

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

[Docket No. FWS-HQ-ES-2019-0009; FF09E21000 FXES1119090000 167]

**Endangered and Threatened Wildlife and Plants; Review of Domestic and Foreign 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:** Notice 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 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 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, 2016, through September 30, 2018. 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 notice at any time.

**ADDRESSES:** This notice is available on the internet at <http://www.regulations.gov> and <http://www.fws.gov/endangered/what-we-do/cnor.html>.

*For domestic species:* 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 Domestic Listing, Falls Church, VA (see address under **FOR FURTHER INFORMATION CONTACT**), or on our website ([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 appropriate 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 Domestic Listing, Falls Church, VA (see address under **FOR FURTHER INFORMATION CONTACT**).

*For species foreign to the United States:* Please submit any new information, materials, comments, or questions of a general nature on this notice or pertaining to a specific species to the appropriate address listed under **FOR FURTHER INFORMATION CONTACT**. Species-specific information and materials we receive will be available for public inspection by appointment, during normal business hours, at the appropriate address listed under **FOR FURTHER INFORMATION CONTACT**. General information we receive will be available at the Branch of Delisting and Foreign Species, Falls Church, VA (see address under **FOR FURTHER INFORMATION CONTACT**).

**FOR FURTHER INFORMATION CONTACT:**

*For domestic species:* Chief, Branch of Domestic Listing, U.S. Fish and Wildlife Service, MS: ES, 5275 Leesburg Pike, Falls Church, VA 22041-3803 (telephone 703-358-1796).

*For species foreign to the United States:* Chief, Branch of Delisting and Foreign Species, U.S. Fish and Wildlife Service, MS: ES, 5275 Leesburg Pike, Falls Church, VA 22041-3803 (telephone 703-358-1735).

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 (see Request for Information, below). 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 (ESA; 16 U.S.C. 1531 *et seq.*), 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 Office listed under Request for Information, below, or visit our website, <http://www.fws.gov/angered/what-we-do/cca.html>.

Publication of this notice has been delayed due to efforts to resolve outstanding issues. As a result, many of the candidate forms reflect that our formal analysis was conducted in fall of 2017, as shown by the date as of which the information is current on each form. However, we were able to update a small subset of the candidate forms recently to reflect additional information we have obtained on those species. We intend to publish an updated combined CNOR for animals and plants that will update all of the candidate forms, including our findings on resubmitted petitions and a description of our progress on listing actions, in the near future in the **Federal Register**.

#### *Previous Notices of Review*

We have been publishing CNORs since 1975. The most recent was published on December 2, 2016 (81 FR 87246). CNORs published since 1994 are available on our website, <http://www.fws.gov/angered/what-we-do/cnor.html>. For copies of CNORs published prior to 1994, please contact the Branch of Domestic Listing (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. 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. However, 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 website at: [http://www.fws.gov/angered/esa-library/pdf/1983\\_LPN\\_Policy\\_FR\\_pub.pdf](http://www.fws.gov/angered/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—including citations to, and more-detailed analyses of, the best scientific and commercial data available—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 CNORs 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 CNORs for species foreign to the United States on October 17, 2016 (81 FR 71457) and for domestic species on December 2, 2016 (81 FR 87246), 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 CNORs, we have worked on findings in response to petitions to list species, 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).

Combined with other findings and determinations published separately from this CNOR, 41 species are now candidates awaiting preparation of rules proposing their listing. Table 1 identifies these 41 species, along with the 17 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 CNORs, and includes 29 species identified in the previous CNORs as either proposed for listing or classified as candidates that are no longer in those categories. This includes 17 species for which we published a final listing rule, 8 candidate species for which we published separate not-warranted findings and removed them from candidate status, and 4 species for which we published a withdrawal of a proposed rule.

#### New Candidates

We are not identifying any new candidate species through this notice.

#### Listing Priority Changes in Candidates

We reviewed the LPNs for all candidate species and are changing the LPN for the Colorado delta clam (*Mulinia modesta*) and longfin smelt (*Spirinchus thaleichthys*) for the reasons discussed below.

**Colorado delta clam**—The Colorado delta clam is a relatively large, estuarine bivalve that was once very abundant at the head of the Gulf of California in the Colorado River estuary in Mexico prior to the construction of dams on the Colorado River. In our previous CNOR (81 FR 71457; October 17, 2016), we reported that the Colorado delta clam was endemic to the upper Gulf of California within the Colorado River estuary. However, experts have recently confirmed that *Mulinia coloradoensis* is actually a junior synonym (part of the broader taxon) of *M. modesta*. Recognizing that the clam is *M. modesta*, we now also recognize that the clam has a broader distribution into the northern and central portions of the Gulf of California. Therefore, the species is more widespread than we previously believed, and it is capable of living in salinities ranging from brackish (mixture of salt and fresh water) to full seawater. Because this species is not restricted to the Colorado delta, it is likely that there are subpopulations of

the species in other areas in the Gulf of California.

Information on the population numbers and trends for the species is limited. The subpopulation in the Colorado River delta and upper Gulf of California has experienced at least a 90 percent decline, and one post-dam study indicated that the species comprised 0.77 percent of the overall living intertidal shelly macrofauna (including mollusk, echinoderm, and brachiopod) in this area. We could not find information regarding numbers of the Colorado delta clam in subpopulations elsewhere in the Gulf of California because benthic surveys of the near-coastal invertebrate macrofauna in this area appear to be lacking. However, the area of potentially suitable habitat available to the clam is greater than we previously believed. The species has not been assessed for the International Union for the Conservation of Nature's (IUCN) Red List. It is not commercially harvested or threatened by international trade, and it is not listed in any appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Although the specific causes for the dramatic decline of the clam in the Colorado delta and upper Gulf of California region have not definitively been identified, several researchers have indicated that it was a consequence of decrease in the Colorado River's inflow to the estuary since completion of the dams, and there is strong circumstantial evidence for this assertion. Environmental changes to the estuary associated with the decrease in river inflow include increased salinity, decreased sediment load, decreased input of naturally derived nutrients, and elimination of the spring/summer flood. Dams and diversions along the Colorado River have greatly affected the estuarine environment of the Colorado delta and have likely caused the localized decline in abundance of the clam in this region. However, we have no reason to believe that dams and diversions are a stressor for the Colorado delta clam elsewhere within its range in the northern and central portions of the Gulf of California.

Stressors for the clam throughout its range may arise from other natural or manmade factors affecting the clam's continued existence, such as pollution-related problems and effects from climate change. One example of a pollution-related problem is a 2003 harmful algal bloom that caused fish and bivalve mortalities along 94 square kilometers (km<sup>2</sup>) (36 square miles (mi<sup>2</sup>)) of the coastline. Potential stressors to

the clam associated with the effects of climate change include marine transgression, increased intensity and frequency of storms, and further invasion by nonnative species. However, studies of climate change and its effects to species in the Gulf of California are limited.

In the previous CNOR (81 FR 71457; October 17, 2016), the Colorado delta clam was assigned an LPN of 2. After reevaluating the status of and threats to the Colorado delta clam, we have determined that a change in the LPN for the species is warranted. With the recent confirmation that the clam is *Mulinia modesta*, we now recognize that it has a broader distribution into the northern and central portions of the Gulf of California and is capable of living in full seawater. Therefore, our review of the best information available indicates that the Colorado delta clam exists across a greater range in the Gulf of California than we previously believed. However, we lack information about the distribution and viability of populations of the clam outside of the Colorado delta region. Despite the conservation measures in place (primarily two large protected areas), the species continues to face habitat loss and degradation in the Colorado delta region due to dams and diversions on the Colorado River. Because this threat appears to be affecting the clam in upper Gulf of California, and not in the remainder of its range, it is moderate in magnitude. The threat of habitat loss and degradation in the Colorado delta region is ongoing and, therefore, imminent. Thus, we have changed the LPN from a 2 to an 8 to reflect imminent threats of moderate magnitude.

**Longfin smelt, Bay-Delta DPS**—The following summary is based on information contained in our files and the 12-month finding published in the **Federal Register** on April 2, 2012 (77 FR 19756). In our 12-month finding, we determined that the longfin smelt San Francisco Bay-Delta distinct vertebrate population segment (Bay-Delta DPS) warranted listing as an endangered or threatened species under the Act, but that listing was precluded by higher priority listing actions. In our previous CNOR (81 FR 87246; December 2, 2016), the longfin smelt was assigned an LPN of 3. Longfin smelt measure 9–11 centimeters (cm) (3.5–4.3 inches (in)) in 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 San Francisco 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 San Francisco Bay-Delta have declined significantly since the 1980s. Abundance indices derived from the Fall Midwater Trawl, Bay Study Midwater Trawl, and Bay Study Otter Trawl 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 Fall Midwater Trawl monitoring surveys of the California Department of Fish and Wildlife (formerly the California Department of Fish and Game).

The primary threats to the Bay-Delta DPS of longfin smelt are reduced freshwater flows, competition from introduced species, and potential contaminants. 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). Reductions in food availability and disruptions of the Bay-Delta food web caused by establishment of the nonnative overbite clam (*Corbula amurensis*) and ammonium concentrations have also likely attributed to declines in the species' abundance within the San Francisco Bay-Delta. The threats remain high in magnitude, as they pose a significant risk to the DPS throughout its range.

While Delta outflow is the predominant driver of the DPS's abundance, the best available information indicates that high winter-spring flows have occurred in recent and the current water years. Additionally, the State of California has listed the longfin smelt under the California Endangered Species Act, and is preparing a new permit for operation of the State Water Project that will be issued by the end of the year. The California State Water Resources Control Board just adopted new flow objectives for the Lower San Joaquin River and will be addressing Delta flow objectives this year. Through these processes, we anticipate the State will take action to reduce the threats particularly around outflow, and is poised to do so in the near term. Therefore, the threat is not operative in the immediate future, and thus is nonimminent. As such, we are identifying an LPN of 6 for this population.

### Candidate Removals

Uvea parakeet (*Eunymphicus uvaensis*)—We have evaluated the threats to the Uvea parakeet and have considered factors that, individually and in combination, currently or potentially could pose a risk to the species and its habitat. After a review of the best scientific and commercial data available, we conclude that listing this species is not warranted because it is not in danger of extinction throughout all or a significant portion of its range, or likely to become so within the foreseeable future. Therefore, we no longer consider the Uvea parakeet to be a candidate species for listing. We will continue to monitor the status of this species and to accept additional information and comments concerning this finding. We will reconsider our determination in the event that we gather new information that indicates that the threats are of a considerably greater magnitude or imminence than identified through assessments of information contained in our files, as summarized below.

The Uvea parakeet is a relatively large, green parakeet found on the small atoll of Uvea, located approximately 1,500 kilometers (km) (932 miles (mi)) east of Australia in the Loyalty Archipelago, New Caledonia (a territory of France). The entire island of Uvea is considered an "Important Bird Area" by BirdLife International, which works with communities to combine conservation with sustainable livelihoods. Additionally, in 2008, Uvea Island became part of the "Lagoons of New Caledonia" a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site.

Uvea parakeets were introduced to the adjacent island of Lifou (to establish a second population) in 1925 and 1963, but these introductions failed. The species occupies both the north and south ends of Uvea Island. The species primarily uses older (old-growth) forest habitats and nests in the cavities of living *Syzygium* and *Mimusops* trees. Their exclusive use of tree cavities for nesting may be a limiting factor. In 1977, the Uvea parakeet population was estimated to be between 500 to 800 individuals. The most recent estimate of the Uvea parakeet population is 1,730 birds with a 95-percent confidence interval of 963 to 3,203 individuals.

The Uvea parakeet is listed as "Endangered" on the IUCN Red List. More recently, IUCN downlisted the Uvea parakeet to vulnerable, noting that decline in forest quality may not be affecting the species, and because the

population trend is increasing. This species was listed on Appendix I of CITES in July 2000. An Appendix I listing includes species threatened with extinction whose trade is permitted only under exceptional circumstances, which generally precludes commercial trade.

Historically, the primary stressor to the Uvea parakeet was the capture of juveniles for the pet trade. Although New Caledonian law has protected the Uvea parakeet from trade since 1935, harvest and export were common until recent decades. Capture and trade likely increased in the second half of the 20th century. Between September 1992 and February 1993, it appears that more than 50 young parakeets were illegally captured and most were then illegally exported. Additionally, capture of young parakeets involves cutting nest cavities open to extract nestlings, which destroys the cavities and makes them unsuitable for future nesting.

In 1993, a nongovernmental organization, the Association for the Protection of the Uvea Parakeet (Association), was formed to help recover the species. The Association was established with mostly local members to increase the chances that Uvea parakeet conservation would be accepted by the Island community. The Association initiated long-term monitoring and ecological studies and prepared two recovery plans (1997–2002 and 2003–2008). Capture of Uvea parakeets is now restricted, and the species is monitored using local guides as part of its recovery plan. As part of this effort, these local guides are paid to spread conservation messages and protect parakeet nests; since 2006, the number of guides increased to 10. With the establishment of a community-based effort to protect the parakeet, it appears that nest poaching is no longer occurring such that it significantly affects the species.

Other potential threats to the parakeet include: (1) Habitat loss and degradation, particularly as it negatively affects nesting sites and may impede species dispersal; (2) competition and predation from nonnative species such as the honey bee (*Apis mellifera ligustica*), which competes with the Uvea parakeet for tree cavities, and the potential introduction of the nonnative ship rat (*Rattus rattus*), which preys on forest birds (although we are not aware of any indication at this time that such an invasion has already occurred, if an invasion were to occur in the future, it could very quickly affect the parakeet); (3) the potential for Psittacine beak and feather disease; and (4) effects from climate change, which may negatively alter the Uvea parakeet's habitat in the

future if they lead to loss of forest habitat or important food sources, and the parakeet is unable to adapt.

Overall, the increase in the population is attributed to the reduction in nest poaching, and it appears that the community-based efforts to protect the parakeet have been successful. The population has increased significantly from 1998 to 2008 despite the threats noted above.

In our previous CNOR (81 FR 71457; October 17, 2016), we assigned the Uvea parakeet an LPN of 8. After reevaluating the available information, including new information that has become available since our previous CNOR, we find that this species no longer warrants listing. Although it is an island endemic that is restricted in range, the primary threat to the species—poaching and trade—has been removed, and the population has responded and expanded. Although we identified a number of other potential threats to the species (e.g., habitat loss and degradation, competition and predation from nonnative species, disease, future effects from climate change), the population has rebounded despite these stressors and is increasing. Recent population trend data support these findings and have led to the International Union for Conservation of Nature's decision to downlist the species on its Red List from "endangered" to "vulnerable" in 2017. Additionally, New Caledonia and its conservation partners remain active in conservation efforts, and the designation of Uvea Island as both an "Important Bird Area" and a UNESCO World Heritage Site bode well for future conservation of the species and its habitat. Therefore, we have determined that this species no longer warrants listing, and we are removing it from the candidate list.

### 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). The second method 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 threats 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 supersede the earlier findings, although all previous findings are part of the administrative record for the new finding, and in the new finding, we may rely upon them or incorporate them by reference as appropriate, in addition to explaining why the finding has changed.

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 41 candidates for which we have received a petition to list and the 4 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, 2016, through September 30, 2017. 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 domestic species, from the appropriate office listed under **FOR FURTHER INFORMATION CONTACT** for species foreign to the United States, or from the Fish and Wildlife Service's internet website: [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 (spending cap). 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 rules to add species to the Lists or to change the status of species from threatened to endangered; 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, from FY 2002 through FY 2017, the Service's listing budget 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 between 2006 and 2017, we have not needed to use all of the funds within the critical habitat subcap 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.

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 and the amount of funds needed to complete court-mandated actions within the cap, Congress and the courts have in effect determined the

amount of money remaining (after completing court-mandated actions) for listing activities nationwide. Therefore, the funds that remain within the listing cap—after paying for work 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.

From FY 2012 through FY 2017, Congress had 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 did not need to use all of the funds within either subcap, we were able to use the remaining funds for completing proposed or final listing determinations.

For FY 2017, Congress passed a Consolidated Appropriations Act of 2017 (Pub. L. 115–31), included an overall listing spending cap of \$20,515,000, and the subcaps of no more than \$4,569,000 to be used for critical habitat determinations; no more than \$1,501,000 to be used for listing actions for foreign species; and no more than \$1,498,000 to be used to make 90-day or 12-month findings on petitions.

In FY 2018, through the Consolidated Appropriations Act of 2018 (Pub. L. 115–141), the use of subcaps was discontinued, and Congress appropriated the Service \$18,818,000 under a consolidated cap for all domestic and foreign listing work, including status assessments, listings, domestic critical habitat determinations, and related activities.

#### 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. Our practice of proposing to designate critical habitat concurrent with listing species requires additional coordination and an analysis of the economic impacts

of the designation, and thus adds to the complexity and cost of our work. 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 estimated 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 domestic 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 efforts to make initial petition findings within 90 days of receiving the petition to the maximum extent practicable, at the end of FY 2018, we had more than 446 12-month petition findings for domestic species yet to be initiated and completed. Because we are not able to work on all of these at once, we prioritized status reviews and accompanying 12-month findings (81 FR 49248; July 27, 2016) and developed a multi-year workplan for completing them. For foreign species, we currently have 17 pending 12-month petition findings yet to be initiated and completed.

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. Therefore, it is 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 domestic listing and critical habitat decisions over the subsequent 7 years. At the close of FY 2018, the workplan identified the Service's schedule for addressing all domestic species on the candidate list and conducting 251 status reviews (also referred to as 12-month findings) by FY 2023 for domestic species that have been petitioned for Federal protections under the ESA. The petitioned species are prioritized using our final prioritization methodology (81 FR 49248; July 27, 2016). As we implement our listing work plan and work on proposed rules for the highest-priority species, we increase efficiency by preparing multi-species proposals when appropriate, and these may include species with lower priority if they overlap geographically or have the same threats as one of the highest-priority species. The National Listing Workplan is available online at: <https://www.fws.gov/endangered/what-we-do/listing-workplan.html>.

For foreign species, the Service has 17 pending 12-month petition findings that are subject to statutory deadlines. Because these actions are subject to statutory deadlines, and, thus, are higher priority than work on proposed listing determinations for the 19 foreign candidate species, publication of proposed rules for these 19 species is

precluded. In addition, available staff resources are also a factor in determining which high-priority foreign species are provided with funding. The Branch of Delisting and Foreign Species may, depending on available staff resources, work on foreign candidate species with an LPN of 2 or 3 and, when appropriate, species with a lower priority if they overlap geographically or have the same threats as the species with higher priority.

#### Listing Program Workload

The National Listing Workplan that the Service released in 2016 outlined work for domestic species over the period from 2017 to 2023. Through FY 2017, commitments set forth 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”)) greatly affected our preclusion analysis. First, the Service was limited in the extent to which it could undertake additional actions within the Listing Program through FY 2017 because complying with the requirements of the MDL Settlement Agreement exhausted a large portion of the funds within the spending cap for the listing program. Second, because the settlement was court-approved, it was the Service's highest priority (compliance with a court order) for FY 2016 to fulfill the requirements of those settlement agreements. Included within the settlement agreements was a requirement to complete—by the end of FY 2016—proposed listings or not-warranted findings for the remaining candidate species that were included in the 2010 CNOR, as well as to make final determinations on any of the proposed listings within the statutory timeframe. Therefore, one of the Service's highest priorities was to make steady progress towards completing the remaining final listing determinations for the 2010 candidate species by the end of 2017, taking into consideration the availability of staff resources. In FY 2018, the Service fulfilled the commitments set forth as part of the MDL Settlement Agreement.

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. We provide tables under *Expeditious Progress*, below, identifying the higher-priority listing actions that we completed in FYs 2017 and 2018, as

well as those we worked on but did not complete in FY 2017 or 2018.

#### *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 expeditious progress is being made is a function of the resources available and the competing demands for those funds. As discussed earlier, the FY 2017 appropriations law included a spending cap of \$20,515,000 for listing activities; within that amount, Congress prohibited the Service from spending more than \$1,501,000 on listing determinations for foreign species. The FY 2018 appropriations law included a spending cap of \$18,818,000 for listing activities.

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. (Although we do not discuss it in detail here, we are also making expeditious progress in removing domestic species from the list under the Recovery program, as well as reclassifying endangered species as threatened, in light of the resources available for delisting domestic species, which is funded through the recovery line item in the budget of the Endangered Species Program. During FYs 2017 and 2018, we finalized delisting rules for 8 species and downlisting rules for 5 species (in addition to completing numerous recovery planning activities).)

Below, we provide tables cataloguing the work of the Service's domestic and foreign species listing programs in FYs 2017 and 2018. 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. As the tables below demonstrate, during FYs 2017 and 2018, the Service completed the following number of actions within category 1: 90-day findings for 13 species; within category 2: 12-month findings for 42 species; and within category 3: Proposed listing rules for 21 species (including concurrent proposed critical habitat designations for 3 species), and final listing rules for 28 species



(including concurrent final critical habitat determinations for 3 species).

After taking into consideration the limited resources available for these accounts, the competing demands for those funds, and the completed work catalogued in the tables below, we find that we are making expeditious progress in all three of the steps necessary for adding qualified species to the Lists (identifying, evaluating, and adding/removing species).

First, we are making expeditious progress in identifying species that may qualify for listing. In FYs 2017 and 2018, we completed 90-day findings on petitions to list 13 species and 12-month findings for petitions to list 42 species.

Second, we are making expeditious progress in working towards adding candidate species to the Lists. In FYs 2017 and 2018, we funded and worked on the development of 12-month findings for 29 species and proposed listing determinations for 11 candidates. Although we did not complete those actions during FY 2017 or FY 2018, we made expeditious progress towards doing so.

Third, we are making expeditious progress in listing qualified species. In FYs 2017 and 2018, we resolved the status of 28 species that we determined, or had previously determined, qualified for listing, delisting, or downlisting. Moreover, for 24 of those species, the resolution was to finalize the listing proposal (22 species), some with concurrent designations of critical habitat for domestic species, or the delisting proposal. For four species, we published withdrawals of the proposed rules. We also proposed to list an additional 21 qualified species and to downlist an additional 2 species.

Our accomplishments in FYs 2017 and 2018 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 domestic 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. By the end of FY 2018, the Service had completed proposed listing rules or not-warranted findings for all 251 of the domestic candidate species in the 2010 CNOR, as well as final listing determinations for all of the proposed listings rules among them—thus completing all requirements specified under the MDL Settlement Agreement. By completing both the requirements under the MDL Settlement Agreement and numerous other listing actions included in the Service’s current workplan, the Service is making expeditious progress to add qualified species to the Lists.

The Service’s progress in FYs 2017 and 2018 included completing and publishing the following actions:

FY 2017–2018 COMPLETED DOMESTIC LISTING AND FOREIGN ACTIONS

| Publication date | Title*  | Actions  | FR pages          |
|------------------|---|--|-------------------|
| 10/4/2016 .....  | Proposed Threatened Species Status for Meltwater Ledian Stonefly and Western Glacier Stonefly.  | 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>Cicindelidia 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 Findings (10 domestic species)                                 | 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 |
| 10/11/2016 ..... | Proposed Threatened Species Status for <i>Sideroxylon reclinatum</i> ssp. <i>austrorfloridense</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 or Endangered ....                                   | 81 FR 70282–70308 |
| 11/28/2016 ..... | Threatened Species Status for Hyacinth Macaw  | Proposed Listing—Threatened .....  | 81 FR 85488–85507 |
| 11/30/2016 ..... | 90-Day Findings on Three Petitions .....  | 90-Day Petition Findings (2 domestic species for listing and 1 foreign species). | 81 FR 86315–86318 |
| 12/14/2016 ..... | Endangered Species Status for Five Sri Lankan Tarantulas.   | Proposed Listing—Endangered .....  | 81 FR 90297–90314 |
| 1/11/2017 .....  | Endangered Species Status for Rusty Patched Bumble Bee.   | Final Listing—Endangered .....   | 82 FR 3186–3209   |
| 4/5/2017 .....   | Threatened Species Status for Yellow Lance .....  | Proposed Listing—Threatened .....  | 82 FR 16559–16569 |
| 4/5/2017 .....   | Removal of the Scarlet-Chested Parrot and the Turquoise Parrot From the Federal List of Endangered and Threatened Wildlife.   | Final Delisting .....  | 82 FR 16522–16540 |
| 4/7/2017 .....   | Threatened Species Status for the Headwater Chub and Roundtail Chub Distinct Population Segment.  | Withdrawal of Proposed Listing .....   | 82 FR 16981–16988 |

## FY 2017–2018 COMPLETED DOMESTIC LISTING AND FOREIGN ACTIONS—Continued

| Publication date | Title*   | Actions   | FR pages          |
|------------------|--|---|-------------------|
| 4/19/2017        | 90-Day Findings on Two Petitions   | 90-Day Petition Findings (2 domestic species for listing).  | 82 FR 18409–18411 |
| 9/7/2017         | Endangered Species Status for Guadalupe Fescue; Designation of Critical Habitat for Guadalupe Fescue.  | Final Listing—Endangered; Final Critical Habitat  | 82 FR 42245–42260 |
| 9/20/2017        | Endangered Species Status for Sonoyta Mud Turtle.  | Final Listing—Endangered  | 82 FR 43897–43907 |
| 9/20/2017        | Threatened Species Status for Pearl Darter   | Final Listing—Threatened  | 82 FR 43885–43896 |
| 9/20/2017        | Threatened Species Status for the Iwi  | Final Listing—Threatened  | 82 FR 43873–43885 |
| 9/29/2017        | Withdrawal of the Proposed Rule to List Ken's Amphipod.  | Withdrawal of Proposed Listing  | 82 FR 45551–45574 |
| 10/4/2017        | Threatened Species Status for the Candy Darter   | Proposed Listing—Threatened   | 82 FR 46197–46205 |
| 10/4/2017        | 12 Month Findings on Petitions To List the Holiday Darter, Trispot Darter, and Bridled Darter; Threatened Species Status for Trispot Darter.   | 12-Month Petition Findings; Proposed Listing—Threatened.  | 82 FR 46183–46197 |
| 10/5/2017        | 12-Month Findings on Petitions To List 25 Species as Endangered or Threatened Species.   | 12-Month Petition Findings (25 domestic species)  | 82 FR 46618–46645 |
| 10/6/2017        | Endangered Species Status for <i>Dalea carthagenensis</i> var. <i>floridana</i> (Florida Prairie-clover), and Threatened Species Status for <i>Sideroxylon reclinatum</i> ssp. <i>austrifloridense</i> (Everglades Bully), <i>Digitaria pauciflora</i> (Florida pineland crabgrass), and <i>Chamaesyce deltoidea</i> ssp. <i>pinetorum</i> (pineland sandmat). | Final Listing—Endangered and Threatened   | 82 FR 46691–46715 |
| 12/6/2017        | 12-Month Findings on Petitions To List Four Species as Endangered or Threatened Species.   | 12-Month Petition Findings (4 domestic species)   | 82 FR 57562–57565 |
| 12/20/2017       | 90-Day Findings for Five Species   | 90-Day Petition Findings (5 domestic species for listing).  | 82 FR 60362–60366 |
| 12/27/2017       | Endangered Species Status of the Yangtze Sturgeon.   | Proposed Listing—Endangered   | 83 FR 61230–61241 |
| 12/29/2017       | 12-Month Findings on Petitions To List a Species (Beaverpond Marstonia) and Remove a Species (Southwestern Willow Flycatcher) From the Federal Lists of Endangered and Threatened Wildlife and Plants.   | 12-Month Petition Findings Finding (1 domestic species for listing and 1 domestic species for delisting). | 80 FR 61725–61727 |
| 1/3/2018         | Threatened Species Status for the Panama City Crayfish.  | Proposed Listing—Threatened   | 83 FR 330–341     |
| 1/3/2018         | Endangered Species Status for Black Warrior Waterdog and Designation of Critical Habitat.  | Final Listing—Endangered; Final Critical Habitat  | 83 FR 257–284     |
| 1/4/2018         | Endangered Species Status for Barrens Topminnow.   | Proposed Listing—Endangered   | 83 FR 490–498     |
| 1/16/2018        | Taxonomical Update for Orangutan   | Direct Final Rule   | 83 FR 2085–2087   |
| 2/9/2018         | Endangered Species Status for Texas Hornshell  | Final Listing—Endangered  | 83 FR 5720–5735   |
| 3/15/2018        | Withdrawal of the Proposed Rule To List <i>Chorizanthe parryi</i> var. <i>fernandina</i> (San Fernando Valley Spineflower).  | Withdrawal of Proposed Listing  | 83 FR 11453–11474 |
| 4/3/2018         | Threatened Species Status for Yellow Lance   | Final Listing—Threatened  | 83 FR 14189–14198 |
| 4/6/2018         | Threatened Species Status for Louisiana Pinesnake.   | Final Listing—Threatened  | 83 FR 14958–14982 |
| 4/6/2018         | Section 4(d) Rule for Louisiana Pinesnake  | Proposed Section 4(d) Rule  | 83 FR 14836–14841 |
| 4/12/2018        | Endangered Status for the Island Marble Butterfly and Designation of Critical Habitat.   | Proposed Listing—Endangered; Proposed Critical Habitat.   | 83 FR 15900–15936 |
| 4/17/2018        | 90-Day Findings for Two Species  | 90-Day Petition Findings (1 foreign species for listing and 1 domestic species for delisting).            | 83 FR 16819–16822 |
| 6/27/2018        | 90-day Findings for Three Species  | 90-Day Petition Findings (2 domestic species for listing and 1 domestic species for delisting).           | 83 FR 30091–30094 |
| 7/31/2018        | Endangered Species Status for Five Sri Lankan Tarantulas.  | Final Listing—Endangered  | 83 FR 36755–36773 |
| 8/13/2018        | Threatened Species Status for the Hyacinth Macaw.  | Final Listing—Threatened  | 83 FR 39894–39916 |
| 9/5/2018         | Reclassifying the Golden Conure From Endangered to Threatened With a Section 4(d) Rule.  | Proposed Reclassification—Threatened  | 80 FR 45073–45087 |

\*90-day and 12-month finding batches include findings regarding delisting or downlisting of domestic species, which are funded through the Recovery account, as well as findings regarding foreign species, which are funded through the account for foreign species. To make the sources of funding more clear, and ensure that the number of species reported in the titles of batched findings matches the numbers we report in this CNOR for domestic listing and foreign species, we identify the number of foreign and domestic species and the requested action (listing or delisting) in each batch.

Our expeditious progress also funded in previous fiscal years and in complete in FY 2017 or 2018. For these included work on listing actions that we FYs 2017 and 2018, but did not species, we completed the first step, and

worked on the second step necessary for adding species to the Lists. These actions are listed below.

ACTIONS FUNDED IN PREVIOUS FYs AND IN FYs 2017 AND 2018 BUT NOT COMPLETED DURING THAT TIME

| Species   | Action                          |
|---|---------------------------------|
| Chapin Mesa milkvetch .....                             | Proposed listing determination  |
| <i>Cirsium wrightii</i> (Wright's marsh thistle) .....  | Proposed listing determination. |
| Hermes copper butterfly .....                           | Proposed listing determination. |
| Marron bacora .....                                     | Proposed listing determination. |
| Rattlesnake-master borer moth .....                     | Proposed listing determination. |
| Red-crowned parrot .....                                | Proposed listing determination. |
| Sierra Nevada red fox .....                             | Proposed listing determination. |
| Texas fatmucket .....                                   | Proposed listing determination. |
| Texas fawnsfoot .....                                   | Proposed listing determination. |
| Texas pimpleback .....                                  | Proposed listing determination. |
| Whitebark pine .....                                    | Proposed listing determination. |
| Northern spotted owl .....                              | 12-month finding.               |
| Lesser prairie chicken .....                            | 12-month finding.               |
| Carolina madtom .....                                   | 12-month finding.               |
| Neuse River waterdog .....                              | 12-month finding.               |
| Franklin's bumblebee .....                              | 12-month finding.               |
| False spike .....                                       | 12-month finding.               |
| Bartram stonecrop .....                                 | 12-month finding.               |
| Beardless chinch weed .....                             | 12-month finding.               |
| Chihuahua scurfpea .....                                | 12-month finding.               |
| <i>Donrichardsonia macroneuron</i> (unnamed moss) ..... | 12-month finding.               |
| Peppered chub .....                                     | 12-month finding.               |
| Eastern hellbender .....                                | 12-month finding.               |
| Big Cypress epidendrum .....                            | 12-month finding.               |
| Cape Sable orchid .....                                 | 12-month finding.               |
| Clam-shell orchid .....                                 | 12-month finding.               |
| Longsolid .....   | 12-month finding.               |
| Purple lilliput .....                                   | 12-month finding.               |
| Round hickorynut .....                                  | 12-month finding.               |
| Ashy darter .....                                       | 12-month finding.               |
| Barrens darter .....                                    | 12-month finding.               |
| Redlips darter .....                                    | 12-month finding.               |
| Arkansas mudalia .....                                  | 12-month finding.               |
| Brook floater .....                                     | 12-month finding.               |
| Elk River crayfish .....                                | 12-month finding.               |
| Seaside alder .....                                     | 12-month finding.               |
| Yellow banded bumble bee .....                          | 12-month finding.               |
| Joshua tree .....                                       | 12-month finding.               |
| Panamint alligator lizard .....                         | 12-month finding.               |
| Tricolored blackbird .....                              | 12-month finding.               |

We also funded work on resubmitted petition findings for 20 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 16 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 findings (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.

During FYs 2017 and 2018, we also funded work on resubmitted petition findings for petitions to uplist four listed species (two grizzly bear populations, 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.

**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.

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so within the foreseeable future throughout all or a significant portion of its range. Because we have determined that each candidate species is in danger of extinction throughout all of its range or likely to become an endangered species within the foreseeable future throughout all of its range, we find it unnecessary to proceed to an evaluation of potentially significant portions of the range. Where the best available information allows the Services to determine a status for the species rangewide, that determination should be given conclusive weight because a rangewide determination of status more accurately reflects the species' degree of imperilment and better promotes the purposes of the Act. Under this reading, we should first consider whether the species warrants listing "throughout all" of its range and proceed to conduct a "significant portion of its range" analysis if, and only if, a species does not qualify for listing as either an endangered or a threatened species according to the "throughout all" language. We note that the court in *Desert Survivors v. Department of the Interior*, No. 16-cv-01165-JCS, 2018 WL 4053447 (N.D. Cal. Aug. 24, 2018), did not address this issue, and our conclusion is therefore consistent with the opinion in that case.

Therefore, on the basis of the best available scientific and commercial information, we find that each candidate species below, for which we are making a resubmitted 12-month finding, warrants listing throughout all of its range in accordance with sections 3(6), 3(20), and 4(a)(1) of the Act.

#### Birds

**Southern helmeted curassow (*Pauxi unicornis*)**—The southern helmeted curassow is a game bird with a distinctive pale-blue horn-like appendage, or casque, above its bill. The southern helmeted curassow is known only from central Bolivia on the eastern slope of the Andes, where large portions of its habitat are in National Parks. The species inhabits dense, humid, foothill and lower montane forest and adjacent evergreen forest at altitudes between 450 and 1,500 meters (m) (1,476 to 4,921 feet (ft)).

The total population of southern helmeted curassow is estimated to be between 1,500 and 7,500 individuals and is declining. Hunting is believed to be the primary threat to the species, followed by habitat loss and degradation. Although the National Parks have been important for the preservation of the species, financial and human resources needed to protect park resources are limited. Within the Parks, there are human settlements and ongoing encroachment, including illegal logging operations and forest clearing for farming. Rural development and road building limit the species' ability to disperse. Range reductions due to effects from climate change are also predicted for the southern helmeted curassow, when warming temperatures may cause the species to shift its distribution upslope and outside of protected National Parks.

The southern helmeted curassow is classified as critically endangered on the IUCN Red List. Trade has not been noted internationally, and the species is not listed in any appendices of CITES. The species was listed in Annex B of the European Union (EU) Wildlife Trade Regulations that are directly applicable in all EU Member States. In 1997, the southern helmeted curassow was listed with all species in the genus *Pauxi*. In 2008, it was moved from Annex B to Annex D (*i.e.*, a lower level of protection) because it was one of the species that "are not subject to levels of international trade that might be incompatible with their survival, but warrant monitoring of trade levels." The species continues to be listed on Annex D.

In the October 17, 2016, CNOR, the southern helmeted curassow was assigned an LPN of 2. After reevaluating the threats to the species, we have determined that no change in the LPN is warranted. The southern helmeted curassow does not represent a monotypic genus. It faces threats that are high in magnitude based on its small, limited range. The few locations where it is believed to exist continue to face pressure from hunting and habitat loss and destruction, and the population will likely continue to decline. Because the species is experiencing ongoing significant population declines and habitat loss, we have made no change to the LPN of 2, which reflects imminent threats of high magnitude.

**Sira curassow (*Pauxi koepckeae*)**—The Sira curassow is a game bird that is known only from the Cerros del Sira region of Peru. Size and coloration are similar to the southern helmeted curassow, but the Sira curassow has a shorter and rounder pale-blue casque (a

horn-like bony appendage above the bill) that is flattened against the head. The Sira curassow inhabits cloud-forest habitat (a type of rainforest that occurs on high mountains in the tropics) at elevations from 1,100 to 1,450 m (3,609 to 4,757 ft) and above.

Although historical population data are lacking, the population is currently estimated at fewer than 250 mature individuals and is declining. The primary cause of the decline is ongoing hunting by local indigenous communities. Additionally, the Sira curassow's range within the Cerros del Sira region is limited (550 square kilometers (km<sup>2</sup>) (212 square miles (mi<sup>2</sup>)) and declining. Its habitat is being degraded by subsistence agriculture, forest clearing, road building, and associated rural development. Although the Sira curassow is legally protected in a large portion of its range in El Sira Communal Reserve, illegal hunting still occurs there. The species is classified as critically endangered on the IUCN Red List. It is not threatened by international trade, and it is not listed in any appendices of CITES or the EU Wildlife Trade Regulations.

In the October 17, 2016, CNOR, the sira curassow was assigned an LPN of 2. After reevaluating the threats to the species, we have determined that no change in the LPN is warranted. The Sira curassow does not represent a monotypic genus. It faces threats that are high in magnitude based on its small estimated population and limited range. The few locations where it is believed to exist continue to face pressure from hunting and habitat loss. The best scientific and commercial data available indicate that the population decline will continue in the future. Because the species is experiencing significant population declines due to both hunting and habitat loss and degradation, we have made no change to the LPN of 2, which reflects imminent threats of high magnitude.

**Bogotá rail (*Rallus semiplumbeus*)**—The Bogotá rail is found in the East Andes of Colombia, South America. It is a medium-sized nonmigratory rail largely restricted to areas at elevations from 2,500–4,000 m (8,202–13,123 ft) in and surrounding Bogotá, Columbia, on the Ubaté–Bogotá Plateau. This region formerly supported vast marshes and swamps, but few lakes with suitable habitat for the rail remain. The species is secretive, and wetland habitats most frequently used by rail are fringed by dense vegetation-rich shallows. The current population size of the Bogotá rail is estimated between 1,000 and 2,499 mature individuals and is thought to be declining. The primary threat to

the rail is habitat loss and degradation. Approximately 8 million people live in the City of Bogotá, and 11 million in the larger metro area. The wetlands have experienced a 97 percent loss in historical extent with few suitably vegetated marshes remaining. Additionally, road building may result in further colonization and human interference, including introduction of nonnative species in previously stable wetland environments. The Bogotá rail is listed as endangered at the global and national level by IUCN. Trade does not appear to be of concern at the international level, and the species is not listed in any appendices of CITES.

In the October 17, 2016, CNOR, the Bogotá rail was assigned an LPN of 2. After reevaluating the threats to this species, we have determined that no change in the LPN for the species is needed. The Bogotá rail does not represent a monotypic genus. It faces threats that are high in magnitude due to the pressures on the species' habitat. Its range is very small and is rapidly contracting because of widespread habitat loss and degradation. Although portions of the Bogotá rail's range occur in protected areas, most of the savanna wetlands are unprotected. The population is small and is believed to be declining. The factors affecting the species are ongoing, and are, therefore, imminent. Thus, the LPN remains at 2 to reflect imminent threats of high magnitude.

**Takahe (*Porphyrio hochstetteri*)**—The takahe is a large flightless bird in the rail family. The takahe was once widespread in the forest and grassland ecosystems on the South Island of New Zealand. It was thought to be extinct until it was rediscovered in the Murchison Mountains on the South Island in 1948. In addition to its native range on the mainland, the takahe has been introduced to offshore islands and mainland sanctuaries.

When rediscovered in 1948, it was estimated that the takahe population consisted of 100 to 300 birds, and the minimum total population now rests at 306 individuals. Several factors have historically led to the species' decline, including hunting, competition from introduced herbivores (animals that feed on plants), and predators such as weasels and the weka, a flightless woodhen that is endemic to New Zealand. Currently, weasel predation appears to be the most significant of these threats. Weasel trapping is an effective tool at slowly increasing survival and reproductive output of takahe; however, control efforts do not completely eliminate the threat.

Takahe is a long-lived bird, potentially living between 14 and 20 years, and has a low reproductive rate, with clutches consisting of one to three eggs. Severe weather in the Murchison Mountains (cold winters and high snowfall) may also be a limiting factor to the takahe. The population of takahe remains very small and has low genetic diversity relative to other species. The New Zealand Department of Conservation (NZDOC) is currently attempting to manage further loss of genetic diversity through translocations. Additionally, NZDOC has implemented a captive-breeding and release program to supplement the mainland population and has established several reserve populations on islands and fenced mainland sites; these actions are having a positive effect on population growth. The takahe is listed as endangered on the IUCN Red List, and New Zealand considers it a nationally critical species. It is not listed in any appendices of CITES as international trade is not a concern.

In the October 17, 2016, CNOR, the takahe was assigned an LPN of 8. After reevaluating the threats to the takahe, we have determined that no change in the classification of the magnitude and imminence of threats to the species is warranted at this time. The takahe does not represent a monotypic genus. The species is subject to predation by nonnative animals, particularly the introduced weasel. Although it has a small population, has limited suitable habitat, and may experience inbreeding depression, because the NZDOC is actively involved in measures to aid the recovery of the species, we find the threats are moderate in magnitude. Despite conservation efforts, the threats are ongoing and, therefore, imminent. Lack of suitable habitat and predation, combined with the takahe's small population size and naturally low reproductive rate, are threats to this species that are moderate in magnitude. Thus, the LPN remains at 8 to reflect imminent threats of moderate magnitude.

**Chatham oystercatcher (*Haematopus chathamensis*)**—The Chatham oystercatcher is native to the Chatham Island group located 860 km (534 mi) east of mainland New Zealand. The species breeds along the coastline of four islands in the chain: Chatham, Pitt, South East, and Mangere. The Chatham oystercatcher is found mainly along rocky shores, including wide volcanic rock platforms and occasionally on sandy or gravelly beaches.

The Chatham oystercatcher is the rarest oystercatcher in the world, with a recent population estimate of 300 to 320

individuals. The species has experienced a three-fold increase in its population since the first reliable census was conducted in 1987. Most of this increase occurred during a period of intensive management, especially predator control, from 1998 through 2004. The Chatham oystercatcher is listed as nationally critical by the NZDOC. It is classified as endangered on the IUCN Red List and is not listed in any appendices of CITES.

Predation of eggs and chicks, and to a lesser extent of adults, is thought to be the main impediment to the Chatham oystercatcher population. Although the Mangere and South East nature reserves are free of all mammalian predators, nonnative mammalian predators inhabit Chatham and Pitt Islands. Feral cats are the most common predator on eggs. Other documented predators include gulls (*Larus* spp.), the native brown skua (*Catharacta antarctica*), weka, and domestic dogs. Nest destruction and disturbance by humans and livestock are also noted threats. Habitat loss and degradation has occurred from introductions of nonnative Marram grass (*Ammophila arenaria*) in the early 1900s to revegetate destabilized dunes. The dense marram grass is unsuitable for Chatham oystercatcher nesting. Consequently, the Chatham oystercatcher is forced to nest closer to shore, where nests are vulnerable to tides and storm surges; up to 50 percent of eggs are lost in some years. Rising sea levels associated with climate change will likely affect future nesting success. Additionally, the Chatham oystercatcher may be at risk from loss of genetic diversity given its small population size.

In the October 17, 2016, CNOR, the Chatham oystercatcher was assigned an LPN of 8. After reevaluating the threats to this species, we have determined no change in the LPN for the species is warranted. The Chatham oystercatcher does not represent a monotypic genus. The current population estimate is very small, and the species has a limited range, but NZDOC has taken measures to recover and maintain the species, and the population appears to have stabilized. However, the species continues to face moderate threats, from predation, trampling, nest disturbance, storm surges, and habitat loss due to nonnative Marram grass, that are affecting nesting success and survival of the Chatham oystercatcher. These threats are ongoing and, thus, are imminent. The LPN remains an 8 to reflect imminent threats of moderate magnitude.

**Orange-fronted parakeet (*Cyanoramphus malherbi*)**—The orange-fronted parakeet was once well

distributed on the South Island of mainland New Zealand and a few offshore islands. It is now considered the rarest parakeet in New Zealand. The three remaining naturally occurring populations are all within a 30-km (18.6-mi) radius of one another in fragmented beech tree forests (*Nothofagus* spp.) of the upland valleys. Orange-fronted parakeets have also been captive-bred and released onto four predator-free islands where breeding has been confirmed.

The species' range contracted when its population was severely reduced in the late 1800s and early 1900s for unknown reasons. From 1999 to 2000, the mainland population crashed from perhaps 500 to 700 birds to a rough estimate of 100 to 200 birds as a result of ship rat (*Rattus rattus*) eruptions. Information on current population status is mixed. In 2013, the total population was estimated between 290 and 690 individuals (130 to 270 on the mainland, and 160 to 420 on the islands). More recently, there are indications that both the offshore and mainland populations have declined to around 100 and 250 birds, respectively, but these are rough estimates.

The most prominent factors affecting the species on the mainland are predation by nonnative mammals such as weasels and rats (*Rattus* spp.), as well as habitat destruction. Habitat loss and degradation has affected large areas of native forest on the mainland. In addition, silviculture (care and cultivation) of beech forests in the past had removed mature trees with nest cavities needed by the parakeet. The species' habitat is also degraded by introduced herbivores that alter forest structure in a way that reduces the available feeding habitat for the parakeet. Additionally, the parakeet competes with two other native parakeets for nest sites and food and with nonnative wasps and finches for food. Lastly, Psittacine beak and feather disease virus is a potential threat to this species. The disease was discovered in wild native birds in New Zealand in 2008 (e.g., the red-fronted parakeet, *Cyanoramphus novaezelandiae*), although it has not been documented in the orange-fronted parakeet. Infected birds generally follow one of three paths: They develop immunity, die within a couple of weeks, or become chronically infected. Chronic infections result in feather loss and deformities of beak and feathers.

In the October 17, 2016, CNOR, the orange-fronted parakeet was assigned an LPN of 8. After reevaluating the factors affecting the species, we have determined that no change in the LPN

is warranted because NZDOC is actively managing for the species. The orange-fronted parakeet does not represent a monotypic genus. Although the species' available suitable nesting habitat in beech forests is limited, there appears to have been some success with translocations to offshore islands, and translocations are continuing. The species faces threats (e.g., predation, habitat degradation, and competition for food and suitable nesting habitat) that are moderate in magnitude because the NZDOC continues to take measures to aid the recovery of the species. We find that the threats to this species are ongoing and imminent; thus, the LPN remains at 8 to reflect imminent threats of moderate magnitude.

Helmeted woodpecker (*Dryocopus galeatus*)—The helmeted woodpecker is a fairly small woodpecker native to regions of southern Brazil, eastern Paraguay, and northeastern Argentina. The helmeted woodpecker is non-migratory, occurring in subpopulations in suitable habitat within its range. Characteristic habitat is large tracts of well-preserved southern Atlantic Forest in both lowland and montane areas from sea level up to elevations of 1,000 m (3,280 ft). The species is believed to prefer mature (old-growth) trees in tropical and subtropical semi-deciduous forests as well as in mixed deciduous-coniferous forests.

The helmeted woodpecker is one of the rarest woodpeckers in the Americas. Its population is believed to have declined sharply between 1945 and 2000, in conjunction with the clearing of mature forest habitat, and is currently estimated at 400–8,900 individuals. Although forest clearing has recently slowed, and the species occurs in at least 17 protected areas throughout its range, habitat degradation continues and the population is still believed to be declining. The principal threat to the helmeted woodpecker is loss, degradation, and fragmentation of its Atlantic Forest habitat. Competition for nest cavities is also likely a limiting factor. The helmeted woodpecker is listed as endangered in Brazil and as vulnerable by the IUCN. It is not listed in any appendices of CITES.

In the October 17, 2016, CNOR, the helmeted woodpecker was assigned an LPN of 8. After reevaluating the available information, we find that no change in the LPN for the helmeted woodpecker is warranted. The helmeted woodpecker does not represent a monotypic genus. The magnitude of threats to the species is moderate because the species' range is fairly large. The threats are imminent because the forest habitat upon which the species

depends is still being altered and degraded. An LPN of 8 continues to be accurate for this species.

Okinawa woodpecker (*Dendrocopos noguchii*, syn. *Sapheopipo noguchii*)—The Okinawa woodpecker is a relatively large woodpecker found on Okinawa Island, Japan. The species prefers subtropical evergreen broadleaf forests that are undisturbed and mature. It currently occurs within the forested areas in the northern part of the island, generally in the Yambaru forest, and in some undisturbed forest in coastal areas. Most of the older forests that support the species are within the Jungle Warfare Training Center (formerly known as the Northern Training Area or Camp Gonsalves), part of the U.S. Marine Corps installation on Okinawa Island.

Deforestation in the Yambaru region has been cited as the main cause of the Okinawa woodpecker's reduced habitat and population. As of the mid 1990s, only 40 km<sup>2</sup> (15 mi<sup>2</sup>) of suitable habitat was available for this species. While most of the activities associated with habitat loss appear to have ceased, the Okinawa woodpecker still suffers from limited suitable habitat and a small population size. This situation makes it vulnerable to extinction from disease and natural disasters such as typhoons. In addition, the species is vulnerable to introduced predators such as feral dogs and cats, Javan mongoose (*Herpestes javanicus*), and weasels (*Mustela itatsi*).

In 2016, the Japanese Government designated Yambaru National Park and nominated "the northern part of Okinawa Island" (including Yambaru National Park) as a United Nations Educational, Scientific and Cultural Organization World Heritage Centre. The species is listed as critically endangered on the IUCN Red List. It is legally protected in Japan. It is not listed in any appendices of CITES and is not known to be in trade.

In the October 17, 2016, CNOR, the Okinawa woodpecker was assigned an LPN of 2. After reevaluating the available information, we find that no change in the LPN is warranted. The Okinawa woodpecker does not represent a monotypic genus. Threats to the species are high in magnitude due to the scarcity of its old-growth habitat. The population is very small and is believed to still be declining. Although new protected areas have been established that will likely benefit the Okinawa woodpecker, it is not yet clear that these areas will be fully protected from logging and other anthropogenic development, and from nonnative predators. Even though threats from logging have been reduced, it will take

many years for secondary and clear-cut forest habitat to mature such that it is suitable for the woodpecker. The threats to the species are ongoing, imminent, and high in magnitude due to its restricted range, small population size, past habitat loss, and endemism. The LPN for this species remains a 2 to reflect imminent threats of high magnitude.

**Yellow-browed toucanet** (*Aulacorhynchus huallagae*)—The yellow-browed toucanet has a small range on the eastern slope of the Andes of north-central Peru at elevations of 2,000–2,600 m (6,562–8,530 ft). The toucanet occurs in humid montane forests. The population status is not well known because of the inaccessibility of its habitat, but is estimated at 600–1,500 mature individuals. The species currently occupies three known locations within a small range. Habitat loss and destruction from deforestation for agriculture has been widespread in the region and is suspected to be the main threat, although deforestation appears to have occurred mainly below the altitudinal range of this toucanet. Gold mining and manufacturing also are common in the region. The yellow-browed toucanet is described as scarce wherever found, and ongoing population declines resulting from habitat loss are assumed. It is classified as endangered on the IUCN Red List and is not listed in any CITES appendices.

In the October 17, 2016, CNOR, the yellow-browed toucanet was assigned an LPN of 2. After reevaluating the available information, we find that no change in the LPN is warranted at this time. The yellow-browed toucanet does not represent a monotypic genus. The estimated population is small with just three known locations within a restricted range. The magnitude of threats to the habitat remains high, and its population is likely declining. The LPN remains a 2 to reflect imminent threats of high magnitude.

**Brasilia tapaculo** (*Scytalopus novacapitalis*)—The Brasilia tapaculo is a small, secretive, ground-dwelling bird with limited flight ability. The tapaculo is found in gallery-forest habitat that is a smaller habitat component occurring within the wider tropical savanna or “Cerrado” of the Central Goiás Plateau of Brazil. Gallery forests are narrow fringes of thick streamside vegetation that occur on the edges of rivers and streams at elevations of approximately 800–1,000 m (2,625–3,281 ft). The Brasilia tapaculo is described as “rare,” but the population size is unknown. Despite a lack of data on population trends, declines are suspected to be

occurring, due to the continued decline in area and quality of the tapaculo’s gallery forest habitat. Effects from climate change may also be negatively altering the Cerrado and the tapaculo’s specialized gallery forest habitat within the Cerrado by reducing the amount of available habitat for the species. Results from one climate change modeling study predicted that the Brasilia tapaculo could lose all its range and protected habitat by 2060. The species is currently known to occur in six protected areas and has been found on private land next to protected areas. These protected areas are limited in extent and size, with few larger than 25,000 hectares (ha) (61,776 acres (ac)). In the early 2000s, only 1.2 percent of the Cerrado was in protected areas; however, more recent estimates are 6.5 percent.

The primary threat to the species is ongoing loss, fragmentation, and degradation of its habitat, which is expected to limit the availability and extent of suitable habitat for the tapaculo. The Cerrado is the largest, most diverse, and possibly most threatened tropical savanna in the world. Land in the Cerrado is currently being converted for intensive grazing and mechanized agriculture, including soybean and rice plantations. The tapaculo’s gallery-forest habitat has been less affected by clearing for agriculture than the surrounding Cerrado. However, effects to gallery forest arise from wetland drainage and the diversion of water for irrigation and from annual burning of adjacent grasslands.

The IUCN recently changed the status of the species from near threatened to endangered, identifying the species’ small and fragmented range as justification for the change in status. The Brazilian Red List assessed the species as endangered, noting severe fragmentation and continuing decline in area and quality of habitat. It is not threatened by international trade and is not listed in any appendices of CITES.

In the October 17, 2016, CNOR, we assigned the Brasilia tapaculo an LPN of 8. After reevaluating the available information, we have determined that no change in the LPN is warranted at this time. The Brasilia tapaculo does not represent a monotypic genus. Threats to the species are moderate in magnitude and are imminent. The species has a fairly wide geographic range, but is endemic to the Cerrado and strongly associated with gallery forests, a very small component of the Cerrado. Conversion of the Cerrado is ongoing. The populations currently appear to be found only in or next to a handful of protected areas, and most of these areas

are small. The species is reported as rare, even in protected areas. Therefore, an LPN of 8 remains valid for this species.

**Ghizo white-eye** (*Zosterops luteirostris*)—The Ghizo white-eye is a small passerine (perching) bird described as “warbler-like.” It is endemic to the small island of Ghizo in the Solomon Islands in the South Pacific Ocean, east of Papua New Guinea. The total range of the Ghizo white-eye is estimated to be less than 35 km<sup>2</sup> (13.5 mi<sup>2</sup>), of which less than 1 km<sup>2</sup> (0.39 mi<sup>2</sup>) is the old-growth forest that the species seems to prefer.

Little information is available about this species and its habitat. It is locally common in old-growth forest patches and less common elsewhere. The species has been observed in a variety of habitats on the island, but it is unknown whether sustainable populations can exist outside of forested habitats. The population is estimated to be between 250 and 1,000 mature individuals and is suspected to be declining due to habitat degradation, particularly since a tsunami hit the island in 2007. Habitat loss appears to be the main threat. As of 2012, the human population on the island was 7,177 and growing rapidly, and there has been prolific growth in informal human settlements and temporary housing on Ghizo, which may be adversely affecting the Ghizo white-eye and its habitat. Areas around Ghizo Town, which previously supported the species, have been further degraded since the town was devastated by the 2007 tsunami, and habitat was found less likely able to support the species in 2012. The species is also affected by conversion of forested areas to agricultural uses. The old-growth forest on Ghizo is still under pressure from clearance for local use as timber and firewood, and for clearing for gardens, as are the areas of secondary growth, which are already suspected to be suboptimal habitat for this species.

The population of this species is believed to be declining and, given its fragmented habitat in combination with small population sizes, may be at greater risk of extinction due to synergistic effects. The IUCN Red List classifies this species as endangered. It is not listed in any appendices of CITES, and this species is not in international trade.

In the October 17, 2016, CNOR, the Ghizo white-eye was assigned an LPN of 2. After reevaluating the available information, we find that no change in the LPN is warranted. The Ghizo white-eye does not represent a monotypic genus. It faces threats that are high in magnitude due to declining suitable



habitat and its small, declining population size. The best information available indicates that forest clearing is occurring at a pace that is rapidly denuding its habitat; secondary-growth forest continues to be converted to agricultural purposes. Further, the human population on the small island is likely contributing to the reduction in old-growth forest for local uses such as timber and clearing for gardens. These threats to the species are ongoing, high in magnitude, and imminent. Thus, based on the best scientific and commercial data available, the LPN remains a 2 for this species.

**Black-backed tanager (*Tangara peruviana*)**—The black-backed tanager is endemic to the coastal Atlantic Forest region of southeastern Brazil. It is currently found in the coastal states of Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, and Rio Grande do Sul. The species is generally restricted to the sand-forest “restinga” habitat, which is a coastal component habitat of the greater Atlantic Forest complex. Restingas are herbaceous, shrubby, coastal sand-dune habitats. The black-backed tanager is primarily found in undisturbed vegetated habitat but has also been observed in secondary (or second-growth) forests. It has also been observed visiting gardens and orchards of houses close to forested areas. The black-backed tanager is one of just a few tanagers known to migrate seasonally. Within suitable habitat, the black-backed tanager is generally not considered rare. The population estimate is between 2,500 to 9,999 mature individuals. Populations currently appear to be small, fragmented, and declining.

The primary factor affecting this species is habitat loss and destruction due to urban expansion and beachfront development, and this type of development will continue in the future. Additional habitat loss from sea-level rise associated with global climate change may be compounded by an increased demand by humans to use remaining land for housing and infrastructure. In addition to the overall loss and degradation of its habitat, the remaining tracts of its habitat are severely fragmented. The black-backed tanager’s remaining suitable habitat in the areas of Rio de Janeiro and Paraná have largely been destroyed, and habitat loss and degradation will likely increase in the future. Although small portions of this species’ range occur in six protected areas, protections appear limited. The black-backed tanager is classified as vulnerable by the IUCN. The species is also listed as vulnerable in Brazil. It is not listed in any appendices of CITES

and especially during an extensive rodent eradication effort planned for this year. Project impact evaluations for the eradication effort determined that the currawong was at significant risk from secondary poisoning, and this action is expected to result in the temporary disruption of one breeding cycle. To ensure the currawong’s safety, project evaluators determined that approximately 50–60 percent of the wild population would need to be held in captive management during the eradication effort. A pilot study that housed wild currawongs in aviaries in anticipation of this eradication effort has shown promise for protecting the subspecies. Another potential threat to the currawong is rising global temperatures associated with climate change that may affect the cloud layer on the island’s mountaintops—resulting in drying of the forest where the currawong gets about half of its food and possibly creating a food shortage for the subspecies.

although it has infrequently been illegally sold in the pet trade.

In the October 17, 2016, CNOR, the black-backed tanager was assigned an LPN of 8. After reevaluating the available information, we have determined that no change in the LPN for this species is warranted at this time. The black-backed tanager does not represent a monotypic genus. We find that the threat from habitat loss is moderate in magnitude due to the species’ fairly large range, its existence in protected areas, and an indication of some flexibility in its diet and habitat suitability. Threats are imminent because the species is at risk due to ongoing and widespread loss of habitat due to beachfront and related development. Therefore, an LPN of 8 remains valid for this species.

**Lord Howe Island pied currawong (*Strepera graculina crissalis*)**—The Lord Howe Island pied currawong is a fairly large, crow-like bird, endemic to Lord Howe Island, New South Wales, Australia. Lord Howe Island is a small island northeast of Sydney, Australia, with 28 smaller islets and rocks. The Lord Howe Island pied currawong occurs throughout the island but is most numerous in the mountainous areas on the southern end. It has also been recorded to a limited extent on the Admiralty Islands, located 1 km (0.6 mi) north of Lord Howe Island. The Lord Howe Island pied currawong breeds in rainforests and palm forests, particularly along streams. Approximately 75 percent of Lord Howe Island, plus all outlying islets and rocks within the Lord Howe Island group, is protected under the Permanent Park Preserve, which has similar status to that of a national park.

The best current population estimate in 2005 and 2006 indicated that there were approximately 200 individuals. The Lord Howe Island pied currawong exists as a small, isolated population, which makes it vulnerable to stochastic events. The potential for the introduction of other nonnative predators to this island ecosystem has also been identified as an issue for this subspecies. In addition to its small population size, direct persecution (via shootings) by humans in retaliation for predation on domestic and endemic birds has been documented. The incidence of shootings has declined since the 1970s, when conservation efforts on Lord Howe Island began, but occasional shootings were still occurring as recently as 2006.

Because the Lord Howe Island currawong often preys on small rodents, it may be subject to nontarget poisoning during ongoing rat-baiting programs,

and especially during an extensive rodent eradication effort planned for this year. Project impact evaluations for the eradication effort determined that the currawong was at significant risk from secondary poisoning, and this action is expected to result in the temporary disruption of one breeding cycle. To ensure the currawong’s safety, project evaluators determined that approximately 50–60 percent of the wild population would need to be held in captive management during the eradication effort. A pilot study that housed wild currawongs in aviaries in anticipation of this eradication effort has shown promise for protecting the subspecies. Another potential threat to the currawong is rising global temperatures associated with climate change that may affect the cloud layer on the island’s mountaintops—resulting in drying of the forest where the currawong gets about half of its food and possibly creating a food shortage for the subspecies.

The subspecies’ status is not addressed by IUCN; however, based on IUCN criteria, it has been assessed as endangered nationally in Australia. In addition, the New South Wales Threatened Species Conservation Act of 1995 lists the Lord Howe Island pied currawong as vulnerable due to its extremely limited range and its small population size. It is not listed in any appendices of CITES, and trade is not an issue for this subspecies.

In the October 17, 2016, CNOR, the Lord Howe Island pied currawong was assigned an LPN of 6. After reevaluating the threats to the Lord Howe Island pied currawong, we have determined that no change in the LPN is warranted. The Lord Howe Island pied currawong does not represent a monotypic genus. It faces threats that are high in magnitude due to a combination of factors including its small population size and risks from nontarget poisoning from rodent control. Additionally, aspects of the rodent eradication project also carry some risk, including those associated with trapping, holding, and a missed breeding cycle. If the rodent eradication program is successful, effects from nontarget poisoning and any predation by rodents on currawong eggs will cease to be stressors for the currawong.

Despite conservation efforts, the population of the Lord Howe Island pied currawong has remained around 100 to 200 individuals, probably because of limited suitable nesting habitat. Species with small population sizes such as the Lord Howe Island currawong may be at greater risk of extinction due to synergistic effects of factors affecting this subspecies.

However, because significant conservation efforts for the currawong have been implemented, and the subspecies is being closely managed and monitored, we find that the threats are nonimminent. Thus, based on the best information available, the LPN remains at 6 to reflect nonimminent threats of high magnitude.

#### 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 in (38 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. The eastern population of the gopher tortoise in South Carolina, Florida, Georgia, and Alabama (east of the Mobile and Tombigbee Rivers) 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 fragmentation, destruction, and modification of its habitat (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, predation (mainly on nests and young tortoises), and inadequate regulatory mechanisms, specifically those needed to protect and enhance relocated tortoise populations in perpetuity. The magnitude of threats to the eastern range of the gopher tortoise is considered moderate to low, since populations extend over a broad geographic area and conservation measures are in place in some areas. However, since the species is currently being affected by a number of threats including destruction and modification of its habitat, disease, predation, exotics, and inadequate regulatory mechanisms,

the threat is imminent. Thus, we have assigned an LPN of 8 for this species.

#### 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 is known from only four sites in the lower Cape Fear River Basin in North Carolina. Although the complete historical range of the species is unknown, 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 are 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 and a lab at North Carolina State University's Veterinary School; the population at the North Carolina Wildlife Resources Commission's Watha State Fish Hatchery was recently lost.

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 and/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 two captive populations exist: A captive population of the species comprised of approximately 1,000+ adults and one with approximately 300+ adults. 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 this captive population could result in the near extinction of the species. The threats are high in magnitude and ongoing; therefore, we assign this species an LPN of 2.

#### Insects (Butterflies)

Harris' mimic swallowtail (*Mimoides lysithous harrisianus*)—Harris' mimic swallowtail is a subspecies that inhabits the restinga (sand forest) habitats within the coastal Atlantic Forest of Brazil. It historically occurred in southern Espirito Santo State and along the coast of the State of Rio de Janeiro, Brazil. Recent records indicated that there were just three sites occupied by the butterfly in the State of Rio de Janeiro; however, preliminary results from an ongoing study indicate that there are two newly discovered colonies within the City of Rio de Janeiro. Two areas are within protected National Parks, and the other sites appear to be under municipal conservation with uncertain protected status. These two new colonies in the City of Rio de Janeiro are located in small patches of vegetation and are possibly at risk of extirpation (disappearing from a specific geographic area within its range). The best-studied colony at Barra de São João has maintained a stable and viable size for nearly two decades; however, there is limited information on its status since 2004. We could not find recent population numbers for the subspecies in any of the other colonies.

Habitat destruction has been the main threat and is ongoing. Based on a number of estimates, 88 to 95 percent of the area historically covered by tropical forests within the Atlantic Forest biome has been converted or severely degraded as the result of human activities. In addition to the overall loss and degradation of its habitat, the remaining tracts of its habitat are severely fragmented. Fire, either wildfire or human-caused, is a stressor for Harris' mimic swallowtail due to its potential to

destroy the few remaining, occupied habitats. Sea-level rise may also affect this coastal subspecies, and habitat loss from sea-level rise may be compounded by an increased demand by humans to use remaining land for housing and infrastructure.

Another factor affecting this butterfly is collection. Although Harris' mimic swallowtail is categorized as endangered on the list of Brazilian fauna threatened with extinction, and collection and trade of the subspecies is prohibited, it has been offered for sale on the internet. Specimens of Harris' mimic swallowtail are routinely advertised online ranging from \$1,000 to \$2,200 U.S. dollars (USD), indicating that illegal collection and trade may be occurring and demand for this butterfly is high. Harris' mimic swallowtail is not currently on the IUCN Red list, although it was identified as a "threatened and extinct subspecies" in the family Papilionidae in the 1994 IUCN Red List. The subspecies has not been formally considered for listing in the appendices to CITES. It is also not regulated on the annexes to EU Wildlife Trade Regulations.

In the October 17, 2016, CNOR, Harris' mimic swallowtail was assigned an LPN of 3. After reevaluating the threats to this subspecies, we have determined that no change in the LPN is warranted. Harris' mimic swallowtail is a subspecies that is not within a monotypic genus. Threats are high in magnitude due to the existence of only a few small, fragmented colonies, and the potential for catastrophic events such as fire. Additionally, although the subspecies is protected by Brazilian law and several of the colonies are located within protected areas, the high price advertised online for specimens indicates that there is demand for the subspecies, likely from illegal collection. Because the population is very small and limited to approximately five known colonies, we find the threats are of high magnitude. Based on the best information available, the LPN remains a 3 to reflect imminent threats of high magnitude.

Fluminense swallowtail (*Parides ascanius*)—Like Harris' mimic swallowtail (above), the fluminense swallowtail also inhabits the restinga (sand forest) habitats of the coastal Atlantic Forest of Brazil within the State of Rio de Janeiro. There are at least eight confirmed subpopulations of fluminense swallowtail, and several other small, likely ephemeral, subpopulations are currently being studied (*i.e.*, 8–12 estimated subpopulations). Thus, the overall number of subpopulations reported for

the species has declined from "fewer than 20 colonies" in 1994, to 8 to 12 in 2017. The body of science on the species indicates a continual decline of subpopulations as well as a decrease in the numbers of individuals within each subpopulation. Genetic analysis of eight of the remaining subpopulations is consistent with metapopulation dynamics (a group of separate subpopulations that has some level of mixing) with low genetic diversity and trending towards increased isolation of these populations from urban development. The butterfly is described as seasonally common, with sightings of up to 50 individuals at one colony in a single morning. A study at Biological Reserve of Poço das Antas estimated that the subpopulation ranged from 10 to 50 individuals. We could not find estimates for butterfly numbers in the remaining subpopulations.

Habitat loss, degradation, and fragmentation are the principal threats to this species. The species occupies highly specialized habitat and requires large areas to maintain a viable colony. Based on a number of estimates, 88 to 95 percent of the area historically covered by tropical forests within the Atlantic Forest biome has been converted or severely degraded as a result of human activities. Habitat loss and destruction is caused primarily by road and building construction, drainage of swamps, and vegetation suppression, and the remaining tracts are severely fragmented. Fire, either wildfire or human-caused, is a stressor for the fluminense swallowtail and has the potential to destroy the few remaining, occupied habitats. This coastal butterfly may also be affected by habitat loss from sea-level rise, which may be compounded by human use of the remaining land for infrastructure and housing.

Only one of the subpopulations is presently found within a large protected area (Poço das Antas Biological Reserve), and the majority of the remaining populations are on smaller, fragmented parcels with limited or no protections and are vulnerable to extirpation.

Illegal collection of the fluminense swallowtail is likely occurring and ongoing. The species is located near urban areas and is easy to capture. Recently, multiple specimens of fluminense swallowtail have been advertised online with costs ranging from \$220 to \$700 USD. The impact of illegal collection to the fluminense swallowtail is difficult to assess, but removal of individuals from the remaining small, fragmented populations could, in combination with

other stressors, contribute to local extirpations.

The fluminense swallowtail butterfly was the first invertebrate to be officially noted on the list of Brazilian animals threatened with extinction in 1973. It has been classified as vulnerable by the IUCN Red List since 1983. The species is currently categorized by Brazil as endangered. It has not been formally considered for listing in the appendices to CITES. However, it is listed on Annex B of the EU Wildlife Trade Regulations; species listed on Annex B require a permit for import.

In the October 17, 2016, CNOR, the fluminense swallowtail was assigned an LPN of 2. After reevaluating the stressors to this species, we have determined that no change to the LPN is warranted. The fluminense swallowtail does not represent a monotypic genus. The overall number of subpopulations recorded for the species has declined from previous records of "fewer than 20 colonies" to approximately 8 to 12. Only one of these known subpopulations is presently found within a large protected area, and the majority of the remaining subpopulations are on small, fragmented parcels with limited or no protections and are vulnerable to extirpation. Despite the conservation measures in place, the species continues to face stressors (*e.g.*, habitat loss and destruction, and illegal collection and trade) that are high in magnitude. The threats are ongoing and, therefore, imminent. The LPN remains a 2 to reflect imminent threats of high magnitude.

Hahnel's Amazonian swallowtail (*Parides hahneli*)—Hahnel's Amazonian swallowtail is a large black and yellow butterfly endemic to Brazil. It is known from three remote locations along the tributaries of the middle and lower Amazon River basin in the states of Amazonas and Pará. Its preferred habitat is on old sand strips (stranded beaches) that are overgrown with dense scrub vegetation or forest. Hahnel's Amazonian swallowtail is described as very scarce and extremely localized in association with its specialized habitat and its larval host plant. Population size and trends are not known for this species. However, habitat alteration and destruction are ongoing in Pará and Amazonas where this species is found, and researchers are concerned that this destruction is taking place before the butterfly can be better studied and its ecological needs can be better understood.

In the 2015 Global Forest Resources Assessment of 234 countries and territories, Brazil reported the greatest

loss of primary forest from 1990 to 2015, and the states of Pará and Amazonas (where the butterfly is found) experienced high rates of deforestation in the last decade. Habitat loss and destruction are occurring (e.g., high rates of deforestation, dam construction, waterway crop transport, and clearing for agriculture and cattle grazing) and will likely continue in the future.

Collection (see Harris' mimic swallowtail discussion, above) is also a potential threat for Hahnel's Amazonian swallowtail. The species has been collected for commercial trade and may be reared for trade. Locations in the wild have been kept secret given the high value of this butterfly to collectors. Over the past 2 years, multiple specimens of Hahnel's Amazonian swallowtail were noted for sale or sold from locations in the United States for \$70 to \$500 USD and from Germany (approximately \$166 USD).

Hahnel's Amazonian swallowtail is classified as data deficient as of 2018 on the IUCN Red List. The species is listed as endangered on the State of Pará's list of threatened species, but it is not listed by the State of Amazonas or by Brazil. Hahnel's Amazonian swallowtail is not listed in any appendices of CITES. However, it is listed on Annex B of the EU Wildlife Trade Regulations; species listed on Annex B require a permit for import.

In the October 17, 2016, CNOR, the Hahnel's Amazonian swallowtail was assigned an LPN of 2. After reevaluating the threats to the Hahnel's Amazonian swallowtail, we have determined that no change in the LPN is warranted. This swallowtail does not represent a monotypic genus. It faces threats that are high in magnitude and imminence due to its small endemic population and limited and decreasing availability of its highly specialized habitat. Habitat alteration and destruction are ongoing in Pará and Amazonas where the butterfly is found and are likely to continue. These threats are high in magnitude due to the species' highly localized and specialized habitat requirements. Potential impacts from collection are unknown but could, in combination with other stressors, contribute to local extirpations. Based on a reevaluation of the threats, the LPN remains a 2 to reflect imminent threats of high magnitude.

Jamaican kite swallowtail (*Protographium marcellinus*, syn. *Eurytides marcellinus*)—The Jamaican kite swallowtail is a small blue-green and black butterfly and is regarded as Jamaica's most endangered butterfly. Breeding populations of the Jamaican kite swallowtail are found only where

there are dense stands of the host plant (*Oxandra lanceolata*), and these stands are rare. There is no known estimate of population size, but subpopulations are known from five sites. Two of the sites may be recently extirpated, one is thought to be tenuous, and two are viable with strong numbers in some years.

Habitat loss, degradation, and fragmentation are considered the primary factors affecting the Jamaican kite swallowtail. Historical habitat loss and destruction occurred when forests were cleared for agriculture and timber extraction. More recent habitat destruction is occurring primarily from sapling cutting for yam sticks, fish pots, or charcoal. Charcoal-making also carries the risk of fire, which destroys pupae in the leaf litter. Additionally, mining for limestone and bauxite also pose threats to remaining forested tracts.

The two strongest subpopulations of the Jamaican kite swallowtail occur in protected areas (i.e., the Portland Bight Protected Area and the Forest Reserve in the Cockpit Country), although habitat destruction within these areas continues to be a problem. Additionally, Jamaica's Forest Act of 1996 and Forest Regulations Act of 2001 have increased the power of Jamaican authorities to protect the species' habitat; the Jamaican kite swallowtail is included in Jamaica's National Strategy and Action Plan on Biological Diversity. This strategy established specific plans for protecting sites that support two subpopulations of the swallowtail. Although these projects were identified as high priorities, to date they have not been initiated due to funding and capacity constraints. Therefore, conservation management continues to be lacking for this species.

Although the Jamaican Wildlife Protection Act of 1994 carries steep fines and penalties, illegal collection of the Jamaican kite swallowtail appears to be occurring. Three specimens of the Jamaican kite swallowtail were noted for sale on the internet as recently as 2017, for as much as 100 Euros (\$120 USD), and one specimen sold in 2015 for 150 Euros (\$178 USD). Specimens of the Homerus swallowtail (*Papilio homerus*, another rare Jamaican butterfly) have also been illegally traded, indicating that there is a market for Jamaican butterflies despite heavy fines.

Predation from native predators, including spiders, the Jamaican tody (*Todus todus*), and praying mantis, may be adversely affecting the few remaining Jamaican kite swallowtail populations, especially in the smaller subpopulations. In years where large

numbers of spiders were observed, very few Jamaican kite swallowtail larvae survived. Additionally, this species may be at greater risk of extinction due to small fragmented subpopulations and synergistic effects of the factors noted above. Since 1985, the Jamaican kite swallowtail has been categorized on IUCN's Red List as vulnerable, but it is marked "needs updating." This species is not listed in any of the appendices of CITES or the EU Wildlife Trade Regulations, although some level of illegal trade is likely occurring.

In the October 17, 2016, CNOR, the Jamaican kite swallowtail was assigned an LPN of 2. After reevaluating the factors affecting the Jamaican kite swallowtail, we have determined that no change in LPN is warranted. The Jamaican kite swallowtail does not represent a monotypic genus. The Jamaican kite swallowtail is known from only five small subpopulations, and as few as two of these subpopulations may presently be viable. Although Jamaica has taken regulatory steps to preserve native swallowtail habitat, plans for conservation of vital areas for the butterfly have not been implemented. Based on our reevaluation of the threats to this species, the LPN remains a 2 to reflect imminent threats of high magnitude.

Kaiser-i-Hind swallowtail (*Teinopalpus imperialis*)—The Kaiser-i-Hind swallowtail is a large, ornate, green-black-and-orange butterfly native to the Himalayan regions of Bhutan, China, India, Laos, Myanmar, Nepal, Thailand, and Vietnam. The species occurs in the foothills of the Himalayan Mountains and other mountainous regions at altitudes of 1,500 to 3,050 m (4,921 to 10,000 ft) above sea level, in undisturbed (primary) broad-leaved evergreen forests or montane deciduous forests. Although it has a relatively large range, it is restricted to higher elevations and occurs only locally within this range. Adults fly up to open hilltops above the forests to mate, where males will often defend mating territories. Larval host-plants are limited to *Magnolia* and *Daphne* species, and in some regions the Kaiser-i-Hind swallowtail is strictly monophagous, only using a single species of *Magnolia* as a host plant. Despite the species' widespread distribution, populations are described as being very local and never abundant. Even early accounts of the species described it as being a very rare occurrence.

Habitat destruction is believed to negatively affect this species, which prefers undisturbed, high-altitude forests. In China and India, the Kaiser-i-Hind swallowtail populations are

affected by habitat modification and destruction due to commercial and illegal logging. In Nepal, the species is affected by habitat disturbance and destruction resulting from mining, wood collection for use as fuel, deforestation, collection of fodders and fiber plants, forest fires, invasion of bamboo species into the oak forests, agriculture, and grazing animals. In Vietnam, the forest habitat is reportedly declining. The Forest Ministry in Nepal considers habitat destruction to be a critical threat to all biodiversity, including the Kaiser-i-Hind swallowtail. Comprehensive information on the rate of degradation of Himalayan forests containing the Kaiser-i-Hind butterfly is not available, but habitat loss is consistently reported as one of the primary ongoing threats to the species there.

Collection for commercial trade is also regarded as a threat to the species. The Kaiser-i-Hind swallowtail is highly valued and has been collected and traded despite various prohibitions. Although it is difficult to assess the potential impacts from collection, it is possible that collection in combination with other stressors could contribute to local extirpations of small populations. Since 1996, the Kaiser-i-Hind swallowtail has been categorized on the IUCN Red List as “lower risk/near threatened,” but IUCN indicates that this assessment needs updating. The Kaiser-i-Hind swallowtail has been listed in CITES appendix II since 1987. Additionally, the Kaiser-i-Hind swallowtail is listed on annex B of the EU Wildlife Trade Regulations.

In the October 17, 2016, CNOR, the Kaiser-i-Hind swallowtail was assigned an LPN of 8. After reevaluating the threats to this species, we have determined that no change in its LPN of 8 is warranted. The Kaiser-i-Hind swallowtail does not represent a monotypic genus. Threats from habitat destruction and illegal collection are moderate in magnitude due to the species' wide distribution and to various protections in place within each country. We find that the threats are imminent due to ongoing habitat destruction and high market value for specimens. Based on our reassessment of the threats, we have retained an LPN of 8 to reflect imminent threats of moderate magnitude.

#### Candidates in Review

For several candidates, we continue to find that listing is warranted but precluded as of the date of publication of this notice. However, we are working on thorough reviews of all available data regarding these species and expect to publish either proposed listing rules or

12-month not-warranted findings prior to making the next annual resubmitted petition 12-month findings for these species. In the course of preparing proposed listing rules or not-warranted petition findings, we are continuing to monitor new information about these 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 any of these species. These species are the following: Peñasco least chipmunk (*Tamias minimus atristriatus*), Sierra Nevada red fox—Sierra Nevada DPS (*Vulpes vulpes necator*), red tree vole—north Oregon coast DPS (*Arborimus longicaudus*), Berry Cave salamander (*Gyrinophilus gulolineatus*), Texas fatmucket (*Lampsilis bracteata*), Texas fawnfoot (*Truncilla macrodon*), Texas pimpleback (*Quadrula petrina*), Hermes copper butterfly (*Lycaena hermes*), Puerto Rican harlequin butterfly (*Atlantea tulita*), rattlesnake-master borer moth (*Papaipema eryngii*), *Astragalus microcymbus* (skiff milkvetch), *Astragalus schmolliae* (Chapin Mesa milkvetch), *Cirsium wrightii* (Wright's marsh thistle), *Pinus albicaulis* (whitebark pine), *Solanum conocarpum* (marron bacora), and *Streptanthus bracteatus* (bracted twistflower).

#### Petitions To Reclassify Species Already Listed

We previously made warranted-but-precluded findings on four petitions seeking to reclassify threatened species to endangered status. The taxa involved in the reclassification petitions are two populations 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 two grizzly bear ecosystem populations, 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 populations, 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. Also, 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 January 13, 2017, in partnership with the National Park Service, we made available for public comment a draft North Cascades Ecosystem Grizzly Bear Restoration Plan (plan) and draft environmental impact statement (EIS) to determine how to restore the grizzly bear to the North Cascades ecosystem (82 FR 4416). The comment period on this draft plan and EIS closed on March 14, 2017 and reopened again on August 2, 2019. The final restoration plan and EIS are expected to take up to 2 years to complete as we evaluate a variety of alternatives, including population restoration. This ecosystem does not contain a verified population (only three confirmed observations of individuals in the last 20 years), and is isolated from

other populations in British Columbia and the United States.

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 human-caused mortality due to incomplete habitat protection measures (motorized-access management), very small population size, and population fragmentation resulting in genetic isolation. However, we acknowledge the possibility that there is no longer a population present in the ecosystem. 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 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, as species currently listed as threatened are already afforded protection under the ESA and its implementing regulations.

Grizzly bear (*Ursus arctos horribilis*), Cabinet-Yaak ecosystem population (Region 6)—Since 1992, we have received and reviewed six petitions requesting a change in status for the Cabinet-Yaak grizzly bear population (57 FR 14372, April 20, 1992; 58 FR 8250, February 12, 1993; 58 FR 43856, August 18, 1993; 63 FR 30453, June 4, 1998; 64 FR 26725, May 17, 1999; 81 FR 1368, January 12, 2016). In response to these petitions, in an August 29, 2011, 5-year status review, we determined that grizzly bears in the Cabinet-Yaak ecosystem warranted a change to endangered status. However, in the 2014 CNOR (79 FR 72450; December 5, 2014), we determined that threatened status was appropriate and that uplisting to endangered status was no longer warranted. This decision was challenged in court (*Alliance for the Wild Rockies v. Ryan Zinke et al.* (Case No. 9:16-cv-00021-DLC)), and on August 22, 2017, the court ruled against the Service. The court reinstated the previous finding that uplisting the Cabinet-Yaak ecosystem population of grizzly bears was warranted but precluded, with an LPN of 3 for the uplisting based on high-magnitude

threats that are ongoing, thus imminent, and, therefore, we are reevaluating its status. 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, as species currently listed as threatened are already afforded protection under the ESA and its implementing regulations.

Delta smelt (*Hypomesus transpacificus*) (Region 8)—The following summary is based on information contained in our files and the April 7, 2010, 12-month finding published in the **Federal Register** (75 FR 17667); see that 12-month finding for additional information on why reclassification to endangered is warranted but precluded. In our 12-month finding, we determined that a change in status of the delta smelt from threatened to endangered was warranted, although precluded by other high priority listings. The primary rationale for reclassifying delta smelt from threatened to endangered was the significant declines in species abundance that have occurred since 2001. Delta smelt abundance, as indicated by the Fall Mid-Water Trawl survey, was exceptionally low between 2004 and 2010, increased during the wet year of 2011, and decreased again to very low levels at present.

The primary threats to the delta smelt are direct entrainments by State and Federal water export facilities, summer and fall increases in salinity and water clarity resulting from decreases in freshwater flow into the estuary, and effects from introduced species. Ammonia in the form of ammonium may also be a significant threat to the survival of the delta smelt. Additional potential threats are predation by striped and largemouth bass and inland silversides, contaminants, and small population size. Existing regulatory mechanisms have not proven adequate to halt the decline of delta smelt since 1993, when we listed the delta smelt as a threatened species (58 FR 12854; March 5, 1993).

As a result of our analysis of the best scientific and commercial data available, we have retained the recommendation of uplisting the delta smelt to an endangered species. We have assigned an LPN of 2, based on the high magnitude and high imminence of

threats faced by the species. The magnitude of the threats is high because the threats occur rangewide and result in mortality or significantly reduce the reproductive capacity of the species. Threats are imminent because they are ongoing and, in some cases (*e.g.*, nonnative species), considered irreversible. Thus, we are maintaining an LPN of 2 for this species.

*Sclerocactus brevispinus* (Pariette cactus) (Region 6)—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.

We continue to find that reclassification of this species to endangered is warranted but precluded as of the date of publication of this notice. (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.) However, we are working on a thorough review of all available data and expect to publish a 5-year status review and draft recovery plan prior to making the

next annual resubmitted petition 12-month finding. In the course of preparing a 5-year status review and draft recovery plan, we are continuing to monitor new information about this species' status.

### Current Notice of Review

We gather data on plants and animals native and foreign to the United States that appear to merit consideration for addition to the Lists of Endangered and Threatened Wildlife and Plants (Lists). This notice 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, below, 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. 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 consider 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. Our analysis for this notice included making 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, above, 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 regarding domestic species (see addresses under Request for Information, below). For species foreign to the United States, you should direct information, comments, or questions to the office of the Chief, Branch of Delisting and Foreign Species (see **FOR FURTHER INFORMATION CONTACT**).

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 CNORs (published December 2, 2016, at 81 FR 87246 for domestic species and October 17, 2016, at 81 FR 71457 for foreign species) that are no longer proposed species or candidates for listing. Since December 2, 2016, for domestic species and October 17, 2016, for foreign species, we listed 17 species, withdrew 4 species from proposed status, and removed 8 species from the candidate list by making not-warranted findings or withdrawing proposed rules. 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.

SAT—Species we listed as threatened due to similarity of appearance.

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 species or proposed for listing, 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 for domestic species that we should designate as critical habitat, or indicating that designation of critical habitat would not be prudent;
- (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.

We will 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).

For domestic species, 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:

*Pacific Northwest.* 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).

*Southwest.* 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).

*Midwest.* 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).

*Southeast.* 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).

*Northeast.* 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).

*Mountain-Prairie.* 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).

*Alaska.* Alaska. Regional Director (TE), U.S. Fish and Wildlife Service,

1011 East Tudor Road, Anchorage, AK 99503–6199 (907/786–3505).

*Pacific Southwest.* California and Nevada. Regional Director (TE), U.S. Fish and Wildlife Service, 2800 Cottage Way, Suite W2606, Sacramento, CA 95825 (916/414–6464).

We will provide information we receive to the Region having lead responsibility for each candidate species mentioned in the submission, and information and comments we receive will become part of the administrative record for the species, which we maintain at the appropriate Regional Office.

For species foreign to the United States, submit information, materials, or comments regarding a particular species to the office of the Chief, Branch of Delisting and Foreign Species (see **FOR FURTHER INFORMATION CONTACT**).

**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: September 24, 2019.

**Margaret E. Everson,**

*Principal Deputy Director, U.S. Fish and Wildlife Service, Exercising the Authority of the Director, U.S. 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        | Southwest .....     | <i>Tamias minimus atristriatus</i> ....           | Sciuridae .....  | Chipmunk, Peñasco least .....                    | U.S.A. (NM).                             |
| PT .....       | .....    | Pacific South-west. | <i>Pekania pennanti</i> .....                     | Mustelidae ..... | Fisher (West Coast DPS) .....                    | U.S.A (CA, OR, WA).                      |
| C* .....       | 3        | Pacific South-west. | <i>Vulpes vulpes necator</i> .....                | Canidae .....    | Fox, Sierra Nevada red (Sierra Nevada DPS).      | U.S.A. (CA, OR).                         |
| PT .....       | .....    | Pacific South-west. | <i>Martes caurina</i> ssp. <i>humboldtensis</i> . | Mustelidae ..... | Marten, Humboldt .....                           | U.S.A. (CA).                             |
| C* .....       | 9        | Pacific .....       | <i>Arborimus longicaudus</i> .....                | Cricetidae ..... | Vole, red tree (north Oregon coast DPS).         | U.S.A. (OR).                             |
| PT .....       | 6        | Mountain-Prairie    | <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>   |          |                     |   |                  |  |  |
| C* .....       | 2        | .....               | <i>Pauxi koepckeae</i> .....                      | Cracidae .....   | Curassow, Sira .....                             | Peru.                                    |
| C* .....       | 2        | .....               | <i>Pauxi unicornis</i> .....                      | Cracidae .....   | Curassow, southern helmeted                      | Bolivia.                                 |

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 |                     |  |                  |   |  |
| C*                | 6        |                     | <i>Strepera graculina crissalis</i>  | Cracticidae      | Currawong, Lord Howe Island pied.             | Lord Howe Island, New South Wales.   |
| C*                | 8        |                     | <i>Haematopus chathamensis</i>   | Haematopodidae   | Oystercatcher, Chatham                        | Chatham Islands, New Zealand.  |
| C*                | 8        |                     | <i>Cyanoramphus malherbi</i>   | Psitidae         | Parakeet, orange-fronted                      | New Zealand.   |
| PT                |          | Southeast           | <i>Pterodroma hasitata</i>   | Procellariidae   | Petrel, black-capped                          | U.S.A. (GA, NC, SC).   |
| C*                | 2        |                     | <i>Rallus semiplumbeus</i>   | Rallidae         | Rail, Bogotá                                  | Colombia.  |
| PT                |          | Southeast           | <i>Laterallus jamaicensis</i> ssp. <i>jamaicensis</i> .  | Rallidae         | Rail, eastern black                           | U.S.A. (AL, AK, CO, CT, DE, FL, GA, IL, IN, IA, KN, KT, LA, MD, MA, MI, MN, MS, MO, NE, NH, NJ, NM, NY, NC, OH, OK, PA, PR, RI, SC, TN, TX, VT, VA, VI, WV, WI). |
| PT                |          | Pacific South-west. | <i>Centrocercus urophasianus</i>   | Phasianidae      | Sage-Grouse, Greater (Bi-State DPS).          | U.S.A (CA, NV).  |
| C*                | 8        |                     | <i>Porphyrio hochstetteri</i>  | Rallidae         | Takahe  | New Zealand.   |
| C*                | 8        |                     | <i>Tangara peruviana</i>   | Thraupidae       | Tanager, black-backed                         | Brazil.  |
| C*                | 8        |                     | <i>Scytalopus novacapitalis</i>  | Rhinocryptidae   | Tapaculo, Brasilia                            | Brazil.  |
| C*                | 2        |                     | <i>Aulacorhynchus huallagae</i>  | Ramphastidae     | Toucanet, yellow-browed                       | Peru.  |
| C*                | 2        |                     | <i>Zosterops luteostris</i>  | Zosteropidae     | White-eye, Ghizo                              | Solomon Islands.   |
| C*                | 8        |                     | <i>Dryocopus galeatus</i>  | Picidae          | Woodpecker, helmeted                          | Argentina, Brazil, Paraguay.   |
| C*                | 2        |                     | <i>Dendrocopos noguchii</i>  | Picidae          | Woodpecker, Okinawa                           | Okinawa Island, Japan.   |
| <b>Reptiles</b>   |          |                     |  |                  |   |  |
| C*                | 8        | Southeast           | <i>Gopherus polyphemus</i>   | Testudinidae     | Tortoise, gopher (eastern population).        | U.S.A. (AL, FL, GA, LA, MS, SC).   |
| <b>Amphibians</b> |          |                     |  |                  |   |  |
| PE                |          | Midwest             | <i>Cryptobranchus alleganiensis alleganiensis</i> .  | Cryptobranchidae | Hellbender, eastern (Missouri DPS).           | U.S.A. (MO).   |
| C*                | 8        | Southeast           | <i>Gyrinophilus gulolineatus</i>   | Plethodontidae   | Salamander, Berry Cave                        | U.S.A. (TN).   |
| PT                |          | Southeast           | <i>Necturus lewisi</i>   | Proteidae        | Waterdog, Neuse River                         | U.S.A. (NC).   |
| <b>Fishes</b>     |          |                     |  |                  |   |  |
| PE                |          | Southeast           | <i>Noturus furiosus</i>  | Ictaluridae      | Madtom, Carolina                              | U.S.A. (NC).   |
| C*                | 6        | Pacific South-west. | <i>Spirinchus thaleichthys</i>   | Osmeridae        | Smelt, longfin (San Francisco Bay-Delta DPS). | U.S.A. (AK, CA, OR, WA), Canada.   |
| PE                | N/A      |                     | <i>Acipenser dabryanus</i>   | Acipenseridae    | Sturgeon, Yangtze                             | China.   |
| PE                |          | Southeast           | <i>Fundulus julisia</i>  | Fundulidae       | Topminnow, Barrens                            | U.S.A. (TN).   |
| PSAT              | N/A      | Pacific             | <i>Salvelinus malma</i>  | Salmonidae       | Trout, Dolly Varden                           | U.S.A. (AK, WA), Canada, East Asia.  |
| <b>Clams</b>      |          |                     |  |                  |   |  |
| C*                | 8        |                     | <i>Mulinia modesta</i>   | Mactridae        | Clam, Colorado delta                          | Mexico.  |
| C*                | 2        | Southwest           | <i>Lampsilis bracteata</i>   | Unionidae        | Fatmucket, Texas                              | U.S.A. (TX).   |
| C*                | 2        | Southwest           | <i>Truncilla macrodon</i>  | Unionidae        | Fawnsfoot, Texas                              | U.S.A. (TX).   |
| PT                |          | Southeast           | <i>Fusconaia masoni</i>  | Unionidae        | Pigtoe, Atlantic                              | U.S.A. (GA, NC, VA).   |
| C*                | 2        | Southwest           | <i>Quadrula petrina</i>  | Unionidae        | Pimpleback, Texas                             | U.S.A. (TX).   |
| <b>Snails</b>     |          |                     |  |                  |   |  |
| C*                | 2        | Southeast           | <i>Planorbella magnifica</i>   | Planorbidae      | Ramshorn, magnificent                         | U.S.A. (NC).   |
| <b>Insects</b>    |          |                     |  |                  |   |  |
| C*                | 5        | Pacific South-west. | <i>Lycaena hermes</i>  | Lycaenidae       | Butterfly, Hermes copper                      | U.S.A. (CA).   |
| PE                | 3        |                     | <i>Euchloe ausonides insularis</i>   | Pieridae         | Butterfly, Island marble                      | U.S.A. (WA).   |
| C*                | 2        | Southeast           | <i>Atlantea tulita</i>   | Nymphalidae      | Butterfly, Puerto Rican harlequin.            | U.S.A. (PR).   |
| C*                | 8        | Midwest             | <i>Papaipema eryngii</i>   | Noctuidae        | Moth, rattlesnake-master borer                | U.S.A. (AR, IL, KY, NC, OK).   |
| PT                | 5        | Mountain-Prairie    | <i>Lednia tumana</i>   | Nemouridae       | Stonefly, meltwater lednian                   | U.S.A. (MT).   |
| PT                |          | Mountain-Prairie    | <i>Zapada glacier</i>  | Nemouridae       | Stonefly, western glacier                     | U.S.A. (MT).   |
| C*                | 2        |                     | <i>Parides ascanius</i>  | Papilionidae     | Swallowtail, fluminense                       | Brazil.  |
| C*                | 2        |                     | <i>Parides hahneli</i>   | Papilionidae     | Swallowtail, Hahnel's Amazonian.              | Brazil.  |
| C*                | 3        |                     | <i>Mimoides</i> (= <i>Eurytides</i> or <i>Graphium</i> ) <i>lysithous harrisianus</i> .                                | Papilionidae     | Swallowtail, Harris' mimic                    | Brazil.  |
| C*                | 2        |                     | <i>Protographium</i> (= <i>Eurytides</i> or <i>Graphium</i> or <i>Neographium</i> or <i>Protesilaus) marcellinus</i> . | Papilionidae     | Swallowtail, Jamaican kite                    | Jamaica.   |

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 |                  |                                |              |                            |  |
| C*                      | 8        |                  | <i>Teinopalpus imperialis</i>  | Papilionidae | Swallowtail, Kaiser-i-Hind | Bhutan, China, India, Laos, Myanmar, Nepal, Thailand, Vietnam. |
| <b>Crustaceans</b>      |          |                  |                                |              |                            |  |
| PT                      |          | Southeast        | <i>Procambarus econfinae</i>   | Cambaridae   | Crayfish, Panama City      | U.S.A. (FL).   |
| PT                      |          | Southeast        | <i>Cambarus cracens</i>        | Cambaridae   | Crayfish, slenderclaw      | U.S.A. (AL).   |
| <b>Flowering Plants</b> |          |                  |                                |              |                            |  |
| C*                      | 8        | Mountain-Prairie | <i>Astragalus microcymbus</i>  | Fabaceae     | Milkvetch, skiff           | U.S.A. (CO).   |
| C*                      | 8        | Mountain-Prairie | <i>Astragalus schmolliae</i>   | Fabaceae     | Milkvetch, Chapin Mesa     | U.S.A. (CO).   |
| C*                      | 8        | Southwest        | <i>Cirsium wrightii</i>        | Asteraceae   | Thistle, Wright's marsh    | U.S.A. (AZ, NM), Mexico.                                       |
| C*                      | 8        | Mountain-Prairie | <i>Pinus albicaulis</i>        | Pinaceae     | Pine, whitebark            | U.S.A. (CA, ID, MT, NV, OR, WA, WY), Canada (AB, BC).          |
| C*                      | 2        | Southeast        | <i>Solanum conocarpum</i>      | Solanaceae   | Bacora, marron             | U.S.A. (PR).   |
| C*                      | 8        | Southwest        | <i>Streptanthus bracteatus</i> | Brassicaceae | Twistflower, bracted       | U.S.A. (TX).   |

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>    |       |             |   |               |   |   |
| Rc                | A     | Alaska      | <i>Odobenus rosmarus divergens</i>          | Odobenidae    | Walrus, Pacific                                   | U.S.A. (AK), Russia.  |
| <b>Birds</b>      |       |             |   |               |   |   |
| T                 | L     | Pacific     | <i>Drepanis coccinea</i>                    | Fringillidae  | Iiwi (honeycreeper)                               | U.S.A. (HI).  |
| E                 | L     |             | <i>Ara macao ssp. cyanopterus</i>           | Psittacidae   | Macaw, scarlet                                    | Belize, Costa Rica, Guatemala, Honduras, Mexico, Nicaragua, Panama.                   |
| T                 | L     |             | <i>Ara macao ssp. macao</i>                 | Psittacidae   | Macaw, scarlet (northern DPS)                     | Colombia, Costa Rica, Panama.   |
| SAT               | L     |             | <i>Ara macao ssp. macao</i>                 | Psittacidae   | Macaw, scarlet (southern DPS).                    | Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, Venezuela. |
| Rc                | A     |             | <i>Eunymphicus uvaensis</i>                 | Psittacidae   | Parakeet, Uvea                                    | Uvea, New Caledonia.  |
| Rc                | A     | Southwest   | <i>Amazona viridigenalis</i>                | Psittacidae   | Parrot, red-crowned                               | U.S.A. (TX), Mexico.  |
| <b>Reptiles</b>   |       |             |   |               |   |   |
| T                 | L     | Midwest     | <i>Sistrurus catenatus</i>                  | Viperidae     | Massasauga (= rattlesnake), eastern.              | U.S.A. (IA, IL, IN, MI, MN, MO, NY, OH, PA, WI), Canada.                              |
| E                 | L     | Southwest   | <i>Kinosternon sonoriense longifemorale</i> | Kinosternidae | Turtle, Sonoyta mud                               | U.S.A. (AZ), Mexico.  |
| <b>Amphibians</b> |       |             |   |               |   |   |
| Rc                | A     | Southeast   | <i>Notophthalmus perstriatus</i>            | Salamandridae | Newt, striped                                     | U.S.A. (FL, GA).  |
| E                 | L     | Southeast   | <i>Necturus alabamensis</i>                 | Proteidae     | Waterdog, black warrior (= Sipse Fork).           | U.S.A. (AL).  |
| <b>Fishes</b>     |       |             |   |               |   |   |
| Rp                | N     | Southwest   | <i>Gila nigra</i>                           | Cyprinidae    | Chub, headwater                                   | U.S.A. (AZ, NM).  |
| Rp                | N     | Southwest   | <i>Gila robusta</i>                         | Cyprinidae    | Chub, roundtail (Lower Colorado River Basin DPS). | U.S.A. (AZ, CO, NM, UT, WY).  |
| E                 | L     | Northeast   | <i>Crystallaria cincotta</i>                | Percidae      | Darter, diamond                                   | U.S.A. (KY, OH, TN, WV).  |
| T                 | L     | Southeast   | <i>Percina aurora</i>                       | Percidae      | Darter, pearl                                     | U.S.A. (LA, MS).  |
| <b>Clams</b>      |       |             |   |               |   |   |
| E                 | L     | Southwest   | <i>Popenaias popei</i>                      | Unionidae     | Hornshell, Texas                                  | U.S.A. (NM, TX), Mexico.  |
| Rc                | N     | Southwest   | <i>Quadrula aurea</i>                       | Unionidae     | Orb, golden                                       | U.S.A. (TX).  |
| Rc                | N     | Southwest   | <i>Quadrula houstonensis</i>                | Unionidae     | Pimpleback, smooth                                | U.S.A. (TX).  |

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. |                    |  |                     |                                     |  |
| <b>Insects</b>          |       |                    |  |                     |                                     |  |
| E .....                 | L     | Midwest .....      | <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). |
| Rc .....                | N     | Mountain-Prairie   | <i>Arsapnia</i> (= <i>Capnia</i> ) <i>arapahoe</i>           | Capniidae .....     | Snowfly, Arapahoe .....             | U.S.A. (CO).   |
| <b>Crustaceans</b>      |       |                    |  |                     |                                     |  |
| Rp .....                | I     | Northeast .....    | <i>Stygobromus kenki</i> .....                               | Crangonyctidae ...  | Amphipod, Ken's .....               | U.S.A. (DC, MD, VA).   |
| <b>Flowering Plants</b> |       |                    |  |                     |                                     |  |
| Rc .....                | A     | Mountain-Prairie   | <i>Boechea</i> (= <i>Arabis</i> ) <i>pusilla</i> ...         | Brassicaceae .....  | Rockcress, Fremont County or small. | U.S.A. (WY).   |
| T .....                 | L     | Southeast .....    | <i>Chamaesyce deltoidea pinetorum</i> .                      | Euphorbiaceae ..... | Sandmat, pineland .....             | U.S.A. (FL).   |
| Rp .....                | A     | Pacific Southwest. | <i>Chorizanthe parryi</i> var. <i>fernandina</i> .           | Polygonaceae .....  | Spineflower, San Fernando Valley.   | U.S.A. (CA).   |
| E .....                 | L     | Southeast .....    | <i>Dalea carthagenensis</i> var. <i>floridana</i> .          | Fabaceae .....      | Prairie-clover, Florida .....       | U.S.A. (FL).   |
| T .....                 | L     | Southeast .....    | <i>Digitaria pauciflora</i> .....                            | Poaceae .....       | Crabgrass, Florida pineland ...     | U.S.A. (FL).   |
| Rc .....                | A     | Mountain-Prairie   | <i>Eriogonum soredium</i> .....                              | Polygonaceae .....  | Buckwheat, Frisco .....             | U.S.A. (UT).   |
| E .....                 | L     | Southwest .....    | <i>Festuca ligulata</i> .....                                | Poaceae .....       | Fescue, Guadalupe .....             | U.S.A. (TX), Mexico.   |
| Rc .....                | A     | Mountain-Prairie   | <i>Lepidium ostleri</i> .....                                | Brassicaceae .....  | Peppergrass, Ostler's .....         | U.S.A. (UT).   |
| E .....                 | L     | Pacific .....      | <i>Sicyos macrophyllus</i> .....                             | Cucurbitaceae ..... | Anunu .....                         | U.S.A. (HI).   |
| T .....                 | L     | Southeast .....    | <i>Sideroxylon reclinatum</i> ssp. <i>austrofloridense</i> . | Sapotaceae .....    | Bully, Everglades .....             | U.S.A. (FL).   |
| Rc .....                | A     | Mountain-Prairie   | <i>Trifolium friscanum</i> .....                             | Fabaceae .....      | Clover, Frisco .....                | U.S.A. (UT).   |

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