The portions may be ''significant,'' and (2) the species may be in danger of extinction there or likely to become so within the foreseeable future. Depending on the biology of the species, its range, and the threats it faces, it might be more efficient for us to address the significance question first or the status question first. Thus, if we determine that a portion of the range is not ''significant,'' we do not need to determine whether the species is endangered or threatened there; if we determine that the species is not endangered or threatened in a portion of its range, we do not need to determine if that portion is ''significant.'' In practice, a key part of the portion status analysis is whether the threats are geographically concentrated in some way. If the threats to the species are essentially uniform throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats applies only to portions of the species' range that clearly would not meet the biologically based definition of ''significant,'' such portions will not warrant further consideration.

Having determined that *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* are no longer endangered throughout their ranges as a consequence of the threats evaluated under the five factors in the Act, we must next consider whether there are any significant portions of these two species' ranges where they are currently endangered. A portion of a species' range is significant if it is part of the current range of the species and is important to the conservation of the species as evaluated based upon its representation, resiliency, or redundancy.

Acmispon dendroideus var. *traskiae*

Applying the process described above, we evaluated the range of *Acmispon dendroideus* var. *traskiae* to determine if any units could be considered a significant portion of its range. This taxon is an island endemic restricted to a single, small island, with no natural division in its range. Because of its limited range and number of occurrences in close proximity to one another, no portion is likely to have a greater contribution to representation, resiliency, or redundancy than other portions. Furthermore, the existing and potential primary direct and indirect threats from military training activities, nonnative plant species, fire, and erosion are relatively uniform across San Clemente Island, indicating that no portions of its range are experiencing a greater severity or magnitude of threats. We conclude that there are no portions that warrant further consideration under this analysis.

In summary, the primary threats to *Acmispon dendroideus* var. *traskiae* are relatively uniform throughout its range. We determined that none of the existing or potential threats, either alone or in combination with others, currently place *A. d.* var. *traskiae* in danger of extinction throughout all or a significant portion of its range. However, without the continued protections of the Act, this taxon is likely to become endangered throughout its range in the foreseeable future. There is no available information indicating that there has been a range contraction to *A. d.* var. *traskiae* and therefore, we find that lost

historical range does not constitute a significant portion of the range for this species. Threatened status is, therefore, appropriate for *A. d.* var. *traskiae* throughout its entire range.

Castilleja grisea

Applying the process described above, we evaluated the range of *Castilleja grisea* to determine if any units could be considered a significant portion of its range (also see the Significant Portion of the Range Analysis section above for *Acmispon dendroideus* var. *traskiae*). This island endemic is restricted to a single, small island with no natural division in its range. Because of its limited range and number of occurrences in close proximity to one another, no portion is likely to have a greater contribution to its representation, resiliency, or redundancy than other portions. The primary threats to *C. grisea,* military training activities, nonnative plant species, fire, and erosion, are relatively uniform throughout its range (San Clemente Island), indicating that no portion is experiencing a greater severity or magnitude of threats. We conclude that there are no portions that warrant further consideration under this analysis. We determined that none of the existing or potential threats, either alone or in combination with others, currently place *C. grisea* in danger of extinction throughout all of its range. However, without the continued protections of the Act, this taxon is likely to become endangered throughout its range in the foreseeable future. There is no available information indicating that there has been a range contraction to *C. grisea* and therefore, we find that lost historical range does not constitute a significant portion of the range for this species. Threatened status is, therefore, appropriate for *C. grisea* throughout its entire range.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act requires the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan identifies site-specific management actions that set a trigger for review of the five factors that control whether a species remains endangered or may be downlisted or delisted, and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. The final recovery plan for endangered and threatened species of the California Channel Islands, including *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea,* is available on our Web site (*http://www.fws.gov/endangered*), or from our Carlsbad Fish and Wildlife Office (see **ADDRESSES**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribal, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

Funding for recovery actions is available from a variety of sources including Federal budgets, State programs, the academic community, and nongovernmental organizations. Information on our grant programs that are available to aid species recovery can be found at: *http://www.fws.gov/grants.*

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal agency actions within the taxon's habitat that may require consultation as described in the preceding paragraph include management and other landscape-altering activities on Federal lands administered by the Department of Defense.

Under section 9(a)(2) of the Act, with respect to endangered plant taxa, it is unlawful to remove and reduce to possession (i.e., collect) any such taxon from areas under Federal jurisdiction. Regulations adopted for threatened plants (50 CFR 17.71) refer to the regulations adopted for endangered plant species (50 CFR 17.61) and prohibit any act to remove and reduce to possession any threatened plant from an area under Federal jurisdiction; one exception to the prohibitions for endangered plants that applies to threatened plants is that seeds of cultivated specimens of species treated as threatened are exempt from all the provisions of 50 CFR 17.61.

Effects of This Rule

This final rule revises 50 CFR 17.12(h) to reclassify *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea* from endangered to threatened on the List of Endangered and Threatened Plants and to correct the scientific and common names for *Acmispon dendroideus* var. *traskiae.* This rule formally recognizes that these taxa are no longer presently

in danger of extinction throughout all or a significant portion of their ranges. However, this reclassification does not significantly change the protections afforded these species under the Act. The regulatory protections of section 9 and section 7 of the Act (see *Factor D,* above) would remain in place. Pursuant to section 7 of the Act, all Federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of *A. d.* var. *traskiae* or *C. grisea.* Whenever a species is listed as threatened, the Act allows promulgation of special rules under section 4(d) that modify the standard protections for threatened species found under section 9 of the Act and Service regulations at 50 CFR 17.31 and 17.71, when it is deemed necessary and advisable to provide for the conservation of the species. There are no section 4(d) rules in place or proposed for *A. d.* var. *traskiae* and *C. grisea,* because there is currently no conservation need to do so for these species.

The Recovery Plan for the Endangered and Threatened Species of the California Channel Islands addresses 10 plants (including *Acmispon dendroideus* var. *traskiae* and *Castilleja grisea*) and animals distributed among three of the Channel Islands (USFWS 1984). Recovery actions directed at plant taxa include:

(1) Removing feral animals;

(2) Removing or controlling selected nonnative plants;

(3) Controlling erosion;

(4) Revegetating eroded and disturbed areas;

(5) Reintroducing and reestablishing listed plant species populations;

(6) Modifying existing management plans to minimize habitat disturbance and incorporate recovery actions into natural resource management plans;

(7) Protecting habitat by minimizing habitat loss and disturbance and by preventing the introduction of additional nonnative organisms;

(8) Determining the habitat and other ecological requirements of the listed plant taxa (such as reproductive biology and fire tolerance);

(9) Evaluating the success of management actions;

(10) Increasing public support for recovery efforts; and

(11) Using existing laws and regulations to protect each taxon.

The removal of feral animals has been completed. Reintroduction and reestablishment of listed plant populations are not part of the Navy's conservation strategy for listed plants at this time. However, the Navy will coordinate with us to continue implementing the remainder of the recovery actions as outlined in the Recovery Plan to the extent each action does not interfere with military operations.

Required Determinations

Executive Order 13211

Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action and no Statement of Energy Effects is required.

Paperwork Reduction Act of 1995

Office of Management and Budget (OMB) regulations at 5 CFR part 1320, which implement provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), require that Federal agencies obtain approval from OMB before collecting information from the public. This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act. This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. 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.

National Environmental Policy Act

We determined we do not need to prepare an Environmental Assessment or an Environmental Impact Statement, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Authority

The authority for this action is section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

References Cited

A complete list of references cited in this rulemaking is available on the Internet at *http://www.regulations.gov* and upon request from the Carlsbad Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Author(s)

The primary authors of this package are the staff members of the Carlsbad Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we hereby amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245; unless otherwise noted.

■ 2. Amend § 17.12(h) under ''Flowering Plants'' by:

■ a. Adding an entry for *''Acmispon dendroideus* var. *traskiae''* in alphabetic order to read as follows;

■ b. Revising the entry for ''*Castilleja grisea''* to read as follows; and

■ c. Removing the entry for *''Lotus dendroideus* ssp. *Traskiae''.*

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
*	*	*	*	*	*		*
Acmispon dendroideus var. traskiae.	San Clemente Island lotus.	U.S.A. (CA)	Fabaceae	T	26	NA	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	*	*	*	*		*
Castilleja grisea	San Clemente Island Paintbrush.	U.S.A. (CA)	Orobanchaceae	T	26	NA	NA
*	*	*	*	*	*		*

Dated: July 2, 2013.

Rowan W. Gould,

Acting Director, U.S. Fish and Wildlife Service.

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