

**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 17**

[Docket No. FWS-HQ-ES-2016-0095;  
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**Endangered and Threatened Wildlife and Plants; Review of Native Species That Are Candidates for Listing as Endangered or Threatened; Annual Notification of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notification of review.

**SUMMARY:** In this Candidate Notice of Review (CNOR), we, the U.S. Fish and Wildlife Service (Service), present an updated list of plant and animal species native to the United States that we regard as candidates for or, have proposed for addition to the Lists of Endangered and Threatened Wildlife and Plants under the Endangered Species Act of 1973, as amended. Identification of candidate species can assist environmental planning efforts by providing advance notice of potential listings, and by allowing landowners and resource managers to alleviate threats and thereby possibly remove the need to list species as endangered or threatened. Even if we subsequently list a candidate species, the early notice provided here could result in more options for species management and recovery by prompting earlier candidate conservation measures to alleviate threats to the species.

This CNOR summarizes the status and threats that we evaluated in order to determine whether species qualify as candidates, to assign a listing priority number (LPN) to each candidate species, and to determine whether a species should be removed from candidate status. Additional material that we relied on is available in the Species Assessment and Listing Priority Assignment Forms (species assessment forms) for each candidate species.

This CNOR changes the LPN for one candidate. Combined with other decisions for individual species that were published separately from this CNOR in the past year, the current number of species that are candidates for listing is 30.

This document also includes our findings on resubmitted petitions and describes our progress in revising the Lists of Endangered and Threatened Wildlife and Plants (Lists) during the

period October 1, 2015, through September 30, 2016.

Moreover, we request any additional status information that may be available for the candidate species identified in this CNOR.

**DATES:** We will accept information on any of the species in this Candidate Notice of Review at any time.

**ADDRESSES:** This notification is available on the Internet at <http://www.regulations.gov> and <http://www.fws.gov/endangered/what-we-do/cnor.html>. Species assessment forms with information and references on a particular candidate species' range, status, habitat needs, and listing priority assignment are available for review at the appropriate Regional Office listed below in **SUPPLEMENTARY INFORMATION** or at the Branch of Conservation and Communications, Falls Church, VA (see address under **FOR FURTHER INFORMATION CONTACT**), or on our Web site ([http://ecos.fws.gov/tess\\_public/reports/candidate-species-report](http://ecos.fws.gov/tess_public/reports/candidate-species-report)). Please submit any new information, materials, comments, or questions of a general nature on this notice to the Falls Church, VA, address listed under **FOR FURTHER INFORMATION CONTACT**. Please submit any new information, materials, comments, or questions pertaining to a particular species to the address of the Endangered Species Coordinator in the appropriate Regional Office listed in **SUPPLEMENTARY INFORMATION**. Species-specific information and materials we receive will be available for public inspection by appointment, during normal business hours, at the appropriate Regional Office listed below under Request for Information in **SUPPLEMENTARY INFORMATION**. General information we receive will be available at the Branch of Conservation and Communications, Falls Church, VA (see address under **FOR FURTHER INFORMATION CONTACT**).

**FOR FURTHER INFORMATION CONTACT:** Chief, Branch of Conservation and Communications, U.S. Fish and Wildlife Service Headquarters, MS: ES, 5275 Leesburg Pike, Falls Church, VA 22041-3803 (telephone 703-358-2171). Persons who use a telecommunications device for the deaf may call the Federal Information Relay Service at 800-877-8339.

**SUPPLEMENTARY INFORMATION:** We request additional status information that may be available for any of the candidate species identified in this CNOR. We will consider this information to monitor changes in the status or LPN of candidate species and to manage candidates as we prepare listing documents and future revisions

to the notice of review. We also request information on additional species to consider including as candidates as we prepare future updates of this notice.

**Candidate Notice of Review****Background**

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*; ESA), requires that we identify species of wildlife and plants that are endangered or threatened based solely on the best scientific and commercial data available. As defined in section 3 of the ESA, an endangered species is any species that is in danger of extinction throughout all or a significant portion of its range, and a threatened species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Through the Federal rulemaking process, we add species that meet these definitions to the List of Endangered and Threatened Wildlife at 50 CFR 17.11 or the List of Endangered and Threatened Plants at 50 CFR 17.12. As part of this program, we maintain a list of species that we regard as candidates for listing. A candidate species is one for which we have on file sufficient information on biological vulnerability and threats to support a proposal for listing as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher-priority listing actions. We may identify a species as a candidate for listing after we have conducted an evaluation of its status—either on our own initiative, or in response to a petition we have received. If we have made a finding on a petition to list a species, and have found that listing is warranted but precluded by other higher priority listing actions, we will add the species to our list of candidates.

We maintain this list of candidates for a variety of reasons: (1) To notify the public that these species are facing threats to their survival; (2) to provide advance knowledge of potential listings that could affect decisions of environmental planners and developers; (3) to provide information that may stimulate and guide conservation efforts that will remove or reduce threats to these species and possibly make listing unnecessary; (4) to request input from interested parties to help us identify those candidate species that may not require protection under the ESA, as well as additional species that may require the ESA's protections; and (5) to request necessary information for setting priorities for preparing listing proposals. We encourage collaborative

conservation efforts for candidate species, and offer technical and financial assistance to facilitate such efforts. For additional information regarding such assistance, please contact the appropriate Regional Office listed under Request for Information or visit our Web site, <http://www.fws.gov/ endangered/what-we-do/cca.html>.

#### Previous Notices of Review

We have been publishing CNORs since 1975. The most recent was published on December 24, 2015 (80 FR 80584). CNORs published since 1994 are available on our Web site, <http://www.fws.gov/ endangered/what-we-do/ cnor.html>. For copies of CNORs published prior to 1994, please contact the Branch of Conservation and Communications (see **FOR FURTHER INFORMATION CONTACT**, above).

On September 21, 1983, we published guidance for assigning an LPN for each candidate species (48 FR 43098). Using this guidance, we assign each candidate an LPN of 1 to 12, depending on the magnitude of threats, immediacy of threats, and taxonomic status; the lower the LPN, the higher the listing priority (that is, a species with an LPN of 1 would have the highest listing priority). Section 4(h)(3) of the ESA (16 U.S.C. 1533(h)(3)) requires the Secretary to establish guidelines for such a priority-ranking system. As explained below, in using this system, we first categorize based on the magnitude of the threat(s), then by the immediacy of the threat(s), and finally by taxonomic status.

Under this priority-ranking system, magnitude of threat can be either “high” or “moderate to low.” This criterion helps ensure that the species facing the greatest threats to their continued existence receive the highest listing priority. It is important to recognize that all candidate species face threats to their continued existence, so the magnitude of threats is in relative terms. For all candidate species, the threats are of sufficiently high magnitude to put them in danger of extinction, or make them likely to become in danger of extinction in the foreseeable future. But for species with higher-magnitude threats, the threats have a greater likelihood of bringing about extinction or are expected to bring about extinction on a shorter timescale (once the threats are imminent) than for species with lower-magnitude threats. Because we do not routinely quantify how likely or how soon extinction would be expected to occur absent listing, we must evaluate factors that contribute to the likelihood and time scale for extinction. We therefore consider information such as: (1) The number of populations or extent

of range of the species affected by the threat(s), or both; (2) the biological significance of the affected population(s), taking into consideration the life-history characteristics of the species and its current abundance and distribution; (3) whether the threats affect the species in only a portion of its range, and, if so, the likelihood of persistence of the species in the unaffected portions; (4) the severity of the effects and the rapidity with which they have caused or are likely to cause mortality to individuals and accompanying declines in population levels; (5) whether the effects are likely to be permanent; and (6) the extent to which any ongoing conservation efforts reduce the severity of the threat(s).

As used in our priority-ranking system, immediacy of threat is categorized as either “imminent” or “nonimminent,” and is based on when the threats will begin. If a threat is currently occurring or likely to occur in the very near future, we classify the threat as imminent. Determining the immediacy of threats helps ensure that species facing actual, identifiable threats are given priority for listing proposals over species for which threats are only potential or species that are intrinsically vulnerable to certain types of threats but are not known to be presently facing such threats.

Our priority-ranking system has three categories for taxonomic status: Species that are the sole members of a genus; full species (in genera that have more than one species); and subspecies and distinct population segments of vertebrate species (DPS).

The result of the ranking system is that we assign each candidate a listing priority number of 1 to 12. For example, if the threats are of high magnitude, with immediacy classified as imminent, the listable entity is assigned an LPN of 1, 2, or 3 based on its taxonomic status (*i.e.*, a species that is the only member of its genus would be assigned to the LPN 1 category, a full species to LPN 2, and a subspecies or DPS would be assigned to LPN 3). In summary, the LPN ranking system provides a basis for making decisions about the relative priority for preparing a proposed rule to list a given species. No matter which LPN we assign to a species, each species included in this notice as a candidate is one for which we have concluded that we have sufficient information to prepare a proposed rule for listing because it is in danger of extinction or likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

For more information on the process and standards used in assigning LPNs,

a copy of the 1983 guidance is available on our Web site at: [http://www.fws.gov/ endangered/esa-library/pdf/1983\\_LPN\\_Policy\\_FR\\_pub.pdf](http://www.fws.gov/ endangered/esa-library/pdf/1983_LPN_Policy_FR_pub.pdf). Information on the LPN assigned to a particular species is summarized in this CNOR, and the species assessment for each candidate contains the LPN chart and a more-detailed explanation for our determination of the magnitude and immediacy of threat(s) and assignment of the LPN.

To the extent this revised notice differs from any previous animal, plant, and combined candidate notices of review for native species or previous 12-month warranted-but-precluded petition findings for those candidate species that were petitioned for listing, this notice supersedes them.

#### Summary of This CNOR

Since publication of the previous CNOR on December 24, 2015 (80 FR 80584), we reviewed the available information on candidate species to ensure that a proposed listing is justified for each species, and reevaluated the relative LPN assigned to each species. We also evaluated the need to emergency list any of these species, particularly species with higher priorities (*i.e.*, species with LPNs of 1, 2, or 3). This review and reevaluation ensures that we focus conservation efforts on those species at greatest risk.

In addition to reviewing candidate species since publication of the last CNOR, we have worked on findings in response to petitions to list species, and on proposed rules to list species under the ESA and on final listing determinations. Some of these findings and determinations have been completed and published in the **Federal Register**, while work on others is still under way (see *Preclusion and Expeditious Progress*, below, for details).

Based on our review of the best available scientific and commercial information, with this CNOR, we change the LPN for one candidate. Combined with other findings and determinations published separately from this CNOR, a total of 30 species (10 plant and 20 animal species) are now candidates awaiting preparation of rules proposing their listing. Table 1 identifies these 30 species, along with the 20 species currently proposed for listing (including 1 species proposed for listing due to similarity in appearance).

Table 2 lists the changes for species identified in the previous CNOR, and includes 97 species identified in the previous CNOR as either proposed for listing or classified as candidates that are no longer in those categories. This includes 78 species for which we

published a final listing rule (includes 11 DPSs of green sea turtle), 18 candidate species for which we published separate not-warranted findings and removed them from candidate status, and 1 species for which we published a withdrawal of a proposed rule.

#### New Candidates

We have not identified any new candidate species through this notice but identified one species—*island marble butterfly*—as a candidate on April 5, 2016, as a result of a separate petition finding published in the **Federal Register** (81 FR 19527).

#### Listing Priority Changes in Candidates

We reviewed the LPNs for all candidate species and are changing the number for the following species discussed below.

#### *Flowering plants*

*Boechea pusilla* (Fremont County rockcress)—The following summary is based on information in our files and in the petition received on July 24, 2007. Fremont County rockcress is a perennial herb consisting of a single population made of eight subpopulations found on sparsely vegetated granite-pegmatite outcrops at an elevation between 2,438 and 2,469 meters (m) (8,000 and 8,100 feet (ft)) in Fremont County, Wyoming. The entire species' range is located on lands managed by the Bureau of Land Management (BLM), and is protected by their regulatory mechanisms as well as by a 1998 Secretarial Order that withdraws the species' habitat from mineral development for 50 years. The species' range is likely limited by the presence of granite-pegmatite outcrops; however, the species has likely persisted without competition from other herbaceous plant or sagebrush-grassland species present in the surrounding landscape due to this dependence on a very specific, yet limited, substrate.

Overutilization and predation are not threats to the species, and regulatory mechanisms have removed threats associated with habitat loss and fragmentation. We previously determined that threats to the Fremont County rockcress were moderate in magnitude and imminent, due largely to uncertainty regarding a small and declining population size attributed to an unknown threat. Although the population likely declined in the past, new information since our last review has helped clarify that the population likely fluctuates around a stable, average size in response to precipitation, with the population increasing during wet

years and declining during dry years, but within a normal range of variation that may not be a threat to the species. Therefore, drought is likely the previously unidentified threat, which reduces the size of the population. Although the effects of climate change may result in drier summers, the Fremont County rockcress may benefit from longer growing seasons and more precipitation at the start of the growing season. Further, asexual reproduction helps reduce risks associated with a small population size. However, stochastic events could negatively affect the population, so drought and small population size are threats to the species. Although the population has declined in the past and could fluctuate in the future due to precipitation, the entire species' habitat is protected by the BLM's fully implemented and effective regulatory mechanisms, and no other impacts rise to the level of a threat. With drought implicated as the previously unidentified threat and an improved understanding of population fluctuations, we now determine that the magnitude of the threat to the species from drought is low. This is because the species may be adapted to drought and stochastic events. No other threat is ongoing, so we determine that the threats are now nonimminent. Additional surveys in 2016 will help clarify population trends, fluctuations, and the effects of drought and small population size on the species. Because the threats are low in magnitude and are nonimminent, we are changing the LPN from an 8 to an 11.

#### Petition Findings

The ESA provides two mechanisms for considering species for listing. One method allows the Secretary, on the Secretary's own initiative, to identify species for listing under the standards of section 4(a)(1). We implement this authority through the candidate program, discussed above. The second method for listing a species provides a mechanism for the public to petition us to add a species to the Lists. As described further in the paragraphs that follow, the CNOR serves several purposes as part of the petition process: (1) In some instances (in particular, for petitions to list species that the Service has already identified as candidates on its own initiative), it serves as the initial petition finding; (2) for candidate species for which the Service has made a warranted-but-precluded petition finding, it serves as a "resubmitted" petition finding that the ESA requires the Service to make each year; and (3) it documents the Service's compliance with the statutory requirement to

monitor the status of species for which listing is warranted but precluded, and to ascertain if they need emergency listing.

First, the CNOR serves as an initial petition finding in some instances. Under section 4(b)(3)(A) of the ESA, when we receive a petition to list a species, we must determine within 90 days, to the maximum extent practicable, whether the petition presents substantial information indicating that listing may be warranted (a "90-day finding"). If we make a positive 90-day finding, we must promptly commence a status review of the species under section 4(b)(3)(A); we must then make, within 12 months of the receipt of the petition, one of the following three possible findings (a "12-month finding"):

- (1) The petitioned action is not warranted, and promptly publish the finding in the **Federal Register**;
- (2) The petitioned action is warranted (in which case we are required to promptly publish a proposed regulation to implement the petitioned action; once we publish a proposed rule for a species, sections 4(b)(5) and 4(b)(6) of the ESA govern further procedures, regardless of whether or not we issued the proposal in response to a petition); or
- (3) The petitioned action is warranted, but (a) the immediate proposal of a regulation and final promulgation of a regulation implementing the petitioned action is precluded by pending proposals to determine whether any species is endangered or threatened, and (b) expeditious progress is being made to add qualified species to the Lists. We refer to this third option as a "warranted-but-precluded finding," and after making such a finding, we must promptly publish it in the **Federal Register**.

We define "candidate species" to mean those species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but for which issuance of the proposed rule is precluded (61 FR 64481; December 5, 1996). The standard for making a species a candidate through our own initiative is identical to the standard for making a warranted-but-precluded 12-month petition finding on a petition to list, and we add all petitioned species for which we have made a warranted-but-precluded 12-month finding to the candidate list.

Therefore, all candidate species identified through our own initiative already have received the equivalent of substantial 90-day and warranted-but-

precluded 12-month findings. Nevertheless, if we receive a petition to list a species that we have already identified as a candidate, we review the status of the newly petitioned candidate species and through this CNOR publish specific section 4(b)(3) findings (*i.e.*, substantial 90-day and warranted-but-precluded 12-month findings) in response to the petitions to list these candidate species. We publish these findings as part of the first CNOR following receipt of the petition. We have identified the candidate species for which we received petitions and made a continued warranted-but-precluded finding on a resubmitted petition by the code "C\*" in the category column on the left side of Table 1, below.

Second, the CNOR serves as a "resubmitted" petition finding. Section 4(b)(3)(C)(i) of the ESA requires that when we make a warranted-but-precluded finding on a petition, we treat the petition as one that is resubmitted on the date of the finding. Thus, we must make a 12-month petition finding for each such species at least once a year in compliance with section 4(b)(3)(B) of the ESA, until we publish a proposal to list the species or make a final not-warranted finding. We make these annual resubmitted petition findings through the CNOR. To the extent these annual findings differ from the initial 12-month warranted-but-precluded finding or any of the resubmitted petition findings in previous CNORs, they supercede the earlier findings, although all previous findings are part of the administrative record for the new finding, and we may rely upon them or incorporate them by reference in the new finding as appropriate.

Third, through undertaking the analysis required to complete the CNOR, the Service determines if any candidate species needs emergency listing. Section 4(b)(3)(C)(iii) of the ESA requires us to "implement a system to monitor effectively the status of all species" for which we have made a warranted-but-precluded 12-month finding, and to "make prompt use of the [emergency listing] authority [under section 4(b)(7)] to prevent a significant risk to the well being of any such species." The CNOR plays a crucial role in the monitoring system that we have implemented for all candidate species by providing notice that we are actively seeking information regarding the status of those species. We review all new information on candidate species as it becomes available, prepare an annual species assessment form that reflects monitoring results and other new information, and identify any species for which emergency listing may be

appropriate. If we determine that emergency listing is appropriate for any candidate, we will make prompt use of the emergency listing authority under section 4(b)(7) of the ESA. For example, on August 10, 2011, we emergency listed the Miami blue butterfly (76 FR 49542). We have been reviewing and will continue to review, at least annually, the status of every candidate, whether or not we have received a petition to list it. Thus, the CNOR and accompanying species assessment forms constitute the Service's system for monitoring and making annual findings on the status of petitioned species under sections 4(b)(3)(C)(i) and 4(b)(3)(C)(iii) of the ESA.

A number of court decisions have elaborated on the nature and specificity of information that we must consider in making and describing the petition findings in the CNOR. The CNOR that published on November 9, 2009 (74 FR 57804), describes these court decisions in further detail. As with previous CNORs, we continue to incorporate information of the nature and specificity required by the courts. For example, we include a description of the reasons why the listing of every petitioned candidate species is both warranted and precluded at this time. We make our determinations of preclusion on a nationwide basis to ensure that the species most in need of listing will be addressed first and also because we allocate our listing budget on a nationwide basis (see below). Regional priorities can also be discerned from Table 1, below, which includes the lead region and the LPN for each species. Our preclusion determinations are further based upon our budget for listing activities for unlisted species only, and we explain the priority system and why the work we have accomplished has precluded action on listing candidate species.

In preparing this CNOR, we reviewed the current status of, and threats to, the 29 candidates for which we have received a petition to list and the 3 listed species for which we have received a petition to reclassify from threatened to endangered, where we found the petitioned action to be warranted but precluded. We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for each of these species, has been, for the preceding months, and continues to be, precluded by higher-priority listing actions. Additional information that is the basis for this finding is found in the species assessments and our administrative record for each species.

Our review included updating the status of, and threats to, petitioned

candidate or listed species for which we published findings, under section 4(b)(3)(B) of the ESA, in the previous CNOR. We have incorporated new information we gathered since the prior finding and, as a result of this review, we are making continued warranted-but-precluded 12-month findings on the petitions for these species. However, for some of these species, we are currently engaged in a thorough review of all available data to determine whether to proceed with a proposed listing rule; as a result of this review we may conclude that listing is no longer warranted.

The immediate publication of proposed rules to list these species was precluded by our work on higher-priority listing actions, listed below, during the period from October 1, 2015, through September 30, 2016. Below we describe the actions that continue to preclude the immediate proposal and final promulgation of a regulation implementing each of the petitioned actions for which we have made a warranted-but-precluded finding, and we describe the expeditious progress we are making to add qualified species to, and remove species from, the Lists. We will continue to monitor the status of all candidate species, including petitioned species, as new information becomes available to determine if a change in status is warranted, including the need to emergency list a species under section 4(b)(7) of the ESA.

In addition to identifying petitioned candidate species in Table 1 below, we also present brief summaries of why each of these candidates warrants listing. More complete information, including references, is found in the species assessment forms. You may obtain a copy of these forms from the Regional Office having the lead for the species, or from the Fish and Wildlife Service's Internet Web site: [http://ecos.fws.gov/tess\\_public/reports/candidate-species-report](http://ecos.fws.gov/tess_public/reports/candidate-species-report). As described above, under section 4 of the ESA, we identify and propose species for listing based on the factors identified in section 4(a)(1)—either on our own initiative or through the mechanism that section 4 provides for the public to petition us to add species to the Lists of Endangered or Threatened Wildlife and Plants.

#### *Preclusion and Expeditious Progress*

To make a finding that a particular action is warranted but precluded, the Service must make two determinations: (1) That the immediate proposal and timely promulgation of a final regulation is precluded by pending proposals to determine whether any species is threatened or endangered; and (2) that expeditious progress is being

made to add qualified species to either of the lists and to remove species from the lists (16 U.S.C. 1533(b)(3)(B)(iii)).

#### *Preclusion*

A listing proposal is precluded if the Service does not have sufficient resources available to complete the proposal, because there are competing demands for those resources, and the relative priority of those competing demands is higher. Thus, in any given fiscal year (FY), multiple factors dictate whether it will be possible to undertake work on a proposed listing regulation or whether promulgation of such a proposal is precluded by higher-priority listing actions—(1) The amount of resources available for completing the listing function, (2) the estimated cost of completing the proposed listing regulation, and (3) the Service's workload, along with the Service's prioritization of the proposed listing regulation in relation to other actions in its workload.

#### **Available Resources**

The resources available for listing actions are determined through the annual Congressional appropriations process. In FY 1998 and for each fiscal year since then, Congress has placed a statutory cap on funds that may be expended for the Listing Program. This spending cap was designed to prevent the listing function from depleting funds needed for other functions under the ESA (for example, recovery functions, such as removing species from the Lists), or for other Service programs (see House Report 105–163, 105th Congress, 1st Session, July 1, 1997). The funds within the spending cap are available to support work involving the following listing actions: Proposed and final listing rules; 90-day and 12-month findings on petitions to add species to the Lists or to change the status of a species from threatened to endangered; annual “resubmitted” petition findings on prior warranted-but-precluded petition findings as required under section 4(b)(3)(C)(i) of the ESA; critical habitat petition findings; proposed rules designating critical habitat or final critical habitat determinations; and litigation-related, administrative, and program-management functions (including preparing and allocating budgets, responding to Congressional and public inquiries, and conducting public outreach regarding listing and critical habitat).

We cannot spend more for the Listing Program than the amount of funds within the spending cap without violating the Anti-Deficiency Act (31

U.S.C. 1341(a)(1)(A)). In addition, since FY 2002, the Service's listing budget has included a subcap for critical habitat designations for already-listed species to ensure that some funds within the listing cap are available for completing Listing Program actions other than critical habitat designations for already-listed species. (“The critical habitat designation subcap will ensure that some funding is available to address other listing activities.” House Report No. 107–103, 107th Congress, 1st Session (June 19, 2001)). In FY 2002 and each year until FY 2006, the Service had to use virtually all of the funds within the critical habitat subcap to address court-mandated designations of critical habitat, and consequently none of the funds within the critical habitat subcap were available for other listing activities. In some FYs since 2006, we have not needed to use all of the funds within the critical habitat to comply with court orders, and we therefore could use the remaining funds within the subcap towards additional proposed listing determinations for high-priority candidate species. In other FYs, while we did not need to use all of the funds within the critical habitat subcap to comply with court orders requiring critical habitat actions, we did not apply any of the remaining funds towards additional proposed listing determinations, and instead applied the remaining funds towards completing critical habitat determinations concurrently with proposed listing determinations. This allowed us to combine the proposed listing determination and proposed critical habitat designation into one rule, thereby being more efficient in our work. In FY 2016, based on the Service's workload, we were able to use some of the funds within the critical habitat subcap to fund proposed listing determinations.

Since FY 2012, Congress has also put in place two additional subcaps within the listing cap: One for listing actions for foreign species and one for petition findings. As with the critical habitat subcap, if the Service does not need to use all of the funds within either subcap, we are able to use the remaining funds for completing proposed or final listing determinations. In FY 2016, based on the Service's workload, we were able to use some of the funds within the petitions subcap to fund proposed listing determinations.

We make our determinations of preclusion on a nationwide basis to ensure that the species most in need of listing will be addressed first, and because we allocate our listing budget on a nationwide basis. Through the

listing cap, the three subcaps, and the amount of funds needed to complete court-mandated actions within the cap and subcaps, Congress and the courts have in effect determined the amount of money available for listing activities nationwide. Therefore, the funds that remain within the listing cap—after paying for work within the subcaps needed to comply with court orders or court-approved settlement agreements requiring critical habitat actions for already-listed species, listing actions for foreign species, and petition findings, respectively—set the framework within which we make our determinations of preclusion and expeditious progress.

For FY 2016, on December 18, 2015, Congress passed a Consolidated Appropriations Act (Pub. L. 114–113), which provided funding through September 30, 2016. That Appropriations Act included an overall spending cap of \$20,515,000 for the listing program. Of that, no more than \$4,605,000 could be used for critical habitat determinations; no more than \$1,504,000 could be used for listing actions for foreign species; and no more than \$1,501,000 could be used to make 90-day or 12-month findings on petitions. The Service thus had \$12,905,000 available to work on proposed and final listing determinations for domestic species. In addition, if the Service had funding available within the critical habitat, foreign species, or petition subcaps after those workloads had been completed, it could use those funds to work on listing actions other than critical habitat designations or foreign species.

*Costs of Listing Actions.* The work involved in preparing various listing documents can be extensive, and may include, but is not limited to: Gathering and assessing the best scientific and commercial data available and conducting analyses used as the basis for our decisions; writing and publishing documents; and obtaining, reviewing, and evaluating public comments and peer-review comments on proposed rules and incorporating relevant information from those comments into final rules. The number of listing actions that we can undertake in a given year also is influenced by the complexity of those listing actions; that is, more complex actions generally are more costly. In the past, we estimated that the median cost for preparing and publishing a 90-day finding was \$4,500 and for a 12-month finding, \$68,875. We have streamlined our processes for making 12-month petition findings to be as efficient as possible to reduce these costs and we estimate that we have cut this cost in half. We estimate that the

median costs for preparing and publishing a proposed listing rule with proposed critical habitat is \$240,000; and for a final listing determination with a final critical habitat determination, \$205,000.

*Prioritizing Listing Actions.* The Service's Listing Program workload is broadly composed of four types of actions, which the Service prioritizes as follows: (1) Compliance with court orders and court-approved settlement agreements requiring that petition findings or listing or critical habitat determinations be completed by a specific date; (2) essential litigation-related, administrative, and listing program-management functions; (3) section 4 (of the ESA) listing and critical habitat actions with absolute statutory deadlines; and (4) section 4 listing actions that do not have absolute statutory deadlines.

In previous years, the Service received many new petitions and a single petition to list 404 species, significantly increasing the number of actions within the third category of our workload—actions that have absolute statutory deadlines. As a result of the outstanding petitions to list hundreds of species, and our successful efforts to continue making initial petition findings within 90 days of receiving the petition to the maximum extent practicable, we currently have over 550 12-month petition findings yet to be initiated and completed. Because we are not able to work on all of these at once, we recently finalized a new methodology for prioritizing status reviews and accompanying 12-month findings (81 FR 49248; July 27, 2016). Moving forward, we are applying this methodology to 12-month findings to prioritize the outstanding petition findings and develop a multi-year workplan for completing them.

An additional way in which we prioritize work in the section 4 program is application of the listing priority guidelines (48 FR 43098; September 21, 1983). Under those guidelines, we assign each candidate an LPN of 1 to 12, depending on the magnitude of threats (high or moderate to low), immediacy of threats (imminent or nonimminent), and taxonomic status of the species (in order of priority: Monotypic genus (a species that is the sole member of a genus), a species, or a part of a species (subspecies or distinct population segment)). The lower the listing priority number, the higher the listing priority (that is, a species with an LPN of 1 would have the highest listing priority). A species with a higher LPN would generally be precluded from listing by species with lower LPNs, unless work

on a proposed rule for the species with the higher LPN can be combined with work on a proposed rule for other high-priority species.

Finally, proposed rules for reclassification of threatened species to endangered species are generally lower in priority, because as listed species, they are already afforded the protections of the ESA and implementing regulations. However, for efficiency reasons, we may choose to work on a proposed rule to reclassify a species to endangered if we can combine this with work that is subject to a court order or court-approved deadline.

Since before Congress first established the spending cap for the Listing Program in 1998, the Listing Program workload has required considerably more resources than the amount of funds Congress has allowed for the Listing Program. It is therefore important that we be as efficient as possible in our listing process.

On September 1, 2016, the Service released its National Listing Workplan for addressing ESA listing and critical habitat decisions over the next seven years. The workplan identifies the Service's schedule for addressing all 30 species currently on the candidate list and conducting 320 status reviews (also referred to as 12-month findings) for species that have been petitioned for federal protections under the ESA. The petitioned species are prioritized using our final prioritization methodology. As we implement our listing work plan and work on proposed rules for the highest-priority species, we prepare multi-species proposals when appropriate, and these include species with lower priority if they overlap geographically or have the same threats as one of the highest-priority species.

*Listing Program Workload.* From 2011–2016, we proposed and finalized listing determinations in accordance with a workplan we had developed for our listing work for that time period; we have subsequently developed a National Listing Workplan to cover the future period from 2017 to 2023. Each FY we determine, based on the amount of funding Congress has made available within the Listing Program spending cap, if we can accomplish the work that we have planned to do. Up until 2012, we prepared Allocation Tables that identified the actions that we funded for that FY, and how much we estimated it would cost to complete each action; these Allocation Tables are part of our record for the listing program. Our Allocation Table for FY 2012, which incorporated the Service's approach to prioritizing its workload, was adopted as part of a settlement agreement in a

case before the U.S. District Court for the District of Columbia (Endangered Species Act Section 4 Deadline Litigation, No. 10–377 (EGS), MDL Docket No. 2165 (“MDL Litigation”), Document 31–1 (D.D.C. May 10, 2011) (“MDL Settlement Agreement”). The requirements of paragraphs 1 through 7 of that settlement agreement, combined with the work plan attached to the agreement as Exhibit B, reflected the Service's Allocation Tables for FY 2011 and FY 2012. In addition, paragraphs 2 through 7 of the agreement require the Service to take numerous other actions through FY 2017—in particular, complete either a proposed listing rule or a not-warranted finding for all 251 species designated as “candidates” in the 2010 candidate notice of review (“CNOR”) before the end of FY 2016, and complete final listing determinations for those species proposed for listing within the statutory deadline (usually one year from the proposal). Paragraph 10 of that settlement agreement sets forth the Service's conclusion that “fulfilling the commitments set forth in this Agreement, along with other commitments required by court orders or court-approved settlement agreements already in existence at the signing of this Settlement Agreement (listed in Exhibit A), will require substantially all of the resources in the Listing Program.” As part of the same lawsuit, the court also approved a separate settlement agreement with the other plaintiff in the case; that settlement agreement requires the Service to complete additional actions in specific fiscal years—including 12-month petition findings for 11 species, 90-day petition findings for 478 species, and proposed listing rules or not-warranted findings for 40 species.

These settlement agreements have led to a number of results that affect our preclusion analysis. First, the Service has been limited in the extent to which it can undertake additional actions within the Listing Program through FY 2017, beyond what is required by the MDL Settlement Agreements. Second, because the settlement is court-approved, completion, before the end of FY 2016, of proposed listings or not-warranted findings for the remaining candidate species that were included in the 2010 CNOR was the Service's highest priority (compliance with a court order) for FY 2016. Therefore, one of the Service's highest priorities is to make steady progress towards completing by the end of 2017 the remaining final listing determinations for the 2010 candidate species taking

into consideration the availability of staff resources.

Based on these prioritization factors, we continue to find that proposals to list the petitioned candidate species included in Table 1 are all precluded by higher-priority listing actions, including listing actions with deadlines required by court orders and court-approved settlement agreements and listing actions with absolute statutory deadlines. We provide tables in the *Expeditious Progress* section, below, identifying the listing actions that we completed in FY 2016, as well as those we worked on but did not complete in FY 2016.

**Expeditious Progress**

As explained above, a determination that listing is warranted but precluded must also demonstrate that expeditious progress is being made to add and remove qualified species to and from the Lists. As with our “precluded” finding, the evaluation of whether progress in adding qualified species to the Lists has been expeditious is a function of the resources available for listing and the competing demands for those funds. (Although we do not discuss it in detail here, we are also making expeditious progress in removing species from the list under the Recovery program in light of the resources available for delisting, which is funded by a separate line item in the budget of the Endangered Species Program. During FY 2016, we completed delisting rules for seven species.) As discussed below, given the limited resources available for listing, we find that we are making expeditious progress in adding qualified species to the Lists.

We provide below tables cataloguing the work of the Service’s Listing

Program in FY 2016. This work includes all three of the steps necessary for adding species to the Lists: (1) Identifying species that may warrant listing; (2) undertaking the evaluation of the best available scientific data about those species and the threats they face in preparation for a proposed or final determination; and (3) adding species to the Lists by publishing proposed and final listing rules that include a summary of the data on which the rule is based and show the relationship of that data to the rule. After taking into consideration the limited resources available for listing, the competing demands for those funds, and the completed work catalogued in the tables below, we find that we are making expeditious progress to add qualified species to the Lists.

First, we are making expeditious progress in listing qualified species. In FY 2016, we resolved the status of 97 species that we determined, or had previously determined, qualified for listing. Moreover, for 78 of those species, the resolution was to add them to the Lists, some with concurrent designations of critical habitat, and for 1 species we published a withdrawal of the proposed rule. We also proposed to list an additional 18 qualified species.

Second, we are making expeditious progress in working towards adding qualified species to the Lists. In FY 2016, we worked on developing proposed listing rules or not-warranted 12-month petition findings for 3 species (most of them with concurrent critical habitat proposals). Although we have not yet completed those actions, we are making expeditious progress towards doing so.

Third, we are making expeditious progress in identifying additional

species that may qualify for listing. In FY 2016, we completed 90-day petition findings for 57 species and 12-month petition findings for 30 species.

Our accomplishments this year should also be considered in the broader context of our commitment to reduce the number of candidate species for which we have not made final determinations whether to list. On May 10, 2011, the Service filed in the MDL Litigation a settlement agreement that put in place an ambitious schedule for completing proposed and final listing determinations at least through FY 2016; the court approved that settlement agreement on September 9, 2011. That agreement required, among other things, that for all 251 species that were included as candidates in the 2010 CNOR, the Service submit to the **Federal Register** proposed listing rules or not-warranted findings by the end of FY 2016, and for any proposed listing rules, the Service complete final listing determinations within the statutory time frame. The Service has completed proposed listing rules or not-warranted findings for all 251 of the 2010 candidate species, as well as final listing rules for 140 of those proposed rules, and is therefore making adequate progress towards meeting all of the requirements of the MDL Settlement Agreement. Both by entering into the settlement agreement and by making progress towards final listing determinations for those species proposed for listing (of the 251 species on the 2010 candidate list), the Service is making expeditious progress to add qualified species to the lists.

The Service’s progress in FY 2016 included completing and publishing the following determinations:

**FY 2016 COMPLETED LISTING ACTIONS**

Publication date	Title	Actions	FR pages
12/22/2015 .....	90-Day and 12-month Findings on a Petition to List the Miami Tiger Beetle as an Endangered or Threatened Species; Proposed Endangered Species Status for the Miami Tiger Beetle.	90-Day and 12-month petition findings—Substantial and warranted; Proposed listing; Endangered.	80 FR 79533–79554.
1/6/2016 .....	12-Month Finding on a Petition to List the Alexander Archipelago Wolf as an Endangered or Threatened Species.	12-Month petition finding; Not warranted .....	81 FR 435–458.
1/12/2016 .....	90-Day Findings on 17 Petitions .....	90-Day petition findings; Substantial and not substantial.	81 FR 1368–1375.
3/16/2016 .....	90-Day Findings on 29 Petitions .....	90-Day petition findings; Substantial and not substantial.	81 FR 14058–14072.
4/5/2016 .....	12-Month Findings on Petitions To List Island Marble Butterfly, San Bernardino Flying Squirrel, Spotless Crake, and Sprague’s Pipit as Endangered or Threatened Species.	12-Month petition finding; Warranted but precluded and; Not warranted; Candidate removal.	81 FR 19527–19542.

## FY 2016 COMPLETED LISTING ACTIONS—Continued

Publication date	Title	Actions	FR pages
4/6/2016 .....	Final Rule to List Eleven Distinct Population Segments of the Green Sea Turtle ( <i>Chelonia mydas</i> ) as Endangered or Threatened and Revision of Current Listings Under the Endangered Species Act.	Final Listing; Endangered and Threatened .....	81 FR 20057–20090.
4/7/2016 .....	Final Listing Determination for the Big Sandy Crayfish and the Guyandotte River Crayfish.	Final Listing; Endangered and Threatened .....	81 FR 20449–20481.
4/18/2016 .....	Withdrawal of the Proposed Rule To List the West Coast Distinct Population Segment of Fisher.	Proposed Listing; Withdrawal .....	81 FR 22709–22808.
6/22/2016 .....	Threatened Species Status for the Elfin-Woods Warbler With 4(d) Rule.	Final Listing; Threatened .....	81 FR 40534–40547.
7/6/2016 .....	12-Month Findings on Petitions To List the Eagle Lake Rainbow Trout and the Ichetucknee Siltsnail as Endangered or Threatened Species.	12-Month petition finding; Not warranted .....	81 FR 43972–43979.
8/10/2016 .....	Endangered Species Status for Texas Hornshell.	Proposed Listing; Endangered .....	81 FR 52796–52809.
8/17/2016 .....	Threatened Status for <i>Lepidium papilliferum</i> (Slickspot Peppergrass) Throughout Its Range.	Final Listing; Threatened .....	81 FR 55057–55084.
9/9/2016 .....	Endangered Species Status for Guadalupe Fescue.	Proposed Listing; Endangered .....	81 FR 62450–62455.
9/13/2016 .....	Threatened Species Status for <i>Platanthera integrilabia</i> (White Fringeless Orchid).	Proposed Listing; Threatened .....	81 FR 62826–62833.
9/14/2016 .....	90-Day Findings on 10 Petitions .....	90-Day petition findings; Substantial and not substantial.	81 FR 63160–63165.
9/15/2016 .....	Threatened Species Status for <i>Chorizanthe parryi</i> var. <i>fernandina</i> (San Fernando Valley Spineflower).	Proposed Listing; Threatened .....	81 FR 63454–63466.
9/20/2016 .....	Threatened Species Status for the liwi ( <i>Drepanis coccinea</i> ).	12-Month petition finding; Warranted; Proposed Listing; Threatened.	81 FR 64414–64426.
9/21/2016 .....	Endangered Species Status for Sonoyta Mud Turtle.	Proposed Listing; Endangered .....	81 FR 64829–64843.
9/21/2016 .....	12-Month Findings on Petitions To List Nine Species as Endangered or Threatened Species.	12-Month petition findings; Not warranted; Candidate removals.	81 FR 64843–64857.
9/21/2016 .....	Threatened Species Status for Pearl Darter .....	Proposed Listing; Threatened .....	81 FR 64857–64868.
9/22/2016 .....	Endangered Species Status for Rusty Patched Bumble Bee.	12-Month petition finding; Warranted; Proposed Listing; Endangered.	81 FR 65324–65334.
9/22/2016 .....	Endangered Status for Five Species from American Samoa.	Final Listing; Threatened .....	81 FR 65465–65508.
9/29/2016 .....	Endangered Species Status for <i>Chamaecrista lineata</i> var. <i>keyensis</i> (Big Pine Partridge Pea), <i>Chamaesyce deltoidea</i> ssp. <i>serpyllum</i> (Wedge Spurge), and <i>Linum arenicola</i> (Sand Flax), and Threatened Species Status for <i>Argythamnia blodgettii</i> (Blodgett's Silverbush).	Final Listing; Threatened and Endangered .....	81 FR 66842–66865.
9/30/2016 .....	Threatened Species Status for the Eastern Massasauga Rattlesnake.	Final Listing; Threatened .....	81 FR 67193–67214.
9/30/2016 .....	Endangered Species Status for the Kenk's Amphipod.	Proposed Listing; Endangered .....	81 FR 67270–67287.
9/30/2016 .....	Endangered Status for 49 Species From the Hawaiian Islands.	Final Listing; Endangered .....	81 FR 67786–67860.
10/4/2016 .....	12-Month Finding on a Petition to List the Western Glacier Stonefly as an Endangered or Threatened Species; Proposed Threatened Species Status for Meltwater Lednian Stonefly and Western Glacier Stonefly.	12-Month petition finding; Warranted; Proposed Listing; Threatened.	81 FR 68379–68397.
10/5/2016 .....	Threatened Species Status for Kentucky Arrow Darter with 4(d) Rule.	Final Listing; Threatened .....	81 FR 68963–68985.
10/5/2016 .....	Endangered Species Status for the Miami Tiger Beetle ( <i>Cicindelia floridana</i> ).	Final Listing; Endangered .....	81 FR 68985–69007.
10/6/2016 .....	Threatened Species Status for Suwannee Moccasinshell.	Final Listing; Threatened .....	81 FR 69417–69425.
10/6/2016 .....	12-Month Findings on Petitions To List 10 Species as Endangered or Threatened Species.	12-Month petition finding; Not warranted; Candidate removal.	81 FR 69425–69442.
10/6/2016 .....	Proposed Threatened Species Status for Louisiana pinesnake.	Proposed Listing; Threatened .....	81 FR 69454–69475.
10/6/2016 .....	Endangered Species Status for Black Warrior Waterdog.	Proposed Listing; Endangered .....	81 FR 69500–69508.



FY 2016 COMPLETED LISTING ACTIONS—Continued

Publication date	Title	Actions	FR pages
10/11/2016 .....	Proposed Threatened Species Status for <i>Sideroxylon reclinatum</i> ssp. <i>austrofloridense</i> (Everglades Bully), <i>Digitaria pauciflora</i> (Florida Pineland Crabgrass), and <i>Chamaesyce deltoidea</i> ssp. <i>pinetorum</i> (Pineland Sandmat) and Endangered Species Status for <i>Dalea carthagenensis</i> var. <i>floridana</i> (Florida Prairie-Clover).	Proposed Listing; Threatened; Endangered .....	81 FR 70282–70308.

Our expeditious progress also included work on listing actions that we funded in previous fiscal years and in FY 2016, but did not complete in FY 2016. For these species, we have

completed the first step, and have been working on the second step, necessary for adding species to the Lists. These actions are listed below. The Pacific walrus proposed listing determination

in the top portion of the table is being conducted under a deadline set by a court through a court-approved settlement agreement.

ACTIONS FUNDED IN PREVIOUS FYS AND FY 2016 BUT NOT YET COMPLETED

Species	Action
<b>Actions Subject to Court Order/Settlement Agreement</b>	
Pacific walrus .....	Proposed listing determination.
<b>Other Actions</b>	
Hermes copper butterfly .....	Proposed listing determination.
<i>Cirsium wrightii</i> (Wright’s marsh thistle) .....	Proposed listing determination.

We also funded work on resubmitted petition findings for 29 candidate species (species petitioned prior to the last CNOR). We did not include an updated assessment form as part of our resubmitted petition findings for the three candidate species for which we are preparing either proposed listing determinations or not-warranted 12-month findings. However, in the course of preparing the proposed listing determinations or 12-month not-warranted findings for those species, we have continued to monitor new information about their status so that we can make prompt use of our authority under section 4(b)(7) of the ESA in the case of an emergency posing a significant risk to the well-being of any of these candidate species; see summaries below regarding publication of these determinations (these species will remain on the candidate list until a proposed listing rule is published). Because the majority of these petitioned species were already candidate species prior to our receipt of a petition to list them, we had already assessed their status using funds from our Candidate Conservation Program, so we continue to monitor the status of these species through our Candidate Conservation Program. The cost of updating the species assessment forms and publishing the joint publication of the CNOR and resubmitted petition findings

is shared between the Listing Program and the Candidate Conservation Program. During FY 2016, we also funded work on resubmitted petition findings for petitions to uplist three listed species (one grizzly bear population, Delta smelt, and *Sclerocactus brevispinus* (Pariette cactus)), for which we had previously received a petition and made a warranted-but-precluded finding. Another way that we have been expeditious in making progress to add qualified species to the Lists is that we have endeavored to make our listing actions as efficient and timely as possible, given the requirements of the relevant law and regulations and constraints relating to workload and personnel. We are continually considering ways to streamline processes or achieve economies of scale, and have been batching related actions together. Given our limited budget for implementing section 4 of the ESA, these efforts also contribute towards finding that we are making expeditious progress to add qualified species to the Lists. Although we have not resolved the listing status of all of the species we identified as candidates after 2010, we continue to contribute to the conservation of these species through several programs in the Service. In particular, the Candidate Conservation

Program, which is separately budgeted, focuses on providing technical expertise for developing conservation strategies and agreements to guide voluntary on-the-ground conservation work for candidate and other at-risk species. The main goal of this program is to address the threats facing candidate species. Through this program, we work with our partners (other Federal agencies, State agencies, Tribes, local governments, private landowners, and private conservation organizations) to address the threats to candidate species and other species at risk. We are currently working with our partners to implement voluntary conservation agreements for more than 110 species covering 6.1 million acres of habitat. In some instances, the sustained implementation of strategically designed conservation efforts has culminated in making listing unnecessary for species that are candidates for listing or for which listing has been proposed (see [http://ecos.fws.gov/tess\\_public/reports/non-listed-species-precluded-from-listing-due-to-conservation-report](http://ecos.fws.gov/tess_public/reports/non-listed-species-precluded-from-listing-due-to-conservation-report)). Findings for Petitioned Candidate Species Below are updated summaries for petitioned candidates for which we published findings under section 4(b)(3)(B) of the ESA. In accordance

with section 4(b)(3)(C)(i), we treat any petitions for which we made warranted-but-precluded 12-month findings within the past year as having been resubmitted on the date of the warranted-but-precluded finding. We are making continued warranted-but-precluded 12-month findings on the petitions for these species.

#### Mammals

Peñasco least chipmunk (*Tamias minimus atristria*)—The following summary is based on information contained in our files. Peñasco least chipmunk is endemic to the White Mountains, Otero and Lincoln Counties, and the Sacramento Mountains, Otero County, New Mexico. The Peñasco least chipmunk historically had a broad distribution throughout the Sacramento Mountains within ponderosa pine forests. The last verification of persistence of the Sacramento Mountains population of Peñasco least chipmunk was in 1966, and the subspecies appears to be extirpated from the Sacramento Mountains. The only remaining known distribution of the Peñasco least chipmunk is restricted to open, high-elevation talus slopes within a subalpine grassland, located in the Sierra Blanca area of the White Mountains in Lincoln and Otero Counties, New Mexico.

The Peñasco least chipmunk faces threats from present or threatened destruction, modification, and curtailment of its habitat from the alteration or loss of mature ponderosa pine forests in one of the two historically occupied areas. The documented decline in occupied localities, in conjunction with the small numbers of individuals captured, is linked to widespread habitat alteration. Moreover, the highly fragmented nature of its distribution is a significant contributor to the vulnerability of this subspecies and increases the likelihood of very small, isolated populations being extirpated. As a result of this fragmentation, even if suitable habitat exists (or is restored) in the Sacramento Mountains, the likelihood of natural recolonization of historical habitat or population expansion from the White Mountains is extremely remote. Considering the high magnitude and immediacy of these threats to the subspecies and its habitat, and the vulnerability of the White Mountains population, we conclude that the Peñasco least chipmunk is in danger of extinction throughout all of its known range now or in the foreseeable future.

Because the one known remaining extant population of Peñasco least chipmunk in the White Mountains is

particularly susceptible to extinction as a result of small, reduced population sizes, and its isolation due to the lack of contiguous habitat, even a small impact on the White Mountains could have a very large impact on the status of the subspecies as a whole. The combination of its restricted range, apparent small population size, and fragmented historical habitat make the White Mountains population inherently vulnerable to extinction due to effects of small population sizes (e.g., loss of genetic diversity). These impacts are likely to be seen in the population at some point in the foreseeable future, but do not appear to be affecting this population currently as it appears to be stable at this time. Therefore, we conclude that the threats to this population are of high magnitude, but not imminent, and we assign an LPN of 6 to the subspecies.

Sierra Nevada red fox, Sierra Nevada DPS (*Vulpes vulpes nector*)—The following summary is based on information contained in our files and in our warranted-but-precluded finding, published in the **Federal Register** on October 8, 2015 (80 FR 60990). The Sierra Nevada red fox is a subspecies of red fox found at high elevations (above 4,000 ft) in the Cascade and Sierra Nevada mountains of Oregon and California. It is somewhat smaller than lowland-dwelling red foxes, with a thicker coat and furry pads on its feet during winter months to facilitate travel over snow. The subspecies consists of two distinct population segments (DPSs), one in the Sierra Nevada Mountains and the other in the Cascades. The only known remnant of the Sierra Nevada DPS is a population in the Sonora Pass area estimated to contain approximately 29 adults, including an estimated 14 breeding individuals.

The Sierra Nevada DPS originally extended along the Sierra Nevada Mountains above about 1,200 m (3,937 ft), from Sierra County south into Inyo and Tulare Counties. Recent sightings have been limited to the general area around Sonora Pass, and to the northern portion of Yosemite National Park. Those areas are connected by high-quality habitat, facilitating potential travel between them. The Yosemite sightings were collected by remote camera on 3 days in the winter of 2014–2015, and indicate one to three individuals. The sightings around Sonora Pass primarily consist of photographs and genetically-tested hair or scat samples collected from 2011 to 2014 as part of a study of red foxes in the area. The study covered approximately 50 square miles (130

square kilometers), which was estimated to constitute 20 to 50 percent of the contiguous high-quality habitat in the general area. Sierra Nevada red fox numbers in the study area dropped from six in 2011 to two in 2014. During the same time period, the study also documented an increase in nonnative red foxes from zero to two (possibly three), and an increase in the number of hybrids from zero to eight. Scientists identified an additional three hybrids in 2013, but they were no longer in the area in 2014. There is no evidence of hybrids in the study area since 2014.

The Sierra Nevada DPS of the Sierra Nevada red fox may be vulnerable to extinction from genetic swamping (gradual loss of the identifying characteristics of a population due to extensive hybridization). The DPS may also be vulnerable to outbreeding depression (lowered survival or reproductive fitness in hybrids). Because the DPS consists of few individuals, any portions of the population not undergoing hybridization may be subject to inbreeding depression (congenital defects due to breeding among close relatives). If additional interbreeding with nonnative foxes is curtailed, then inbreeding depression may also be a future concern for those portions of the population that have undergone hybridization, because hybridization can introduce new deleterious alleles into the population. Small populations may also suffer proportionately greater impacts from deleterious chance events such as storms or local disease outbreaks. Finally, the DPS may be made more susceptible to extinction because of competition with coyotes. Coyotes are known to chase and kill red foxes, thereby excluding them from necessary habitat. Normally they are kept out of high-elevation areas during winter, and during the red-fox pupping season in early spring, by high snow banks, but coyotes have recently been found living year-round in areas around Sonora Pass occupied by Sierra Nevada red foxes. Global climate change may facilitate encroachment of coyotes into the area by limiting deposition and longevity of high-elevation snowpacks in the Sierra Nevada Mountains. The threats to this red fox population are ongoing and, therefore, imminent. The threats are high in magnitude because the population is so small (fewer than 50 adults), and it could be extirpated by any of the population-level threats discussed above. Therefore, we assigned the Sierra Nevada DPS of the Sierra Nevada red fox a LPN of 3.

Red tree vole, north Oregon coast DPS (*Arborimus longicaudus*)—The

following summary is based on information contained in our files and in our initial warranted-but-precluded finding, published in the **Federal Register** on October 13, 2011 (76 FR 63720). Red tree voles are small, mouse-sized rodents that live in conifer forests and spend almost all of their time in the tree canopy. They are one of the few animals that can persist on a diet of conifer needles, which is their principal food. Red tree voles are endemic to the humid, coniferous forests of western Oregon (generally west of the crest of the Cascade Range) and northwestern California (north of the Klamath River). The north Oregon coast DPS of the red tree vole comprises that portion of the Oregon Coast Range from the Columbia River south to the Siuslaw River. Red tree voles demonstrate strong selection for nesting in older conifer forests, which are now relatively rare across the DPS. Red tree voles generally avoid younger forests, and while their nests are found in younger forests, these forests are unlikely to provide long-term persistence of red tree vole populations.

Although data are not available to rigorously assess population trends, information from retrospective surveys indicates population numbers of red tree voles have declined in the DPS and are largely absent in areas where they were once relatively abundant. Older forests that provide habitat for red tree voles are limited and highly fragmented, while ongoing forest practices in much of the DPS maintain the remnant patches of older forest in a highly fragmented and isolated condition. Modeling indicates that 11 percent of the DPS currently contains tree vole habitat, largely restricted to the 22 percent of the DPS that is under Federal ownership.

Existing regulatory mechanisms on State and private lands are not preventing continued harvest of forest stands at a scale and extent that would be meaningful for conserving red tree voles. Biological characteristics of red tree voles, such as small home ranges, limited dispersal distances, and low reproductive potential, limit their ability to persist in areas of extensive habitat loss and alteration. These biological characteristics also make it difficult for the tree voles to recolonize isolated habitat patches. Due to the species' reduced distribution, the red tree vole is vulnerable to random environmental disturbances that may remove or further isolate large blocks of already limited habitat, and to extirpation within the DPS from such factors as lack of genetic variability, inbreeding depression, and demographic stochasticity. Although the

entire population is experiencing threats, the impact is less pronounced on Federal lands, where much of the red tree vole habitat remains. Hence, the magnitude of these threats is moderate to low. The threats are imminent because habitat loss and reduced distribution are currently occurring within the DPS. Therefore, we have retained an LPN of 9 for this DPS.

Pacific walrus (*Odobenus rosmarus divergens*)—We continue to find that listing this subspecies is warranted but precluded as of the date of publication of this notice. However, we are working on a thorough review of all available data and expect to publish either a proposed listing rule or a 12-month not-warranted finding prior to making the next annual resubmitted petition 12-month finding. In the course of preparing a proposed listing rule or not-warranted petition finding, we are continuing to monitor new information about this subspecies' status so that we can make prompt use of our authority under section 4(b)(7) of the ESA in the case of an emergency posing a significant risk to the subspecies.

#### Birds

Red-crowned parrot (*Amazona viridigenalis*)—The following summary is based on information contained in the notice of 12-month finding (76 FR 62016; October 6, 2011), scientific reports, journal articles, and newspaper and magazine articles, and on communications with internal and external partners. Currently, there are no changes to the range or distribution of the red-crowned parrot. The red-crowned parrot is non-migratory, and occurs in fragmented areas of isolated habitat in the Mexican states of Veracruz, San Luis Potosi, Nuevo Leon, Tamaulipas, and northeast Queretaro, with the majority of its remaining range in Tamaulipas. In Texas, red-crowned parrots occur in the cities of Mission, McAllen, Pharr, and Edinburg (Hidalgo County) and in Brownsville, Los Fresnos, San Benito, and Harlingen (Cameron County). Feral populations also exist in southern California, Puerto Rico, Hawaii, and Florida, and escaped birds have been reported in central Texas. As of 2004, half of the wild population is believed to be found in the United States.

The species is nomadic during the winter (non-breeding) season when large flocks range widely to forage, moving tens of kilometers during a single flight in Mexico. The species within Texas is thought to move between urban areas in search for food and other available resources. Parrots were found to occur exclusively in

urban habitats in the Texas Lower Rio Grande Valley during the breeding season. Loss of nesting habitat is a concern for the species in southern Texas. Nest boxes were provided in 2011, in areas where the red-crowned parrots had actively traveled during the prior spring, summer, and fall months; however, as of March 2013, these nest sites had not been used. Recent monitoring efforts for red-crowned parrots in Mexico have been done on a relatively localized level, taking place on pastureland in southeastern Tamaulipas and in forested areas of the Tamaulipan Sierras nearby to Ciudad Victoria. In southern Texas, red-crowned parrots have been included in Christmas Bird Counts, and special monitoring efforts have included an online iNaturalist project developed in 2015, and an intensive, one-night roost survey in January 2016.

The primary threats within Mexico and Texas remain habitat destruction and modification from logging, deforestation, conversion of suitable habitat, and urbanization; trapping; and illegal trade. Recent reassessment of a site in southeastern Tamaulipas, first studied in the 1990s, showed red-crowned parrots to be persisting in pastureland with remaining large trees, providing some hope that this species can coexist with ranching, provided that large trees are left standing and there is a high level of watchfulness to prevent poaching. Multiple laws and regulations have been passed to control illegal trade, but they are not adequately enforced; poaching of nests has been documented as recently as 2015. In addition, existing regulations do not address the habitat threats to the species. In South Texas, at least four city ordinances have been put in place that prohibit malicious acts (injury, mortality) to birds and their habitat. Texas Parks and Wildlife Department now considers the species to be indigenous in Texas, a classification that affords State protection for the individual parrots. Conservation efforts include monitoring and habitat-use research, as well as education and outreach in Mexico and Texas. Conservation also includes revegetation efforts, as well as conservation of existing native tracts of land, to provide habitat in the future once trees have matured. Threats to the species are extensive and are imminent, and, therefore, we have determined that an LPN of 2 remains appropriate for the species.

#### Reptiles

Gopher tortoise, eastern population (*Gopherus polyphemus*) — The

following summary is based on information in our files. The gopher tortoise is a large, terrestrial, herbivorous turtle that reaches a total length up to 15 inches (in) (38 centimeters (cm)) and typically inhabits the sandhills, pine/scrub oak uplands, and pine flatwoods associated with the longleaf pine (*Pinus palustris*) ecosystem. A fossorial animal, the gopher tortoise is usually found in areas with well-drained, deep, sandy soils; an open tree canopy; and a diverse, abundant, herbaceous groundcover.

The gopher tortoise ranges from extreme southern South Carolina south through peninsular Florida, and west through southern Georgia, Florida, southern Alabama, and Mississippi, into extreme southeastern Louisiana. In the eastern portion of the gopher tortoise's range in South Carolina, Florida, Georgia, and Alabama (east of the Mobile and Tombigbee Rivers) it is a candidate species; the gopher tortoise is federally listed as threatened in the western portion of its range, which includes Alabama (west of the Mobile and Tombigbee Rivers), Mississippi, and Louisiana.

The primary threat to the gopher tortoise is habitat fragmentation, destruction, and modification (either deliberately or from inattention), including conversion of longleaf pine forests to incompatible silvicultural or agricultural habitats, urbanization, shrub/hardwood encroachment (mainly from fire exclusion or insufficient fire management), and establishment and spread of invasive species. Other threats include disease and predation (mainly on nests and young tortoises), and existing regulatory mechanisms do not address habitat enhancement or protection in perpetuity for relocated tortoise populations. The magnitude of threats to the gopher tortoise in the eastern part of its range is moderate to low, as populations extend over a broad geographic area and conservation measures are in place in some areas. However, because the species is currently being affected by a number of threats including destruction and modification of its habitat, disease, predation, and exotics, the threat is imminent. Thus, we have assigned an LPN of 8 for this species.

#### Amphibians

Striped newt (*Notophthalmus perstriatus*)—The following summary is based on information contained in our files. The striped newt is a small salamander that inhabits ephemeral ponds surrounded by upland habitats of high pine, scrubby flatwoods, and scrub. Longleaf pine–turkey oak stands with

intact ground cover containing wiregrass are the preferred upland habitat for striped newts, followed by scrub, then flatwoods. Life-history stages of the striped newt are complex, and include the use of both aquatic and terrestrial habitats throughout their life cycle. Striped newts are opportunistic feeders that prey on a variety of items such as frog eggs, worms, snails, fairy shrimp, spiders, and insects (adult and larvae) that are of appropriate size. They occur in appropriate habitats from the Atlantic Coastal Plain of southeastern Georgia to the north-central peninsula of Florida and through the Florida panhandle into portions of southwest Georgia, upward to Taylor County in western Georgia.

Prior to 2014, scientists thought there was a 125-km (78-mi) separation between the western and eastern portions of the striped newt's range. However, in 2014, the discovery of five adult striped newts in Taylor County, Florida, represents a significant reduction in the gap between these areas. In addition to the newts discovered in Taylor County, Florida, researchers also discovered 15 striped newts (14 pedomorphs and 1 non-gilled adult) in a pond in Osceola County, Florida, in 2014, which represents a significant range expansion to the south. The historical range of the striped newt was likely similar to the current range. However, loss of native longleaf habitat, fire suppression, and the natural patchy distribution of upland habitats used by striped newts have resulted in fragmentation of existing populations. Other threats to the species include disease and drought, and existing regulatory mechanisms have not addressed the threats. Overall, the magnitude of the threats is moderate, and the threats are ongoing and, therefore, imminent. Therefore, we assigned an LPN of 8 to the striped newt.

Berry Cave salamander (*Gyrinophilus gulolineatus*)—The following summary is based on information in our files. The Berry Cave salamander is recorded from Berry Cave in Roane County; from Mud Flats, Aycock Spring, Christian, Meades Quarry, Meades River, Fifth, and The Lost Puddle caves in Knox County; from Blythe Ferry Cave in Meigs County; from Small Cave in McMinn County; and from an unknown cave in Athens, McMinn County, Tennessee. These cave systems are all located within the Upper Tennessee River and Clinch River drainages. A total of 113 caves in Middle and East Tennessee were surveyed from the time period of April 2004 through June 2007, resulting in observations of 63 Berry Cave

salamanders. These surveys documented two new populations of Berry Cave salamanders at Aycock Spring and Christian caves and led species experts to conclude that Berry Cave salamander populations are robust at Berry and Mudflats caves, where population declines had been previously reported. Further survey efforts in Berry Cave and Mudflats Cave in 2014 and early 2015 confirmed that viable populations of Berry Cave salamanders persist in these caves. One juvenile Berry Cave salamander was spotted during a May 10, 2014, survey in Small Cave, McMinn County. Significant sediment deposition was observed in the sinkhole entrance to the cave, likely due to nearby agricultural and pastureland use.

Ongoing threats to this species include lye leaching in the Meades Quarry Cave as a result of past quarrying activities, the possible development of a roadway with potential to affect the recharge area for the Meades Quarry Cave system, urban development in Knox County, water-quality impacts despite existing State and Federal laws, and hybridization between spring salamanders and Berry Cave salamanders in Meades Quarry Cave. These threats, coupled with confined distribution of the species and apparent low population densities, are all factors that leave the Berry Cave salamander vulnerable to extirpation. We have determined that the Berry Cave salamander faces ongoing and therefore imminent threats. The threats to the salamander are moderate in magnitude because, although some of the threats to the species are widespread, the salamander still occurs in several different cave systems, and existing populations appear stable. We continue to assign this species an LPN of 8.

#### Fishes

Longfin smelt (*Spirinchus thaleichthys*), Bay-Delta DPS—The following summary is based on information contained in our files and the petition we received on August 8, 2007. On April 2, 2012 (77 FR 19756), we determined that the longfin smelt San Francisco Bay-Delta distinct population segment (Bay-Delta DPS) warranted listing as an endangered or threatened species under the ESA, but that listing was precluded by higher-priority listing actions. Longfin smelt measure 9–11 cm (3.5–4.3 in) standard length. Longfin smelt are considered pelagic and anadromous, although anadromy in longfin smelt is poorly understood, and certain populations in other parts of the species' range are not anadromous and complete their entire

life cycle in freshwater lakes and streams. Longfin smelt usually live for 2 years, spawn, and then die, although some individuals may spawn as 1- or 3-year-old fish before dying. In the Bay-Delta, longfin smelt are believed to spawn primarily in freshwater in the lower reaches of the Sacramento River and San Joaquin River.

Longfin smelt numbers in the Bay-Delta have declined significantly since the 1980s. Abundance indices derived from the Fall Midwater Trawl (FMWT), Bay Study Midwater Trawl (BSMT), and Bay Study Otter Trawl (BSOT) all show marked declines in Bay-Delta longfin smelt populations from 2002 to 2016. Longfin smelt abundance over the last decade is the lowest recorded in the 40-year history of the FMWT monitoring surveys of the California Department of Fish and Wildlife (formerly the California Department of Fish and Game). The 2015 longfin smelt abundance index numbers for the FMWT are the lowest ever recorded.

The primary threat to the DPS is from reduced freshwater flows. Freshwater flows, especially winter-spring flows, are significantly correlated with longfin smelt abundance (*i.e.*, longfin smelt abundance is lower when winter-spring flows are lower). The long-term decline in abundance of longfin smelt in the Bay-Delta has been partially attributed to reductions in food availability and disruptions of the Bay-Delta food web caused by establishment of the nonnative overbite clam (*Corbula amurensis*) and likely by increasing ammonium concentrations. The threats remain high in magnitude, as they pose a significant risk to the DPS throughout its range. The threats are ongoing, and thus are imminent. Thus, we are maintaining an LPN of 3 for this population.

#### Clams

Texas fatmucket (*Lampsilis bracteata*)—The following summary is based on information contained in our files. The Texas fatmucket is a large, elongated freshwater mussel that is endemic to central Texas. Its shell can be moderately thick, smooth, and rhomboidal to oval in shape. Its external coloration varies from tan to brown with continuous dark brown, green-brown, or black rays, and internally it is pearly white, with some having a light salmon tint. This species historically occurred throughout the Colorado and Guadalupe-San Antonio River basins but is now known to occur only in nine streams within these basins in very limited numbers. All existing populations are represented by only one

or two individuals and are not likely to be stable or recruiting.

The Texas fatmucket is primarily threatened by habitat destruction and modification from impoundments, which scour river beds, thereby removing mussel habitat; decrease water quality; modify stream flows; and prevent host fish migration and distribution of freshwater mussels. This species is also threatened by sedimentation, dewatering, sand and gravel mining, and chemical contaminants. These threats may be exacerbated by the current and projected effects of climate change, population fragmentation and isolation, and the anticipated threat of nonnative species. Threats to the Texas fatmucket and its habitat are not being adequately addressed through existing regulatory mechanisms. Because of the limited distribution of this endemic species and its lack of mobility, these threats are likely to result in the extinction of the Texas fatmucket in the foreseeable future.

The threats to the Texas fatmucket are high in magnitude, because habitat loss and degradation from impoundments, sedimentation, sand and gravel mining, and chemical contaminants are widespread throughout the range of the Texas fatmucket and profoundly affect its survival and recruitment. These threats are exacerbated by climate change, which will increase the frequency and magnitude of droughts. Remaining populations are small, isolated, and highly vulnerable to stochastic events, which could lead to extirpation or extinction. These threats are imminent, because they are ongoing and will continue in the foreseeable future. Habitat loss and degradation have already occurred and will continue as the human population continues to grow in central Texas. Texas fatmucket populations may already be below the minimum viable population requirement, which causes a reduction in the resiliency of a population and an increase in the species' vulnerability to extinction. Based on imminent, high-magnitude threats, we maintained an LPN of 2 for the Texas fatmucket.

Texas fawnsfoot (*Truncilla macrodon*)—The following summary is based on information contained in our files. The Texas fawnsfoot is a small, relatively thin-shelled freshwater mussel that is endemic to central Texas. Its shell is long and oval, generally free of external sculpturing, with external coloration that varies from yellowish- or orangish-tan, brown, reddish-brown, to smoky-green with a pattern of broken rays or irregular blotches. The internal color is bluish-white or white and

iridescent posteriorly. This species historically occurred throughout the Colorado and Brazos River basins and is now known from only five locations. The Texas fawnsfoot has been extirpated from nearly all of the Colorado River basin and from much of the Brazos River basin. Of the populations that remain, only three are likely to be stable and recruiting; the remaining populations are disjunct and restricted to short stream reaches.

The Texas fawnsfoot is primarily threatened by habitat destruction and modification from impoundments, which scour river beds, thereby removing mussel habitat; decrease water quality; modify stream flows; and prevent host fish migration and distribution of freshwater mussels. The species is also threatened by sedimentation, dewatering, sand and gravel mining, and chemical contaminants. These threats may be exacerbated by the current and projected effects of climate change, population fragmentation and isolation, and the anticipated threat of nonnative species. Threats to the Texas fawnsfoot and its habitat are not being adequately addressed through existing regulatory mechanisms. Because of the limited distribution of this endemic species and its lack of mobility, these threats are likely to result in the extinction of the Texas fawnsfoot in the foreseeable future.

The threats to the Texas fawnsfoot are high in magnitude. Habitat loss and degradation from impoundments, sedimentation, sand and gravel mining, and chemical contaminants are widespread throughout the range of the Texas fawnsfoot and profoundly affect its habitat. These threats are exacerbated by climate change, which will increase the frequency and magnitude of droughts. Remaining populations are small, isolated, and highly vulnerable to stochastic events. These threats are imminent, because they are ongoing and will continue in the foreseeable future. Habitat loss and degradation has already occurred and will continue as the human population continues to grow in central Texas. The Texas fawnsfoot populations may already be below the minimum viable population requirement, which causes a reduction in the resiliency of a population and an increase in the species' vulnerability to extinction. Based on imminent, high-magnitude threats, we assigned the Texas fawnsfoot an LPN of 2.

Golden orb (*Quadrula aurea*)—The following summary is based on information contained in our files. The golden orb is a small, round-shaped freshwater mussel that is endemic to

central Texas. This species historically occurred throughout the Nueces-Frio and Guadalupe-San Antonio River basins and is now known from only nine locations in four rivers. The golden orb has been eliminated from nearly the entire Nueces-Frio River basin. Four of these populations appear to be stable and reproducing, and the remaining five populations are small and isolated and show no evidence of recruitment. It appears that the populations in the middle Guadalupe and lower San Marcos Rivers are likely connected. The remaining extant populations are highly fragmented and restricted to short reaches.

The golden orb is primarily threatened by habitat destruction and modification from impoundments, which scour river beds (thereby removing mussel habitat), decrease water quality, modify stream flows, and prevent host fish migration and distribution of freshwater mussels. The species is also threatened by sedimentation, dewatering, sand and gravel mining, and chemical contaminants. These threats may be exacerbated by the current and projected effects of climate change, population fragmentation and isolation, and the anticipated threat of nonnative species. Threats to the golden orb and its habitat are not being addressed by existing regulatory mechanisms. Because of the limited distribution of this endemic species and its lack of mobility, these threats may be likely to result in the golden orb becoming in danger of extinction in the foreseeable future.

The threats to the golden orb are moderate in magnitude. Although habitat loss and degradation from impoundments, sedimentation, sand and gravel mining, and chemical contaminants are widespread throughout the range of the golden orb and are likely to be exacerbated by climate change, which will increase the frequency and magnitude of droughts, four large populations remain, including one that was recently discovered, suggesting that the threats are not high in magnitude. The threats from habitat loss and degradation are imminent, because habitat loss and degradation have already occurred and will likely continue as the human population continues to grow in central Texas. Several golden orb populations may already be below the minimum viable population requirement, which causes a reduction in the resiliency of a population and an increase in the species' vulnerability to extinction. Based on imminent, moderate threats,

we maintain an LPN of 8 for the golden orb.

Smooth pimpleback (*Quadrula houstonensis*)—The following summary is based on information contained in our files. The smooth pimpleback is a small, round-shaped freshwater mussel that is endemic to central Texas. This species historically occurred throughout the Colorado and Brazos River basins and is now known from only nine locations. The smooth pimpleback has been eliminated from nearly the entire Colorado River and all but one of its tributaries, and has been limited to the central and lower Brazos River drainage. Five of the populations are represented by no more than a few individuals and are small and isolated. Six of the existing populations appear to be relatively stable and recruiting.

The smooth pimpleback is primarily threatened by habitat destruction and modification from impoundments, which scour river beds (thereby removing mussel habitat), decrease water quality, modify stream flows, and prevent host fish migration and distribution of freshwater mussels. The species is also threatened by sedimentation, dewatering, sand and gravel mining, and chemical contaminants. These threats may be exacerbated by the current and projected effects of climate change, population fragmentation, and isolation, and the anticipated threat of nonnative species. Threats to the smooth pimpleback and its habitat are not being adequately addressed through existing regulatory mechanisms. Because of the limited distribution of this endemic species and its lack of mobility, these threats may be likely to result in the smooth pimpleback becoming in danger of extinction in the foreseeable future.

The threats to the smooth pimpleback are moderate in magnitude. Although habitat loss and degradation from impoundments, sedimentation, sand and gravel mining, and chemical contaminants are widespread throughout the range of the smooth pimpleback and may be exacerbated by climate change, which will increase the frequency and magnitude of droughts, several large populations remain, including one that was recently discovered, suggesting that the threats are not high in magnitude. The threats from habitat loss and degradation are imminent, because they have already occurred and will continue as the human population continues to grow in central Texas. Several smooth pimpleback populations may already be below the minimum viable population requirement, which causes a reduction in the resiliency of a population and an

increase in the species' vulnerability to extinction. Based on imminent, moderate threats, we maintain an LPN of 8 for the smooth pimpleback.

Texas pimpleback (*Quadrula petrina*)—The following summary is based on information contained in our files. The Texas pimpleback is a large freshwater mussel that is endemic to central Texas. This species historically occurred throughout the Colorado and Guadalupe-San Antonio River basins, but it is now known to occur only in four streams within these basins. Only two populations appear large enough to be stable, but evidence of recruitment is limited in one of them (the Concho River population) so the San Saba River population may be the only remaining recruiting populations of Texas pimpleback. The remaining two populations are represented by one or two individuals and are highly disjunct.

The Texas pimpleback is primarily threatened by habitat destruction and modification from impoundments, which scour river beds (thereby removing mussel habitat), decrease water quality, modify stream flows, and prevent host fish migration and distribution of freshwater mussels. This species is also threatened by sedimentation, dewatering, sand and gravel mining, and chemical contaminants. These threats may be exacerbated by the current and projected effects of climate change (which will increase the frequency and magnitude of droughts), population fragmentation and isolation, and the anticipated threat of nonnative species. Threats to the Texas pimpleback and its habitat are not being addressed through existing regulatory mechanisms. Because of the limited distribution of this endemic species and its lack of mobility, these threats may be likely to result in the Texas pimpleback becoming in danger of extinction in the foreseeable future.

The threats to the Texas pimpleback are high in magnitude, because habitat loss and degradation from impoundments, sedimentation, sand and gravel mining, and chemical contaminants are widespread throughout the entire range of the Texas pimpleback and profoundly affect its survival and recruitment. The only remaining populations are small, isolated, and highly vulnerable to stochastic events, which could lead to extirpation or extinction. The threats are imminent, because habitat loss and degradation have already occurred and will continue as the human population continues to grow in central Texas. All Texas pimpleback populations may already be below the minimum viable

population requirement, which causes a reduction in the resiliency of a population and an increase in the species' vulnerability to extinction. Based on imminent, high-magnitude threats, we assigned the Texas pimpleback an LPN of 2.

#### Snails

Magnificent ramshorn (*Planorbella magnifica*)—Magnificent ramshorn is the largest North American air-breathing freshwater snail in the family Planorbidae. It has a discoidal (*i.e.*, coiling in one plane), relatively thin shell that reaches a diameter commonly exceeding 35 millimeters (mm) and heights exceeding 20 mm. The great width of its shell, in relation to the diameter, makes it easily identifiable at all ages. The shell is brown colored (often with leopard like spots) and fragile, thus indicating it is adapted to still or slow-flowing aquatic habitats. The magnificent ramshorn is believed to be a southeastern North Carolina endemic. The species was historically known from only four sites in the lower Cape Fear River Basin in North Carolina—all four sites appear to be extirpated. Although the complete historical range of the species is unknown, the size of the species and the fact that it was not reported until 1903 suggest that the species may have always been rare and localized.

Salinity and pH appear to have been major factors limiting the distribution of the magnificent ramshorn, as the snail prefers freshwater bodies with circumneutral pH (*i.e.*, pH within the range of 6.8–7.5). While members of the family Planorbidae are hermaphroditic, it is currently unknown whether magnificent ramshorns self-fertilize their eggs, mate with other individuals of the species, or both. Like other members of the Planorbidae family, the magnificent ramshorn is believed to be primarily a vegetarian, feeding on submerged aquatic plants, algae, and detritus. While several factors have likely contributed to the possible extirpation of the magnificent ramshorn in the wild, the primary factors include loss of habitat associated with the extirpation of beavers (and their impoundments) in the early 20th century, increased salinity and alteration of flow patterns, as well as increased input of nutrients and other pollutants. The magnificent ramshorn appears to be extirpated from the wild due to habitat loss and degradation resulting from a variety of human-induced and natural factors. The only known surviving individuals of the species are presently being held and propagated at a private residence, a lab

at North Carolina State University's Veterinary School, and the North Carolina Wildlife Resources Commission's Watha State Fish Hatchery.

While efforts have been made to restore habitat for the magnificent ramshorn at one of the sites known to have previously supported the species, all of the sites continue to be affected or threatened by the same factors (*i.e.*, salt-water intrusion and other water-quality degradation, nuisance-aquatic-plant control, storms, sea-level rise, etc.) believed to have resulted in extirpation of the species from the wild. Currently, only three captive populations exist: A population of the species comprised of approximately 300+ adults, a population with approximately 200+ adults, and a population of 50+ small individuals. Although captive populations of the species have been maintained since 1993, a single catastrophic event, such as a severe storm, disease, or predator infestation, affecting a captive population could result in the near extinction of the species. The threats are high in magnitude and ongoing—therefore, we assigned this species an LPN of 2.

#### Insects

Hermes copper butterfly (*Lycaena hermes*)—We continue to find that listing this species is warranted but precluded as of the date of publication of this notice. However, we are working on a thorough review of all available data and expect to publish either a proposed listing rule or a 12-month not-warranted finding prior to making the next annual resubmitted petition 12-month finding. In the course of preparing a proposed listing rule or not-warranted petition finding, we are continuing to monitor new information about this species' status so that we can make prompt use of our authority under section 4(b)(7) of the ESA in the case of an emergency posing a significant risk to the species.

Puerto Rican harlequin butterfly (*Atlantea tulita*)—The following summary is based on information in our files and in the petition we received on February 29, 2009. The Puerto Rican harlequin butterfly is endemic to Puerto Rico, and one of the four species endemic to the Greater Antilles within the genus *Atlantea*. This species occurs within the subtropical-moist-forest life zone in the northern karst region (*i.e.*, municipality of Quebradillas) of Puerto Rico, and in the subtropical-wet-forest life zone (*i.e.*, Maricao Commonwealth Forest, municipality of Maricao). The Puerto Rican harlequin butterfly population has been estimated at

around 50 adults in the northern karst region and fewer than 20 adults in the volcanic serpentine central mountains of the island. The Puerto Rican harlequin butterfly has only been found utilizing *Oplonia spinosa* (prickly bush) as its host plant (*i.e.*, plant used for laying the eggs, which also serves as a food source for development of the larvae).

The primary threats to the Puerto Rican harlequin butterfly are development, habitat fragmentation, and other natural or manmade factors such as human-induced fires, use of herbicides and pesticides, vegetation management, and climate change. These factors, if they occurred in habitat occupied by the species, would substantially affect the distribution and abundance of the species, as well as its habitat. In addition, due to the lack of effective enforcement of existing policies and regulations, the threats to the species' habitat are not being reduced. These threats are of a high magnitude and are imminent because the occurrence of known populations in areas that are subject to development, increased traffic, increased road maintenance and construction, and other threats directly affects the species during all life stages and is likely to result in population decreases. These threats are expected to continue and potentially increase in the foreseeable future. Therefore, we assign an LPN of 2 to the Puerto Rican harlequin butterfly. In 2015, the Service, through the Partners for Fish and Wildlife Program, signed a cooperative agreement with a local nongovernmental organization, Iniciativa Herpetológica, to promote the enhancement and conservation of suitable habitat for the Puerto Rican harlequin butterfly on private lands located within its range on the northern karst region of the island.

Rattlesnake-master borer moth (*Papaipema eryngii*)—Rattlesnake-master borer moths are obligate residents of undisturbed prairie remnants, savanna, and pine barrens that contain their only food plant, rattlesnake master (*Eryngium yuccifolium*). The rattlesnake-master borer moth is known from 31 sites in 7 States: Illinois, Arkansas, Kentucky, Oklahoma, North Carolina, Kansas, and Missouri. Currently 27 of the sites contain extant populations, 3 contain populations with unknown status, and 1 contains a population that is considered extirpated. The 14 Missouri populations and 1 Kansas population were identified in 2015 and are considered extant; however, there are no trend data for these sites.

Although the rattlesnake master plant is widely distributed across 26 States and is a common plant in remnant prairies, it is a conservative species, meaning it is not found in disturbed areas, with relative frequencies of less than 1 percent. The habitat range for the rattlesnake-master borer moth is very narrow and appears to be limiting for the species. The ongoing effects of habitat loss, fragmentation, degradation, and modification from agriculture, development, flooding, invasive species, and secondary succession have resulted in fragmented populations and population declines. Rattlesnake-master borer moths are affected by habitat fragmentation and population isolation. Almost all of the sites with extant populations of the rattlesnake-master borer moth are isolated from one another, with the populations in Kentucky, North Carolina, and Oklahoma occurring within a single site for each State, thus precluding recolonization from other populations. These small, isolated populations are likely to become unviable over time due to: Lower genetic diversity, reducing their ability to adapt to environmental change; the effects of stochastic events; and their inability to recolonize areas where they are extirpated.

Rattlesnake-master borer moths have life-history traits that make them more susceptible to outside stressors. They are univoltine (having a single flight per year), do not disperse widely, and are monophagous (have only one food source). The life history of the species makes it particularly sensitive to fire, which is the primary practice used in prairie management. The species is only safe from fire once it bores into the root of the host plant, which makes adult, egg, and first larval stages subject to mortality during prescribed burns and wildfires. Fire and grazing cause direct mortality to the moth and destroy food plants if the intensity, extent, or timing is not conducive to the species' biology. Although fire management is a threat to the species, lack of management is also a threat, and at least one site has become extirpated likely because of the succession to woody habitat. The species is sought after by collectors and the host plant is very easy to identify, making the moth susceptible to collection, and thus many sites are kept undisclosed to the public.

Existing regulatory mechanisms provide protection for 12 of the 16 sites containing rattlesnake-master borer moth populations recorded before 2015. The 15 populations identified in 2015 are under a range of protection and management levels. Illinois' endangered species statute provides regulatory

mechanisms to protect the species from potential impacts from actions such as development and collecting on the 10 Illinois sites; however, illegal collections of the species have occurred at two sites. A permit is required for collection by site managers within the sites in North Carolina and Oklahoma. The rattlesnake-master borer moth is also listed as endangered in Kentucky by the State's Nature Preserves Commission, although this status currently provides no statutory protection. There are no statutory mechanisms in place to protect the populations in North Carolina, Arkansas, or Oklahoma.

Some threats that the rattlesnake-master moth faces are high in magnitude, such as habitat conversion and fragmentation, and population isolation. These threats with the highest magnitude occur in many of the populations throughout the species' range, but although they are likely to affect each population at some time, they are not likely to affect all of the populations at any one time. Other threats, such as agricultural and nonagricultural development, mortality from implementation of some prairie management tools (such as fire), flooding, succession, and climate change, are of moderate to low magnitude. For example, the life history of rattlesnake-master borer moths makes them highly sensitive to fire, which can cause mortality of individuals through most of the year and can affect entire populations. Conversely, complete fire suppression can also be a threat to rattlesnake-master borer moths as prairie habitat declines and woody or invasive species become established such that the species' only food plant is not found in disturbed prairies. Although these threats can cause direct and indirect mortality of the species, they are of moderate or low magnitude because they affect only some populations throughout the range and to varying degrees. Overall, the threats are moderate. The threats are imminent, because they are ongoing; every known population of rattlesnake-master borer moth has at least one ongoing threat, and some have several working in tandem. Thus, we assigned an LPN of 8 to this species.

*Arapahoe snowfly (Arsapnia arapahoe)*—The following summary is based on information contained in our files. This insect is a winter stonefly associated with clean, cool, running waters. Adult snowflies emerge in late winter from the space underneath stream ice. Until 2013, the Arapahoe snowfly had been confirmed in only two streams (Elkhorn Creek and Young

Gulch), both of which are small tributaries of the Cache la Poudre River in the Roosevelt National Forest, Larimer County, Colorado. However, the species has not been identified in Young Gulch since 1986; it is likely that either the habitat became unsuitable or other unknown causes extirpated the species. Habitats at Young Gulch were further degraded by the High Park Fire in 2012, and potentially by a flash flood in September 2013. New surveys completed in 2013 and 2014 identified the Arapahoe snowfly in seven new localities, including Elkhorn Creek, Sheep Creek (a tributary of the Big Thompson River), Central Gulch (a tributary of Saint Vrain Creek), and Bummer's Gulch, Martin Gulch, and Bear Canyon Creek (tributaries of Boulder Creek in Boulder County). However, the numbers of specimens collected at each location were extremely low. These new locations occur on U.S. Forest Service land, Boulder County Open Space, and private land.

Climate change is a threat to the Arapahoe snowfly and modifies its habitats by reducing snowpacks, altering streamflows, increasing water temperatures, fostering mountain pine beetle outbreaks, and increasing the frequency of destructive wildfires. Limited dispersal capabilities, a restricted range, dependence on pristine habitats, and a small population size make the Arapahoe snowfly vulnerable to demographic stochasticity, environmental stochasticity, and random catastrophes. Furthermore, regulatory mechanisms are not addressing these threats, which may act cumulatively to affect the species. The threats to the Arapahoe snowfly are high in magnitude because they occur throughout the species' limited range. However, the threats are nonimminent. While limited dispersal capabilities, restricted range, dependence on pristine habitats, and small population size are characteristics that make this species vulnerable to stochastic events and catastrophic events (and potential impacts from climate change), there are no stochastic or catastrophic events that are currently occurring, and although temperatures are increasing, the increasing temperatures are not yet having adverse effects on the species. Therefore, we have assigned the Arapahoe snowfly an LPN of 5.

#### Flowering Plants

*Astragalus microcymbus* (Skiff milkvetch)—The following summary is based on information contained in our files and in the petition we received on July 30, 2007. Skiff milkvetch is a



perennial forb that dies back to the ground every year. It has a very limited range and a spotty distribution within Gunnison and Saguache Counties in Colorado, where it is found in open, park-like landscapes in the sagebrush-steppe ecosystem on rocky or cobbly, moderate-to-steep slopes of hills and draws.

The most significant threats to skiff milkvetch are recreation, roads, trails, and habitat fragmentation and degradation. Existing regulatory mechanisms are not addressing these threats to the species. Recreational impacts are likely to increase, given the close proximity of skiff milkvetch to the town of Gunnison and the increasing popularity of mountain biking, motorcycling, and all-terrain vehicles. Furthermore, the Hartman Rocks Recreation Area draws users, and contains over 40 percent of the skiff milkvetch units. Other threats to the species include residential and urban development; livestock, deer, and elk use; climate change; increasing periodic drought; nonnative, invasive cheatgrass; and wildfire. The threats to skiff milkvetch are moderate in magnitude, because, while serious and occurring rangewide, they do not collectively result in population declines on a short time scale. The threats are imminent, because the species is currently facing them in many portions of its range. Therefore, we have assigned skiff milkvetch an LPN of 8.

*Astragalus schmolliae* (Chapin Mesa milkvetch)—The following summary is based on information provided by Mesa Verde National Park and Colorado Natural Heritage Program, contained in our files, and in the petition we received on July 30, 2007. Chapin Mesa milkvetch is a narrow endemic perennial plant that grows in the mature pinyon-juniper woodland of mesa tops on Chapin Mesa in the Mesa Verde National Park and in the adjoining Ute Mountain Ute Tribal Park in southern Colorado.

The most significant threats to the species are degradation of habitat by fire, followed by invasion by nonnative cheatgrass and subsequent increase in fire frequency. These threats currently affect about 40 percent of the species' entire known range. Cheatgrass is likely to increase given its rapid spread and persistence in habitat disturbed by wildfires, fire and fuels management, and development of infrastructure, and given the inability of land managers to control it on a landscape scale. Other threats to Chapin Mesa milkvetch include fires, fire-break clearings, and drought. Existing regulatory mechanisms are not addressing the

threats. The threats to the species overall are imminent and moderate in magnitude, because the species is currently facing them in many portions of its range, but the threats do not collectively result in population declines on a short time scale. Therefore, we have assigned Chapin Mesa milkvetch an LPN of 8.

*Boechera pusilla* (Fremont County rockcress)—See above summary under Listing Priority Changes in Candidates.

*Cirsium wrightii* (Wright's marsh thistle)—We continue to find that listing this species is warranted but precluded as of the date of publication of this notice. However, we are working on a thorough review of all available data and expect to publish either a proposed listing rule or a 12-month not-warranted finding prior to making the next annual resubmitted petition 12-month finding. In the course of preparing a proposed listing rule or not-warranted petition finding, we are continuing to monitor new information about this species' status so that we can make prompt use of our authority under section 4(b)(7) of the ESA in the case of an emergency posing a significant risk to the species.

*Eriogonum soredium* (Frisco buckwheat)—The following summary is based on information in our files and the petition we received on July 30, 2007. Frisco buckwheat is a narrow-endemic perennial plant restricted to soils derived from Ordovician limestone outcrops. The range of the species is less than 5 square miles (13 square kilometers), with four known populations. All four populations occur exclusively on private lands in Beaver County, Utah, and each population occupies a very small area with high densities of plants. Available population estimates are highly variable and inaccurate due to the limited access for surveys associated with private lands.

The primary threat to Frisco buckwheat is habitat destruction from precious-metal and gravel mining. Mining for precious metals historically occurred within the vicinity of all four populations. Three of the populations are currently in the immediate vicinity of active limestone quarries. Ongoing mining in the species' habitat has the potential to extirpate one population in the near future and extirpate all populations in the foreseeable future. Ongoing exploration for precious metals and gravel indicate that mining will continue, but it will take time for the mining operations to be put into place and to affect the species. This will result in the loss and fragmentation of Frisco buckwheat populations over a longer time scale. Other threats to the species include nonnative species in

conjunction with surface disturbance from mining activities. Existing regulatory mechanisms are not addressing the threats to the species. Vulnerabilities of the species include small population size and climate change. The threats that Frisco buckwheat faces are moderate in magnitude, because while serious and occurring rangewide, the threats do not significantly reduce populations on a short time scale. The threats are imminent, because three of the populations are currently in the immediate vicinity of active limestone quarries. Therefore, we have assigned Frisco buckwheat an LPN of 8.

*Lepidium ostleri* (Ostler's peppergrass)—The following summary is based on information in our files and the petition we received on July 30, 2007. Ostler's peppergrass is a long-lived perennial herb in the mustard family that grows in dense, cushion-like tufts. Ostler's peppergrass is a narrow endemic restricted to soils derived from Ordovician limestone outcrops. The range of the species is less than 5 square miles (13 square kilometers), with only four known populations. All four populations occur exclusively on private lands in the southern San Francisco Mountains of Beaver County, Utah. Available population estimates are highly variable and inaccurate due largely to the limited access for surveys associated with private lands.

The primary threat to Ostler's peppergrass is habitat destruction from precious-metal and gravel mining. Mining for precious metals historically occurred within the vicinity of all four populations. Three of the populations are currently in the immediate vicinity of active limestone quarries, but mining is only currently occurring in the area of one population. Ongoing mining in the species' habitat has the potential to extirpate one population in the future. Ongoing exploration for precious metals and gravel indicate that mining will continue, but will take time for the mining operations to be put into place. This will result in the loss and fragmentation of Ostler's peppergrass populations over a longer time scale. Other threats to the species include nonnative species, vulnerability associated with small population size, and climate change. Existing regulatory mechanisms are not addressing the threats to the species. The threats that Ostler's peppergrass faces are moderate in magnitude, because, while serious and occurring rangewide, the threats do not collectively result in significant population declines on a short time scale. The threats are imminent, because the species is currently facing them

across its entire range. Therefore, we have assigned Ostler's peppergrass an LPN of 8.

*Pinus albicaulis* (whitebark pine)—The following summary is based on information in our files and in the petition received on December 9, 2008. Whitebark pine is a hardy conifer found at alpine-tree-line and subalpine elevations in Washington, Oregon, Nevada, California, Idaho, Montana, and Wyoming, and in British Columbia and Alberta, Canada. In the United States, approximately 96 percent of land where the species occurs is federally owned or managed, primarily by the U.S. Forest Service. Whitebark pine is a slow-growing, long-lived tree that often lives for 500 and sometimes more than 1,000 years. It is considered a keystone, or foundation, species in western North America, where it increases biodiversity and contributes to critical ecosystem functions.

The primary threat to the species is from disease in the form of the nonnative white pine blister rust and its interaction with other threats. Although whitebark pine is still also experiencing some mortality from predation by the native mountain pine beetle (*Dendroctonus ponderosae*), the current epidemic is subsiding. We also anticipate that continuing environmental effects resulting from climate change will result in direct habitat loss for whitebark pine. Models predict that suitable habitat for whitebark pine will decline precipitously within the next 100 years. Past and ongoing fire suppression is also negatively affecting populations of whitebark pine through direct habitat loss. Additionally, environmental changes resulting from changing climatic conditions are acting alone and in combination with the effects of fire suppression to increase the frequency and severity of wildfires. Lastly, the existing regulatory mechanisms are not addressing the threats presented above.

As the mountain-pine-beetle epidemic is subsiding, we no longer consider this threat to be having the high level of impact that was seen in recent years. However, given projected warming trends, we expect that conditions will remain favorable for epidemic levels of mountain pine beetle into the foreseeable future. The significant threats from white pine blister rust, fire and fire suppression, and environmental effects of climate change remain on the landscape. However, the overall magnitude of threats to whitebark pine is somewhat diminished given the current absence of epidemic levels of mountain pine beetle, and because of this, individuals with genetic resistance

to white pine blister rust likely have a higher probability of survival. Survival and reproduction of genetically resistant trees are critical to the persistence of the species given the imminent, ubiquitous presence of white pine blister rust on the landscape. Overall, the threats to the species are ongoing, and therefore imminent, and are moderate in magnitude. We find the current LPN of 8 is appropriate.

*Solanum conocarpum* (marron bacora)—The following summary is based on information in our files and in the petition we received on November 21, 1996. *Solanum conocarpum* is a dry-forest shrub in the island of St. John, U.S. Virgin Islands. Its current distribution includes eight localities in the island of St. John, each ranging from 1 to 144 individuals. The species has been reported to occur on dry, poor soils. It can be locally abundant in exposed topography on sites disturbed by erosion, areas that have received moderate grazing, and around ridgelines as an understory component in diverse woodland communities. A habitat suitability model suggests that the vast majority of *Solanum conocarpum* habitat is found in the lower-elevation coastal-scrub forest. Efforts have been conducted to propagate the species to enhance natural populations, and planting of seedlings has been conducted in the island of St. John.

*Solanum conocarpum* is threatened by the lack of natural recruitment, absence of dispersers, fragmented distribution, lack of genetic variation, climate change, and habitat destruction or modification by exotic mammal species. These threats are evidenced by the reduced number of individuals, low number of populations, and lack of connectivity between populations. Overall, the threats are of high magnitude because they are leading to population declines for a species that already has low population numbers and fragmented distribution; the threats are also ongoing and therefore imminent. Therefore, we assigned an LPN of 2 to *Solanum conocarpum*.

*Streptanthus bracteatus* (bracted twistflower)—The following summary is based on information obtained from our files, on-line herbarium databases, surveys and monitoring data, seed-collection data, and scientific publications. Bracted twistflower, an annual herbaceous plant of the Brassicaceae (mustard family), is endemic to a small portion of the Edwards Plateau of Texas. The Texas Natural Diversity Database, as revised on March 8, 2015, lists 17 element occurrences (EOs; populations) that were documented from 1989 to 2015 in

five counties. Currently, 10 EOs remain with intact habitat, 2 EOs are partially intact, 2 EOs are on managed rights-of-way, and 3 EO sites have been developed and the populations are presumed extirpated. Only 8 of the intact EOs and portions of 2 EOs are in protected natural areas. Four extant EOs are vulnerable to development and other impacts. Five EOs have been partially or completely developed, including 2 EOs that were destroyed in 2012 and 2013, respectively.

The continued survival of bracted twistflower is imminently threatened by habitat destruction from urban development, severe herbivory from dense herds of white-tailed deer and other herbivores, and the increased density of woody plant cover. Additional ongoing threats include erosion and trampling from foot and mountain-bike trails, a pathogenic fungus of unknown origin, and insufficient protection by existing regulations. Furthermore, due to the small size and isolation of remaining populations, and lack of gene flow between them, several populations are now inbred and may have insufficient genetic diversity for long-term survival. Bracted twistflower populations often occur in habitats that also support the endangered golden-cheeked warbler (*Dendroica chrysoparia*), and while that does afford some protection to the plant, the two species may require different vegetation management. Bracted twistflower is potentially threatened by as-yet unknown impacts of climate change. The Service has established a voluntary memorandum of agreement with Texas Parks and Wildlife Department, the City of Austin, Travis County, the Lower Colorado River Authority, and the Lady Bird Johnson Wildflower Center to protect bracted twistflower and its habitats on tracts of Balcones Canyonlands Preserve. While the scope of this agreement does not protect the species throughout its range, the implementation of these responsibilities result in a moderate magnitude of threats and in the future will contribute to the species' conservation and recovery. The threats to bracted twistflower are ongoing and, therefore, imminent; consequently we maintain an LPN of 8 for this species.

*Trifolium friscanum* (Frisco clover)—The following summary is based on information in our files and the petition we received on July 30, 2007. Frisco clover is a narrow endemic perennial herb found only in Utah, with five known populations restricted to sparsely vegetated, pinion-juniper sagebrush communities and shallow, gravel soils derived from volcanic

gravels, Ordovician limestone, and dolomite outcrops. The majority (68 percent) of Frisco clover plants occur on private lands, with the remaining plants found on Federal and State lands.

On the private and State lands, the most significant threat to Frisco clover is habitat destruction from mining for precious metals and gravel. Active mining claims, recent prospecting, and an increasing demand for precious metals and gravel indicate that mining in Frisco clover habitats will increase in the foreseeable future, likely resulting in the loss of large numbers of plants. Other threats to Frisco clover include nonnative, invasive species in conjunction with surface disturbance from mining activities. Existing regulatory mechanisms are inadequate to protect the species from these threats. Vulnerabilities of the species include small population size and climate change.

The threats to Frisco clover are moderate in magnitude, because, while serious and occurring throughout a majority of its range, they are not acting independently or cumulatively to have a highly significant negative impact on its survival or reproductive capacity. For example, although mining for precious metals and gravel historically occurred throughout Frisco clover's range, and mining operations may eventually expand into occupied habitats, there are no active mines within the immediate vicinity of any known population. However, activity may resume at one gravel mine on State lands in the near future where expansion plans have been discussed but not submitted to the State of Utah for permitting. At this time, avoidance of occupied habitat appears to be feasible for this mine's expansion. Overall, the threats of mining activities, invasive species, inadequacy of existing regulatory mechanisms, small population size, and climate change are imminent, because the species is currently facing these threats across its entire range. Therefore, we have assigned Frisco clover an LPN of 8.

#### Petitions To Reclassify Species Already Listed

We previously made warranted-but-precluded findings on three petitions seeking to reclassify threatened species to endangered status. The taxa involved in the reclassification petitions are one population of the grizzly bear (*Ursus arctos horribilis*), delta smelt (*Hypomesus transpacificus*), and *Sclerocactus brevispinus* (Pariette cactus). Because these species are already listed under the ESA, they are not candidates for listing and are not

included in Table 1. However, this notice and associated species assessment forms or 5-year review documents also constitute the findings for the resubmitted petitions to reclassify these species. Our updated assessments for these species are provided below. We find that reclassification to endangered status for one grizzly bear ecosystem population, delta smelt, and *Sclerocactus brevispinus* are all currently warranted but precluded by work identified above (see Findings for Petitioned Candidate Species, above). One of the primary reasons that the work identified above is considered to have higher priority is that the grizzly bear population, delta smelt, and *Sclerocactus brevispinus* are currently listed as threatened, and therefore already receive certain protections under the ESA. Those protections are set forth in our regulations: 50 CFR 17.40(b) (grizzly bear); 50 CFR 17.31, and, by reference, 50 CFR 17.21 (delta smelt); and 50 CFR 17.71, and, by reference, 50 CFR 17.61 (*Sclerocactus brevispinus*). It is therefore unlawful for any person, among other prohibited acts, to take (*i.e.*, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such activity) a grizzly bear or a delta smelt, subject to applicable exceptions. And it is unlawful for any person, among other prohibited acts, to remove or reduce to possession *Sclerocactus brevispinus* from an area under Federal jurisdiction, subject to applicable exceptions. Other protections that apply to these threatened species even before we complete proposed and final reclassification rules include those under section 7(a)(2) of the ESA, whereby Federal agencies must insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species.

Grizzly bear (*Ursus arctos horribilis*), North Cascades ecosystem population (Region 6)—Since 1990, we have received and reviewed five petitions requesting a change in status for the North Cascades grizzly bear population (55 FR 32103, August 7, 1990; 56 FR 33892, July 24, 1991; 57 FR 14372, April 20, 1992; 58 FR 43856, August 18, 1993; 63 FR 30453, June 4, 1998). In response to these petitions, we determined that grizzly bears in the North Cascade ecosystem warrant a change to endangered status. We have continued to find that these petitions are warranted but precluded through our annual CNOR process. On February 19, 2015, in partnership with the National

Park Service, we issued a notice of intent to jointly prepare a North Cascades Ecosystem Grizzly Bear Restoration Plan and Environmental Impact Statement to determine how to restore the grizzly bear to the North Cascades ecosystem (80 FR 8894; February 19, 2015). Natural recovery in this ecosystem is challenged by the absence of a verified population (only three confirmed observations in the last 20 years), as well as isolation from any contiguous population in British Columbia and the United States.

In 2016, we continue to find that reclassifying grizzly bears in this ecosystem as endangered is warranted but precluded, and we continue to assign an LPN of 3 for the uplisting of the North Cascades population based on high-magnitude threats, including very small population size, incomplete habitat protection measures (motorized-access management), and population fragmentation resulting in genetic isolation. However, we also acknowledge the possibility that there is no longer a population present in the ecosystem, and restoration efforts (possibly including designation of an experimental population under section 10(j) of the ESA) may be used to establish a viable population in this recovery zone. The threats are high in magnitude, because the limiting factors for grizzly bears in this recovery zone are human-caused mortality and extremely small population size. The threats are ongoing, and thus imminent. However, higher-priority listing actions, including court-approved settlements, court-ordered and statutory deadlines for petition findings and listing determinations, emergency listing determinations, and responses to litigation, continue to preclude reclassifying grizzly bears in this ecosystem. Furthermore, proposed rules to reclassify threatened species to endangered are a lower priority than listing currently unprotected species (*i.e.*, candidate species), as species currently listed as threatened are already afforded protection under the ESA and the implementing regulations. We continue to monitor grizzly bears in this ecosystem and will change their status or implement an emergency uplisting if necessary.

Delta smelt (*Hypomesus transpacificus*) (Region 8) (see 75 FR 17667, April 7, 2010, for additional information on why reclassification to endangered is warranted but precluded)—The following summary is based on information contained in our files and the petition we received on March 8, 2006. Delta smelt are slender-bodied fish, generally about 60 to 70

millimeters (mm) (2 to 3 inches (in)) long, although they may reach lengths of up to 120 mm (4.7 in). Delta smelt are in the Osmeridae family (smelts). Live fish are nearly translucent and have a steely blue sheen to their sides. Delta smelt feed primarily on small planktonic (free-floating) crustaceans, and occasionally on insect larvae. Delta smelt are endemic to the San Francisco Bay and Sacramento-San Joaquin Delta Estuary (Delta) in California. Studies indicate that delta smelt require specific environmental conditions (freshwater flow, water quality) and habitat types within the estuary for migration, spawning, egg incubation, rearing, and larval and juvenile transport from spawning to rearing habitats. Delta smelt are a euryhaline (tolerate a wide range of salinities) species; however, they rarely occur in water with salinities more than 10–12 (about one-third seawater). Feyrer et al. found that relative abundance of delta smelt was related to fall salinity and turbidity (water clarity). Laboratory studies found that delta smelt larval feeding increased with increased turbidity.

Delta smelt have been in decline for decades, and numbers have trended precipitously downward since the early 2000s. In the wet water year of 2011, the Fall Mid-Water Trawl (FMWT) index for delta smelt increased to 343, which is the highest index recorded since 2001. It immediately declined again in 2012 to 42 and continued to decline in 2013 and 2014, when the index was 18 and 9, respectively. A new all-time low was reached in 2015 with an index of 7. Eleven of the last 12 years have seen FMWT indexes that have been the lowest ever recorded, and the 2015–2016 results from all five of the surveys analyzed in this review have been the lowest ever recorded for the delta smelt.

The primary known threats cited in the 12-month finding to reclassify the delta smelt from threatened to endangered (75 FR 17667; April 7, 2010) are: Entrainment by State and Federal water export facilities; summer and fall increases in salinity due to reductions in freshwater flow and summer and fall increases in water clarity; and effects from introduced species, primarily the overbite clam and *Egeria densa*. Additional threats included predation, entrainment into power plants, contaminants, and the increased vulnerability to all these threats resulting from small population size. Since the 2010 warranted 12-month finding, we have identified climate change as a threat; climate change was not analyzed in the 2010 12-month finding. Since the 2010 12-month finding, one of the two power plants

within the range of the delta smelt using water for cooling has shut down, and power plants are no longer thought to be a threat to the population as a whole. We have identified a number of existing regulatory mechanisms that provide protective measures that affect the stressors acting on the delta smelt. Despite these existing regulatory mechanisms and other conservation efforts, the decrease in population levels makes clear that the stressors continue to act on the species such that it is warranted for uplisting under the ESA.

We are unable to determine with certainty which threats or combinations of threats are directly responsible for the decrease in delta smelt abundance. However, the apparent low abundance of delta smelt in concert with ongoing threats throughout its range indicates that the delta smelt is now in danger of extinction throughout its range. The threats to the species are of a high magnitude, and imminent. Therefore, we retained an LPN of 2 for uplisting this species.

*Sclerocactus brevispinus* (Pariette cactus) (Region 6) (see 72 FR 53211, September 18, 2007, and the species assessment form (see ADDRESSES) for additional information on why reclassification to endangered is warranted but precluded)—Pariette cactus is restricted to clay badlands of the Uinta geologic formation in the Uinta Basin of northeastern Utah. The species is restricted to one population with an overall range of approximately 16 miles by 5 miles in extent. The species' entire population is within a developed and expanding oil and gas field. The location of the species' habitat exposes it to destruction from road, pipeline, and well-site construction in connection with oil and gas development. The species may be illegally collected as a specimen plant for horticultural use. Recreational off-road vehicle use and livestock trampling are additional threats. The species is currently federally listed as threatened (44 FR 58868, October 11, 1979; 74 FR 47112, September 15, 2009). The threats are of a high magnitude, because any one of the threats has the potential to severely affect the survival of this species, a narrow endemic with a highly limited range and distribution. Threats are ongoing and, therefore, are imminent. Thus, we assigned an LPN of 2 to this species for uplisting. However, higher-priority listing actions, including court-approved settlements, court-ordered and statutory deadlines for petition findings and listing determinations, emergency listing determinations, and responses to litigation, continue to preclude

reclassifying the Pariette cactus. Furthermore, proposed rules to reclassify threatened species to endangered are generally a lower priority than listing currently unprotected species (*i.e.*, candidate species), as species currently listed as threatened are already afforded the protection of the ESA and the implementing regulations.

#### Current Notice of Review

We gather data on plants and animals native to the United States that appear to merit consideration for addition to the Lists of Endangered and Threatened Wildlife and Plants (Lists). This document identifies those species that we currently regard as candidates for addition to the Lists. These candidates include species and subspecies of fish, wildlife, or plants, and DPSs of vertebrate animals. This compilation relies on information from status surveys conducted for candidate assessment and on information from State Natural Heritage Programs, other State and Federal agencies, knowledgeable scientists, public and private natural resource interests, and comments received in response to previous notices of review.

Tables 1 and 2 list animals arranged alphabetically by common names under the major group headings, and list plants alphabetically by names of genera, species, and relevant subspecies and varieties. Animals are grouped by class or order. Plants are subdivided into two groups: (1) Flowering plants and (2) ferns and their allies. Useful synonyms and subgeneric scientific names appear in parentheses with the synonyms preceded by an “equals” sign. Several species that have not yet been formally described in the scientific literature are included; such species are identified by a generic or specific name (in italics), followed by “sp.” or “ssp.” We incorporate standardized common names in these notices as they become available. We sort plants by scientific name due to the inconsistencies in common names, the inclusion of vernacular and composite subspecific names, and the fact that many plants still lack a standardized common name.

Table 1 lists all candidate species, plus species currently proposed for listing under the ESA. We emphasize that in this notice we are not proposing to list any of the candidate species; rather, we will develop and publish proposed listing rules for these species in the future. We encourage State agencies, other Federal agencies, and other parties to give consideration to these species in environmental planning.

In Table 1, the “category” column on the left side of the table identifies the status of each species according to the following codes:

PE—Species proposed for listing as endangered. Proposed species are those species for which we have published a proposed rule to list as endangered or threatened in the **Federal Register**. This category does not include species for which we have withdrawn or finalized the proposed rule.

PT—Species proposed for listing as threatened.

PSAT—Species proposed for listing as threatened due to similarity of appearance.

C—Candidates: Species for which we have on file sufficient information on biological vulnerability and threats to support proposals to list them as endangered or threatened. Issuance of proposed rules for these species is precluded at present by other higher priority listing actions. This category includes species for which we made a 12-month warranted-but-precluded finding on a petition to list. We made new findings on all petitions for which we previously made “warranted-but-precluded” findings. We identify the species for which we made a continued warranted-but-precluded finding on a resubmitted petition by the code “C\*” in the category column (see *Findings for Petitioned Candidate Species* for additional information).

The “Priority” column indicates the LPN for each candidate species, which we use to determine the most appropriate use of our available resources. The lowest numbers have the highest priority. We assign LPNs based on the immediacy and magnitude of threats, as well as on taxonomic status. We published a complete description of our listing priority system in the **Federal Register** (48 FR 43098, September 21, 1983).

The third column, “Lead Region,” identifies the Regional Office to which you should direct information, comments, or questions (see addresses under Request for Information at the end of the **SUPPLEMENTARY INFORMATION** section).

Following the scientific name (fourth column) and the family designation (fifth column) is the common name (sixth column). The seventh column provides the known historical range for the species or vertebrate population (for vertebrate populations, this is the historical range for the entire species or subspecies and not just the historical range for the distinct population

segment), indicated by postal code abbreviations for States and U.S. territories. Many species no longer occur in all of the areas listed.

Species in Table 2 of this notice are those we included either as proposed species or as candidates in the previous CNOR (published December 24, 2015, at 80 FR 80584) that are no longer proposed species or candidates for listing. Since December 24, 2015, we listed 78 species, withdrew 1 species from proposed status, and removed 18 species from the candidate list. The first column indicates the present status of each species, using the following codes (not all of these codes may have been used in this CNOR):

E—Species we listed as endangered.

T—Species we listed as threatened.

Rc—Species we removed from the candidate list, because currently available information does not support a proposed listing.

Rp—Species we removed from the candidate list, because we have withdrawn the proposed listing.

The second column indicates why the species is no longer a candidate or proposed species, using the following codes (not all of these codes may have been used in this CNOR):

A—Species that are more abundant or widespread than previously believed and species that are not subject to the degree of threats sufficient that the species is a candidate for listing (for reasons other than that conservation efforts have removed or reduced the threats to the species).

F—Species whose range no longer includes a U.S. territory.

I—Species for which the best available information on biological vulnerability and threats is insufficient to support a conclusion that the species is an endangered species or a threatened species.

L—Species we added to the Lists of Endangered and Threatened Wildlife and Plants.

M—Species we mistakenly included as candidates or proposed species in the last notice of review.

N—Species that are not listable entities based on the ESA’s definition of “species” and current taxonomic understanding.

U—Species that are not subject to the degree of threats sufficient to warrant issuance of a proposed listing and therefore are not candidates for listing, due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

X—Species we believe to be extinct.

The columns describing lead region, scientific name, family, common name,

and historical range include information as previously described for Table 1.

### Request for Information

We request you submit any further information on the species named in this notice as soon as possible or whenever it becomes available. We are particularly interested in any information:

(1) Indicating that we should add a species to the list of candidate species;

(2) Indicating that we should remove a species from candidate status;

(3) Recommending areas that we should designate as critical habitat for a species, or indicating that designation of critical habitat would not be prudent for a species;

(4) Documenting threats to any of the included species;

(5) Describing the immediacy or magnitude of threats facing candidate species;

(6) Pointing out taxonomic or nomenclature changes for any of the species;

(7) Suggesting appropriate common names; and

(8) Noting any mistakes, such as errors in the indicated historical ranges.

Submit information, materials, or comments regarding a particular species to the Regional Director of the Region identified as having the lead responsibility for that species. The regional addresses follow:

Region 1. Hawaii, Idaho, Oregon, Washington, American Samoa, Guam, and Commonwealth of the Northern Mariana Islands. Regional Director (TE), U.S. Fish and Wildlife Service, Eastside Federal Complex, 911 NE 11th Avenue, Portland, OR 97232–4181 (503/231–6158).

Region 2. Arizona, New Mexico, Oklahoma, and Texas. Regional Director (TE), U.S. Fish and Wildlife Service, 500 Gold Avenue SW., Room 4012, Albuquerque, NM 87102 (505/248–6920).

Region 3. Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. Regional Director (TE), U.S. Fish and Wildlife Service, 5600 American Blvd. West, Suite 990, Bloomington, MN 55437–1458 (612/713–5334).

Region 4. Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Puerto Rico, and the U.S. Virgin Islands. Regional Director (TE), U.S. Fish and Wildlife Service, 1875 Century Boulevard, Suite 200, Atlanta, GA 30345 (404/679–4156).

Region 5. Connecticut, Delaware, District of Columbia, Maine,

Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia. Regional Director (TE), U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035-9589 (413/253-8615).

Region 6. Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. Regional Director (TE), U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, CO 80225-0486 (303/236-7400).

Region 7. Alaska. Regional Director (TE), U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, AK 99503-6199 (907/786-3505).

Region 8. California and Nevada. Regional Director (TE), U.S. Fish and Wildlife Service, 2800 Cottage Way,

Suite W2606, Sacramento, CA 95825 (916/414-6464).

HQ (Foreign). Chief, Branch of Foreign Species, U.S. Fish and Wildlife Service Headquarters, MS: ES, 5275 Leesburg Pike, Falls Church, VA 22041-3803 (703/358-2370).

We will provide information we receive to the Region having lead responsibility for each candidate species mentioned in the submission. We will likewise consider all information provided in response to this CNOR in deciding whether to propose species for listing and when to undertake necessary listing actions (including whether emergency listing under section 4(b)(7) of the ESA is appropriate). Information and comments we receive will become part of the administrative record for the species, which we maintain at the appropriate Regional Office.

**Public Availability of Comments**

Before including your address, phone number, email address, or other personal identifying information in your submission, be advised that your entire submission—including your personal identifying information—may be made publicly available at any time. Although you can ask us in your submission to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

**Authority**

This notice is published under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: November 14, 2016.

**Stephen Guertin,**

*Acting Director, Fish and Wildlife Service.*

**TABLE 1—CANDIDATE NOTICE OF REVIEW (ANIMALS AND PLANTS)**

[Note: See end of **SUPPLEMENTARY INFORMATION** for an explanation of symbols used in this table]

Status		Lead region	Scientific name	Family	Common name	Historical range
Category	Priority					
<b>MAMMALS</b>						
C*	6	R2	<i>Tamias minimus atristriatus.</i>	Sciuridae	Chipmunk, Peñasco least	U.S.A. (NM).
C*	3	R8	<i>Vulpes vulpes necator</i>	Canidae	Fox, Sierra Nevada red (Sierra Nevada DPS).	U.S.A. (CA, OR).
C*	9	R1	<i>Arborimus longicaudus</i>	Cricetidae	Vole, Red (north Oregon coast DPS).	U.S.A. (OR).
C*	9	R7	<i>Odobenus rosmarus divergens.</i>	Odobenidae	Walrus, Pacific	U.S.A. (AK), Russian Federation (Kamchatka and Chukotka).
PT	6	R6	<i>Gulo gulo luscus</i>	Mustelidae	Wolverine, North American (Contiguous U.S. DPS).	U.S.A. (CA, CO, ID, MT, OR, UT, WA, WY).
<b>BIRDS</b>						
PT		R1	<i>Drepanis coccinea</i>	Fringillidae	Iiwi (honeycreeper)	U.S.A. (HI).
C*	2	R2	<i>Amazona viridigenalis</i>	Psittacidae	Parrot, red-crowned	U.S.A. (TX), Mexico.
<b>REPTILES</b>						
PT	5	R4	<i>Pituophis ruthveni</i>	Colubridae	Snake, Louisiana pine	U.S.A. (LA, TX).
C*	8	R4	<i>Gopherus polyphemus</i>	Testudinidae	Tortoise, gopher (eastern population).	U.S.A. (AL, FL, GA, LA, MS, SC).
PE	6	R2	<i>Kinosternon sonoriense longifemorale.</i>	Kinosternidae	Turtle, Sonoyta mud	U.S.A. (AZ), Mexico.
<b>AMPHIBIANS</b>						
C*	8	R4	<i>Notophthalmus perstriatus.</i>	Salamandridae	Newt, striped	U.S.A. (FL, GA).
C*	8	R4	<i>Gyrinophilus gulolineatus</i>	Plethodontidae	Salamander, Berry Cave	U.S.A. (TN).
PE	2	R4	<i>Necturus alabamensis</i>	Proteidae	Waterdog, black warrior (= Sipsey Fork).	U.S.A. (AL).
<b>FISHES</b>						
PT	8	R2	<i>Gila nigra</i>	Cyprinidae	Chub, headwater	U.S.A. (AZ, NM).
PT	9	R2	<i>Gila robusta</i>	Cyprinidae	Chub, roundtail (Lower Colorado River Basin DPS).	U.S.A. (AZ, CO, NM, UT, WY).

TABLE 1—CANDIDATE NOTICE OF REVIEW (ANIMALS AND PLANTS)—Continued  
 [Note: See end of **SUPPLEMENTARY INFORMATION** for an explanation of symbols used in this table]

Status		Lead region	Scientific name	Family	Common name	Historical range
Category	Priority					
PE	2	R5	<i>Crystallaria cincotta</i>	Percidae	Darter, diamond	U.S.A. (KY, OH, TN, WV).
PT	8	R4	<i>Percina aurora</i>	Percidae	Darter, Pearl	U.S.A. (LA, MS).
C*	3	R8	<i>Spirinchus thaleichthys</i>	Osmeridae	Smelt, longfin (San Francisco Bay–Delta DPS).	U.S.A. (AK, CA, OR, WA), Canada.
PSAT	N/A	R1	<i>Salvelinus malma</i>	Salmonidae	Trout, Dolly Varden	U.S.A. (AK, WA), Canada, East Asia.
<b>CLAMS</b>						
C*	2	R2	<i>Lampsilis bracteata</i>	Unionidae	Fatmucket, Texas	U.S.A. (TX).
C*	2	R2	<i>Truncilla macrodon</i>	Unionidae	Fawnsfoot, Texas	U.S.A. (TX).
PE	8	R2	<i>Popenaias popei</i>	Unionidae	Hornshell, Texas	U.S.A. (NM, TX), Mexico.
C*	8	R2	<i>Quadrula aurea</i>	Unionidae	Orb, golden	U.S.A. (TX).
C*	8	R2	<i>Quadrula houstonensis</i>	Unionidae	Pimpleback, smooth	U.S.A. (TX).
C*	2	R2	<i>Quadrula petrina</i>	Unionidae	Pimpleback, Texas	U.S.A. (TX).
<b>SNAILS</b>						
C*	2	R4	<i>Planorbella magnifica</i>	Planorbidae	Ramshorn, magnificent	U.S.A. (NC).
<b>INSECTS</b>						
PE		R3	<i>Bombus affinis</i>	Apidae	Bee, rusty patched bumble.	U.S.A. (CT, DE, DC, GA, IL, IN, IA, KY, ME, MD, MA, MI, MN, MO, NH, NJ, NY, NC, ND, OH, PA, RI, SC, SD, TN, VT, VA, WV, WI, Canada (Ontario, Quebec).
C*	5	R8	<i>Lycaena hermes</i>	Lycaenidae	Butterfly, Hermes copper	U.S.A. (CA).
C*	3	R1	<i>Euchloe ausonides insulanus</i>	Pieridae	Butterfly, Island marble	U.S.A. (WA).
C*	2	R4	<i>Atlantea tulita</i>	Nymphalidae	Butterfly, Puerto Rican harlequin.	U.S.A. (PR).
C*	8	R3	<i>Papaipema eryngii</i>	Noctuidae	Moth, rattlesnake-master borer.	U.S.A. (AR, IL, KY, NC, OK).
C*	5	R6	<i>Arsapnia (= Capnia) arapahoe</i>	Capniidae	Snowfly, Arapahoe	U.S.A. (CO).
PT	5	R6	<i>Lednia tumana</i>	Nemouridae	Stonefly, meltwater lednian.	U.S.A. (MT).
PT		R6	<i>Zapada glacier</i>	Nemouridae	Stonefly, western glacier	U.S.A. (MT).
<b>CRUSTACEANS</b>						
PE	8	R5	<i>Stygobromus kenki</i>	Crangonyctidae	Amphipod, Kenk's	U.S.A. (DC).
<b>FLOWERING PLANTS</b>						
C*	8	R6	<i>Astragalus microcymbus</i>	Fabaceae	Milkvetch, skiff	U.S.A. (CO).
C*	8	R6	<i>Astragalus schmolliae</i>	Fabaceae	Milkvetch, Chapin Mesa	U.S.A. (CO).
C*	8	R6	<i>Boechera (= Arabis) pusilla</i>	Brassicaceae	Rockcress, Fremont County or small.	U.S.A. (WY).
PT	12	R4	<i>Chamaesyce deltoidea pinetorum</i>	Euphorbiaceae	Sandmat, pineland	U.S.A. (FL).
PT	6	R8	<i>Chorizanthe parryi</i> var. <i>fernandina</i>	Polygonaceae	Spineflower, San Fernando Valley.	U.S.A. (CA).
C*	8	R2	<i>Cirsium wrightii</i>	Asteraceae	Thistle, Wright's	U.S.A. (AZ, NM), Mexico.
PT	3	R4	<i>Dalea carthagensis</i> var. <i>floridana</i>	Fabaceae	Prairie-clover, Florida	U.S.A. (FL).
PT	5	R4	<i>Digitaria pauciflora</i>	Poaceae	Crabgrass, Florida pineland.	U.S.A. (FL).
C*	8	R6	<i>Eriogonum soledium</i>	Polygonaceae	Buckwheat, Frisco	U.S.A. (UT).
PE	11	R2	<i>Festuca ligulata</i>	Poaceae	Fescue, Guadalupe	U.S.A. (TX), Mexico.
C*	8	R6	<i>Lepidium ostleri</i>	Brassicaceae	Peppergrass, Ostler's	U.S.A. (UT).
C*	8	R6	<i>Pinus albicaulis</i>	Pinaceae	Pine, whitebark	U.S.A. (CA, ID, MT, NV, OR, WA, WY), Canada (AB, BC).
PE	2	R1	<i>Sicyos macrophyllus</i>	Cucurbitaceae	Anunu	U.S.A. (HI).

TABLE 1—CANDIDATE NOTICE OF REVIEW (ANIMALS AND PLANTS)—Continued

[Note: See end of **SUPPLEMENTARY INFORMATION** for an explanation of symbols used in this table]

Status		Lead region	Scientific name	Family	Common name	Historical range
Category	Priority					
PT	12	R4	<i>Sideroxylon reclinatum austrofloridense</i> .	Sapotaceae	Bully, Everglades	U.S.A. (FL).
C*	2	R4	<i>Solanum conocarpum</i>	Solanaceae	Bacora, marron	U.S.A. (PR).
C*	8	R2	<i>Streptanthus bracteatus</i>	Brassicaceae	Twistflower, bracted	U.S.A. (TX).
C*	8	R6	<i>Trifolium friscanum</i>	Fabaceae	Clover, Frisco	U.S.A. (UT).

TABLE 2—ANIMALS AND PLANTS FORMERLY CANDIDATES OR FORMERLY PROPOSED FOR LISTING

[Note: See end of **SUPPLEMENTARY INFORMATION** for an explanation of symbols used in this table]

Status		Lead region	Scientific name	Family	Common name	Historical range
Code	Expl.					
<b>MAMMALS</b>						
E	L	R1	<i>Emballonura semicaudata semicaudata</i> .	Emballonuridae	Bat, Pacific sheath-tailed (American Samoa DPS).	U.S.A. (AS), Fiji, Independent Samoa, Tonga, Vanuatu.
Rp	A	R8	<i>Martes pennanti</i>	Mustelidae	Fisher (west coast DPS)	U.S.A. (CA, CT, IA, ID, IL, IN, KY, MA, MD, ME, MI, MN, MT, ND, NH, NJ, NY, OH, OR, PA, RI, TN, UT, VA, VT, WA, WI, WV, WY), Canada.
Rc	U	R1	<i>Uroditellus washingtoni</i>	Sciuridae	Squirrel, Washington ground.	U.S.A. (WA, OR).
<b>BIRDS</b>						
Rc	A	R1	<i>Porzana tabuensis</i>	Rallidae	Crake, spotless (American Samoa DPS).	U.S.A. (AS), Australia, Fiji, Independent Samoa, Marquesas, Philippines, Society Islands, Tonga.
E	L	R1	<i>Gallicolumba stairi</i>	Columbidae	Ground-dove, friendly (American Samoa DPS).	U.S.A. (AS), Independent Samoa.
E	L	R1	<i>Oceanodroma castro</i>	Hydrobatidae	Storm-petrel, band-rumped (Hawaii DPS).	U.S.A. (HI), Atlantic Ocean, Ecuador (Galapagos Islands), Japan.
E	L	R1	<i>Gymnomyza samoensis</i>	Meliphagidae	Ma'oma'o	U.S.A. (AS), Independent Samoa.
Rc	U	R8	<i>Synthliboramphus hypoleucus</i> .	Alcidae	Murrelet, Xantus's	U.S.A. (CA), Mexico.
Rc	A	R6	<i>Anthus spragueii</i>	Motacillidae	Pipit, Sprague's	U.S.A. (AR, AZ, CO, KS, LA, MN, MS, MT, ND, NE, NM, OK, SD, TX), Canada, Mexico.
T	L	R4	<i>Dendroica angelae</i>	Emberizidae	Warbler, elfin-woods	U.S.A. (PR).
<b>REPTILES</b>						
PT	8	R3	<i>Sistrurus catenatus</i>	Viperidae	Massasauga (= rattle-snake), eastern.	U.S.A. (IA, IL, IN, MI, MN, MO, NY, OH, PA, WI), Canada.
T	L	R1	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (Central North Pacific DPS).	Central North Pacific Ocean.
E	L	R1	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (Central South Pacific DPS).	Central South Pacific Ocean.
E	L	R1	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (Central West Pacific DPS).	Central West Pacific Ocean.
T	L	HQ (Foreign)	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (East Indian-West Pacific DPS).	Eastern Indian and Western Pacific Oceans.
T	L	R8	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (East Pacific DPS).	East Pacific Ocean.
E	L	HQ (Foreign)	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (Mediterranean DPS).	Mediterranean Sea.



TABLE 2—ANIMALS AND PLANTS FORMERLY CANDIDATES OR FORMERLY PROPOSED FOR LISTING—Continued

[Note: See end of **SUPPLEMENTARY INFORMATION** for an explanation of symbols used in this table]

Status		Lead region	Scientific name	Family	Common name	Historical range
Code	Expl.					
T	L	R4	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (North Atlantic DPS).	North Atlantic Ocean.
T	L	HQ (Foreign)	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (North Indian DPS).	North Indian Ocean.
T	L	R4	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (South Atlantic DPS).	South Atlantic Ocean.
T	L	HQ (Foreign)	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (Southwest Indian DPS).	Southwest Indian Ocean.
T	L	HQ (Foreign)	<i>Chelonia mydas</i>	Cheloniidae	Sea turtle, green (Southwest Pacific DPS).	Southwest Pacific Ocean.
<b>AMPHIBIANS</b>						
Rc	U	R8	<i>Lithobates onca</i>	Ranidae	Frog, relict leopard	U.S.A. (AZ, NV, UT).
Rc	N	R2	<i>Hyla wrightorum</i>	Hylidae	Treefrog, Arizona (Huachuca/Canelo DPS).	U.S.A. (AZ), Mexico (Sonora).
<b>FISHES</b>						
Rc	A	R6	<i>Etheostoma cragini</i>	Percidae	Darter, Arkansas	U.S.A. (AR, CO, KS, MO, OK).
T	L	R4	<i>Etheostoma spilotum</i>	Percidae	Darter, Kentucky arrow	U.S.A. (KY).
Rc	U	R4	<i>Moxostoma</i> sp.	Catostomidae	Redhorse, sicklefin	U.S.A. (GA, NC, TN).
<b>CLAMS</b>						
T	L	R4	<i>Medionidus walkeri</i>	Unionidae	Moccasinshell, Suwannee	U.S.A. (FL, GA).
<b>SNAILS</b>						
Rc	N	R4	<i>Elimia melanoides</i>	Pleuroceridae	Mudalia, black	U.S.A. (AL).
E	L	R1	<i>Eua zebrina</i>	Partulidae	Snail, no common name	U.S.A. (AS).
E	L	R1	<i>Ostodes strigatus</i>	Potariidae	Snail, no common name	U.S.A. (AS).
Rc	A	R2	<i>Pyrgulopsis thompsoni</i>	Hydrobiidae	Springsnail, Huachuca	U.S.A. (AZ), Mexico.
<b>INSECTS</b>						
E	L	R1	<i>Hylaeus anthracinus</i>	Colletidae	Bee, Hawaiian yellow-faced.	U.S.A. (HI).
E	L	R1	<i>Hylaeus assimulans</i>	Colletidae	Bee, Hawaiian yellow-faced.	U.S.A. (HI).
E	L	R1	<i>Hylaeus facilis</i>	Colletidae	Bee, Hawaiian yellow-faced.	U.S.A. (HI).
E	L	R1	<i>Hylaeus hiliaris</i>	Colletidae	Bee, Hawaiian yellow-faced.	U.S.A. (HI).
E	L	R1	<i>Hylaeus kuakea</i>	Colletidae	Bee, Hawaiian yellow-faced.	U.S.A. (HI).
E	L	R1	<i>Hylaeus longiceps</i>	Colletidae	Bee, Hawaiian yellow-faced.	U.S.A. (HI).
E	L	R1	<i>Hylaeus mana</i>	Colletidae	Bee, Hawaiian yellow-faced.	U.S.A. (HI).
Rc	A	R4	<i>Pseudanophthalmus caecus</i> .	Carabidae	Cave beetle, Clifton	U.S.A. (KY).
Rc	A	R4	<i>Pseudanophthalmus frigidus</i> .	Carabidae	Cave beetle, icebox	U.S.A. (KY).
Rc	A	R4	<i>Pseudanophthalmus troglodytes</i> .	Carabidae	Cave beetle, Louisville	U.S.A. (KY).
Rc	X	R4	<i>Pseudanophthalmus parvus</i> .	Carabidae	Cave beetle, Tatum	U.S.A. (KY).
E	L	R1	<i>Megalagrion xanthomelas</i>	Coenagrionidae	Damselfly, orangeblack Hawaiian.	U.S.A. (HI).
Rc	X	R2	<i>Heterelmis stephani</i>	Elmidae	Rifle beetle, Stephan's	U.S.A. (AZ).
Rc	A	R4	<i>Cicindela highlandensis</i>	Cicindelidae	Tiger beetle, highlands	U.S.A. (FL).
E	L	R4	<i>Cicindelidia floridana</i>	Cicindelidae	Tiger beetle, Miami	U.S.A. (FL).
<b>CRUSTACEANS</b>						
T	L	R5	<i>Cambarus callainus</i>	Cambaridae	Crayfish, Big Sandy	U.S.A. (KY, VA, WV).

TABLE 2—ANIMALS AND PLANTS FORMERLY CANDIDATES OR FORMERLY PROPOSED FOR LISTING—Continued

[Note: See end of **SUPPLEMENTARY INFORMATION** for an explanation of symbols used in this table]

Status		Lead region	Scientific name	Family	Common name	Historical range
Code	Expl.					
E	L	R5	<i>Cambarus veteranus</i>	Cambaridae	Crayfish, Guyandotte River.	U.S.A. (WV).
E	L	R1	<i>Procaris hawaiana</i>	Procarididae	Shrimp, anchialine pool ...	U.S.A. (HI).
<b>FLOWERING PLANTS</b>						
T	L	R4	<i>Argythamnia blodgettii</i>	Euphorbiaceae	Silverbush, Blodgett's	U.S.A. (FL).
Rc	A	R1	<i>Artemisia borealis</i> var. <i>wormskioldii</i> .	Asteraceae	Wormwood, northern	U.S.A. (OR, WA).
E	L	R1	<i>Calamagrostis expansa</i>	Poaceae	Reedgrass, Maui	U.S.A. (HI).
E	L	R4	<i>Chamaecrista lineata</i> var. <i>keyensis</i> .	Fabaceae	Pea, Big Pine partridge ...	U.S.A. (FL).
E	L	R4	<i>Chamaesyce deltoidea serpyllum</i> .	Euphorbiaceae	Spurge, wedge	U.S.A. (FL).
E	L	R1	<i>Cyanea kauaulaensis</i>	Campanulaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Cyperus neokunthianus</i>	Cyperaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Cyrtandra hematos</i>	Gesneriaceae	Haiwale	U.S.A. (HI).
Rc	N	R5	<i>Dichanthelium hirstii</i>	Poaceae	Panic grass, Hirst Brothers'.	U.S.A. (DE, GA, NC, NJ).
E	L	R1	<i>Exocarpos menziesii</i>	Santalaceae	Heau	U.S.A. (HI).
E	L	R1	<i>Festuca hawaiiensis</i>	Poaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Gardenia remyi</i>	Rubiaceae	Nanu	U.S.A. (HI).
E	L	R1	<i>Joinvillea ascendens ascendens</i> .	Joinvilleaceae	Ohe	U.S.A. (HI).
E	L	R1	<i>Kadua</i> (= <i>Hedyotis</i> ) <i>fluviatilis</i> .	Rubiaceae	Kampuaa	U.S.A. (HI).
E	L	R1	<i>Kadua haupuensis</i>	Rubiaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Labordia lorenciana</i>	Loganiaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Lepidium orbiculare</i>	Brassicaceae	Anaunau	U.S.A. (HI).
T	L	R1	<i>Lepidium papilliferum</i>	Brassicaceae	Peppergrass, slickspot	U.S.A. (ID).
E	L	R4	<i>Linum arenicola</i>	Linaceae	Flax, sand	U.S.A. (FL).
E	L	R1	<i>Myrsine fosbergii</i>	Myrsinaceae	Kolea	U.S.A. (HI).
E	L	R1	<i>Nothoecstrum latifolium</i>	Solanaceae	Aiea	U.S.A. (HI).
E	L	R1	<i>Ochrosia haleakalae</i>	Apocynaceae	Holei	U.S.A. (HI).
E	L	R1	<i>Phyllostegia brevidens</i>	Lamiaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Phyllostegia helleri</i>	Lamiaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Phyllostegia stachyoides</i>	Lamiaceae	No common name	U.S.A. (HI).
T	L	R4	<i>Platanthera integrilabia</i>	Orchidaceae	Orchid, white fringeless	U.S.A. (AL, GA, KY, MS, NC, SC, TN, VA).
E	L	R1	<i>Portulaca villosa</i>	Portulacaceae	Ihi	U.S.A. (HI).
E	L	R1	<i>Pritchardia bakeri</i>	Arecaceae	Loulu (= Loulu lelo)	U.S.A. (HI).
E	L	R1	<i>Pseudognaphalium</i> (= <i>Gnaphalium</i> ) <i>sandwicensium</i> var. <i>molokaiense</i> .	Asteraceae	Enaena	U.S.A. (HI).
E	L	R1	<i>Ranunculus hawaiiensis</i>	Ranunculaceae	Makou	U.S.A. (HI).
E	L	R1	<i>Ranunculus mauianus</i>	Ranunculaceae	Makou	U.S.A. (HI).
E	L	R1	<i>Sanicula sandwicensis</i>	Apiaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Santalum involutum</i>	Santalaceae	Iliahi	U.S.A. (HI).
E	L	R1	<i>Schiedea diffusa</i> ssp. <i>diffusa</i> .	Caryophyllaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Schiedea pubescens</i>	Caryophyllaceae	Maolioli	U.S.A. (HI).
E	L	R1	<i>Sicyos lanceoloideus</i>	Cucurbitaceae	Anunu	U.S.A. (HI).
E	L	R1	<i>Solanum nelsonii</i>	Solanaceae	Popolo	U.S.A. (HI).
E	L	R1	<i>Stenogyne kaalae</i> ssp. <i>sherffii</i> .	Lamiaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Wikstroemia skottsbergiana</i> .	Thymelaceae	Akia	U.S.A. (HI).
<b>FERNS AND ALLIES</b>						
E	L	R1	<i>Asplenium diellaciniatum</i>	Aspleniaceae	No common name	U.S.A. (HI).
E	L	R1	<i>Cyclosorus boydiae</i>	Thelypteridaceae	Kupukupu makalii	U.S.A. (HI).
E	L	R1	<i>Deparia kaalaana</i>	Athyraceae	No common name	U.S.A. (HI).
E	L	R1	<i>Dryopteris glabra</i> var. <i>pusilla</i> .	Dryopteridaceae	Hohiu	U.S.A. (HI).
E	L	R1	<i>Huperzia</i> (= <i>Phlegmariurus</i> ) <i>stemmermanniae</i> .	Lycopodiaceae	No common name	U.S.A. (HI).

TABLE 2—ANIMALS AND PLANTS FORMERLY CANDIDATES OR FORMERLY PROPOSED FOR LISTING—Continued

[Note: See end of **SUPPLEMENTARY INFORMATION** for an explanation of symbols used in this table]

Status		Lead region	Scientific name	Family	Common name	Historical range
Code	Expl.					
E .....	L .....	R1 .....	<i>Hypolepis hawaiiensis</i> var. <i>mauiensis</i> .	Dennstaedtiaceae	Olua .....	U.S.A. (HI).
E .....	L .....	R1 .....	<i>Microlepia strigosa</i> var. <i>mauiensis</i> (= <i>Microlepia</i> <i>mauiensis</i> ).	Dennstaedtiaceae	No common name .....	U.S.A. (HI).

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