DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[FWS-R9-ES-2008-0115; MO-9221050083 B2]

Endangered and Threatened Wildlife and Plants; Review of Native Species That Are Candidates for Listing as Endangered or Threatened; Annual Notice 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 native to the United States that we regard as candidates for or have proposed for addition to the Lists of Endangered and Threatened Wildlife and Plants under the Endangered Species Act of 1973, as amended. Identification of candidate species can assist environmental planning efforts by providing advance notice of potential listings, 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 candidate conservation measures to alleviate threats to the species.

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

Overall, this CNOR recognizes 1 new candidate, changes the LPN for 11 candidates, and removes 2 species from candidate status. Combined with other decisions for individual species that were published separately from this CNOR in the past year, the current number of species that are candidates for listing is 251.

This document also includes our findings on resubmitted petitions and describes our progress in revising the Lists of Endangered and Threatened Wildlife and Plants during the period September 30, 2007, through September 30, 2008.

We request additional status information that may be available for the 251

candidate species identified in this CNOR.

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

ADDRESSES:
This notice is available on the Internet at http://www.regulations.gov, and http://endangered.fws.gov/candidates/index.html. Species assessment forms with information and references on a particular candidate species' range, status, habitat needs, and listing priority assignment are available for review at the appropriate Regional Office listed below in SUPPLEMENTARY INFORMATION or at the Branch of Candidate Conservation, Arlington, VA (see address below), or on our Internet website (http://endangered.fws.gov/candidates/index.html). Please submit any new information materials, comments, or questions of a general nature on this notice to the Arlington, VA, address listed below. 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.

FOR FURTHER INFORMATION CONTACT:
The Endangered Species Coordinator(s) in the appropriate Regional Office(s) or Chief, Branch of Candidate Conservation, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Room 420, Arlington, VA 22203 (telephone 703-358-2105; facsimile 703-358-1735). Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:
Information Solicited

We request additional status information that may be available for any of the candidate species identified in this CNOR. We will consider this information in preparing listing documents and future revisions to the notice of review, as it will help us in monitoring changes in the status of candidate species and in management for conserving them. We also request information on additional species to consider including as candidates as we prepare future updates of this notice.

You may submit your information concerning this notice in general or for any of the species included in this notice by one of the methods listed in the ADDRESSES section.

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 in SUPPLEMENTARY INFORMATION. General information we receive will be available at the Branch of Candidate Conservation, Arlington, VA (see address above).

Candidate Notice of Review

Background

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act), requires that we identify species of wildlife and plants that are endangered or

threatened, based on the best available scientific and commercial information. As defined in section 3 of the Act, an endangered species is any species which is in danger of extinction throughout all or a significant portion of its range, and a threatened species is any species which 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 to list as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher-priority listing actions. A species may be indentified by us as a candidate for listing based on an evaluation of its status that we conducted on our own initiative, or as a result of making a finding on a petition to list a species that listing is warranted but precluded by other higher priority listing action (see the Petition Findings section, below).

We maintain this list of candidates for a variety of reasons: to notify the public that these species are facing threats to their survival; to provide advance knowledge of potential listings that could affect decisions of environmental planners and developers; to provide information that may stimulate and guide conservation efforts that will remove or reduce threats to these species and possibly make listing unnecessary; to solicit input from interested parties to help us identify those candidate species that may not require protection under the Act or additional species that may require the Act's protections; and to solicit necessary information for setting priorities for preparing listing proposals. We strongly encourage collaborative conservation efforts for candidate species and offer technical and financial assistance to facilitate such efforts. For additional information regarding such assistance, please contact the appropriate Regional Office listed in SUPPLEMENTARY INFORMATION or visit our Internet website, http://endangered.fws.gov/candidates/index.html.

Previous Notices of Review

We have been publishing candidate notices of review (CNOR) since 1975. The most recent CNOR (prior to this CNOR) was published on December 6, 2007 (72 FR 69033). CNORs published since 1994 are available on our Internet website, http://www.fws.gov/endangered/candidates/index.html. For copies of CNORs published prior to 1994, please contact the Branch of Candidate Conservation (see ADDRESSES section 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). Such a priority ranking guidance system is required under section 4(h)(3) of the Act (15 U.S.C. 1533(h)(3)). As explained below, in using this system we first categorize based on the magnitude of the threat(s), then by the immediacy of the threat(s), and finally by taxonomic status.

Under this priority ranking system, magnitude of threat can be either high or moderate to low. This criterion helps ensure that the species facing the greatest threats to their continued existence receive the highest listing

priority. It is important to recognize that all candidate species face threats to their continued existence, so the magnitude of threats is in relative terms. When evaluating the magnitude of the threat(s) facing the species, we consider information such as: the number of populations and/or extent of range of the species affected by the threat(s); the biological significance of the affected population(s), taking into consideration the life history characteristics of the species and its current abundance and distribution; 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; and whether the effects are likely to be permanent.

As used in our priority ranking system, immediacy of threat is categorized as either imminent or nonimminent and is not a measure of how quickly the species is likely to become extinct if the threats are not addressed; rather, immediacy 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 those 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 a genus that has more than one species); and subspecies, distinct population segments of vertebrate species, and species for which listing is appropriate in a significant portion of their range rather than their entire range.

The result of the ranking system is that we assign each candidate a listing priority number of 1 to 12. For example, if the threat(s) is 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 (e.g., a species that is the only member of a genus would be assigned to the LPN 1 category, a full species to LPN 2, and a subspecies, DPS, or a species for which listing is appropriate in a significant portion of its range 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 sufficient information to prepare a proposed rule to list it 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 guidance is available on our website at: http://www.fws.gov/endangered/policy/index.html. For more information on the LPN assigned to a particular species, the species assessment for each candidate contains the LPN chart and a rationale for the determination of the magnitude and imminence of threat(s) and assignment of the LPN; that information is summarized in this CNOR.

This revised notice supersedes all previous animal, plant, and combined candidate notices of review.

Summary of This CNOR

Since publication of the CNOR on December 6, 2007 (72 FR 69033), 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 high 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 first.

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

Based on our review of the best available scientific and commercial information, with this CNOR we identify 1 new candidate species (see New Candidates , below), change the LPN for 11 candidates (see Listing Priority Changes in Candidates, below) and determine that listing proposals are not warranted for 2 species and thus remove them from candidate status (see Candidate Removals, below). Combined with the other decisions published separately from this CNOR for individual species that previously were candidates, a total of 251 species (including 109 plant and 142 animal species) are now candidates awaiting preparation of rules proposing their listing. These 251 species, along with the 50 species currently proposed for listing, are included in Table 1.

Table 2 lists the changes from the previous CNOR, and includes three species identified in the previous CNOR as either proposed for listing or classified as candidates that are no longer in those categories. This includes one species for which we published a final rule to list, plus the two species that we have determined do not warrant preparation of a rule to propose listing and therefore have been removed from candidate status in this CNOR.

New Candidates

Below we present a brief summary of one new plant candidate, Sphaeralcea gierischii (Gierisch mallow), which we are recognizing in this CNOR. Complete information, including references, can be found in the species assessment form. You may obtain a copy of this form from the Regional Office having the lead for the species (Region 2), or from our Internet website (http://endangered.fws.gov/candidates/index.html). For this species, we find that we have on file sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened, but that preparation and publication of a proposal is precluded by higher-priority listing actions (i.e., it met our definition of a candidate species). We also note below that four other species, Gunnison's prairie dog (specifically in the portion of its range in montane portions of central and south central Colorado and north central New Mexico), Rio Grande cutthroat trout, northern Mexican garter snake, and Jollyville Plateau salamander, were identified as candidates earlier this year as a result of separate petition findings published in the Federal Register.

Mammals

Gunnison's prairie dog (Cynomys gunnisoni) In a separate warranted but precluded 12month petition finding published on February 5, 2008 (73 FR 6660), we previously announced candidate status for the Gunnison's prairie dog in the montane portion of its range, located in central and south-central Colorado and north-central New Mexico. As described in that notice, we determined that the

montane portion of the range, which comprises approximately 40 percent of the total range of the species, is a significant portion of the range where listing the species is warranted. In that notice we assigned the population an LPN of 2. In this CNOR, we are making a technical correction to the LPN, changing it to a 3. This correction makes the LPN for Gunnison's prairie dog consistent with the clear intent of our 1983 LPN guidance (48 FR 43098). Under our LPN guidance, among listable entities facing threats of the same magnitude and imminence, a species that is the only member of a genus has highest priority (e.g. LPN 1), a full species (in a genus with more than one species) has the next highest priority (e.g. LPN 2), and a subspecies or DPS are in the following priority category (e.g. LPN 3). To be consistent with this approach, when we make a finding that listing is warranted but precluded for a species in a significant portion of its range (rather than throughout its entire range), we assign it to the same LPN category as a subspecies or DPS (e.g. LPN 3).

Reptiles

Northern Mexican gartersnake (Thamnophis eques megalops) We previously announced candidate status for this species in a separate warranted but precluded 12month petition finding published on November 25, 2008 (73 FR 71787).

Amphibians

Jollyville Plateau salamander (Eurycea tonkawae) We previously announced candidate status for this species in a separate warranted but precluded 12month petition finding published on December 13, 2007 (72 FR 71039).

Fish

Rio Grande cutthroat trout (Oncorhynchus clarki virginalis) We previously announced candidate status for this subspecies in a separate warranted but precluded 12month petition finding published on May 14, 2008 (73 FR 27899).

Flowering Plants

Sphaeralcea gierischii (Gierisch mallow) The following information is based on information contained in our files, including site visits by species experts. There are nine known populations of this species on a combined total of approximately 59.5 acres (ac) (24.12 hectares (ha)) in Arizona and Utah. Seven populations are found on approximately 55 ac (22.3 ha) managed by the Bureau of Land Management in Arizona. One population occurs on approximately 2 ac (0.81 ha) on land managed by the Arizona State Land Department. One population occurs on approximately 2.5 ac (1.01 ha) in Utah. The primary threat to the species in Arizona is ongoing gypsum mining and associated activities. The primary threat to the species in Utah is potential impacts from off-road vehicle use. The threats are high in magnitude, since survival of the species is threatened throughout its entire range in Arizona by gypsum mining, with the two largest populations in active mining operations. Loss of those two populations would significantly reduce the total number of individuals throughout the range, threatening the long-term viability of this species. The threats are imminent, since they are ongoing in Arizona. Therefore, we assigned an LPN of 2 to this species.

Listing Priority Changes in Candidates

We reviewed the LPN for all candidate species and are changing the numbers for the following species discussed below. Some of the changes reflect actual

changes in either the magnitude or imminence of the threats. In one case, the LPN change reflects a change in the taxonomy of the species. For some species, the LPN change reflects efforts to ensure national consistency as well as closer adherence to the 1983 guidelines in assigning these numbers, rather than an actual change in the nature of the threats.

Mammals

Gunnison's prairie dog (Cynomys gunnisoni) (montane population) See above summary under New Candidates .

Birds

Red knot (Calidris canutus rufa) The following summary is based on information containted in our files and information provided by petitioners. Four petitions to emergency list the red knot have been received: one on August 9, 2004, two others on August 5, 2005, and the latest on February 27, 2008. The rufa subspecies is one of six recognized subspecies of red knot and one of three subspecies occurring in North America (hereafter all mention of red knot in this CNOR refers strictly to the rufa subspecies). This subspecies makes one of the longest distance migrations known in the animal kingdom, as it travels between breeding areas in the central Canadian Arctic and wintering areas that are primarily in southern South America along the coast of Chile and Argentina. They migrate along the Atlantic coast of the United States, where they may be found from Maine to Florida.

The Delaware Bay area (in Delaware and New Jersey) is the largest known spring migration stopover area, with far fewer migrants congregating elsewhere along the Atlantic coast. The concentration in the Delaware Bay area occurs from the middle of May to early June, corresponding to the spawning season of horseshoe crabs. The knots feed on horseshoe crab eggs, rebuilding energy reserves needed to complete migrations to the Arctic and arrive on the breeding grounds in good condition. In the past, horseshoe crab eggs at Delaware Bay were so numerous that a knot could eat enough in two to three weeks to double its weight.

Surveys at wintering areas and at Delaware Bay during spring migration indicate a substantial decline in the red knot in recent years. At the Delaware Bay area, peak counts between 1982 and 1998 were as high as 95,360 knots. Counts may vary considerably between years. Some of the fluctuations can be attributed to predator-prey cycles in the breeding grounds, and counts show that knots rebound from such reductions. Research shows that since 1998, a high proportion of red knots leaving the Delaware Bay failed to achieve threshold departure masses needed to fly to breeding grounds and survive an initial few days of snow cover, and this corresponded to reduced annual survival rates. Recently, peak counts at the Delaware Bay area have been lower than in the past and do not show a rebound. The peaks were 13,315 in 2004; 15,345 in 2005; 13,455 in 2006; and 12,375 in 2007. Counts in recent years at the principal wintering areas in South America also are substantially lower than in the past and do not show a rebound.

The primary factor threatening the red knot is destruction and modification of its habitat, particularly the reduction in key food resources resulting from reductions in horseshoe crabs, which are harvested primarily for use as bait and secondarily to support a biomedical industry. Commercial harvest increased substantially in the 1990s. Since 1999, a series of timing restrictions and substantially lower harvest quotas have been adopted by the Atlantic States Marine Fisheries Commission (ASMFC), as well as New Jersey and Delaware. In May 2006, the ASMFC adopted restrictions effective from October 1, 2006, to

September 30, 2008, including a prohibition on harvest and landing of horseshoe crabs in New Jersey and Delaware from January 1 through June 7, harvest of males only from June 8 through December 31, and harvest limited to no more than 100,000 horseshoe crabs per state per year. The ASMFC also adopted other restrictions applicable to Maryland and Virginia. New Jersey established regulations in 2006 which superseded ASMFC restrictions; resulting in a moratorium on all horseshoe crab harvest in New Jersey from May 15, 2006 through June 7, 2008. In March 2008, New Jersey passed legislation imposing an open-ended moratorium on horseshoe crab harvest or landing within the State until such time as the red knot has fully recovered. In February 2007, Delaware imposed a 2year moratorium, effective January 1, 2007, on harvest of horseshoe crabs within Delaware lands or waters. In June 2007, following litigation by two businesses involved in the harvesting and sale of horseshoe crabs, Delaware's moratorium was overturned. Consequently Delaware developed regulations allowing for a male-only horseshoe crab harvest, consistent with restrictions adopted by ASMFC. The reductions in commercial harvest since 1999 are substantial: 726,660 horseshoe crab landings for bait were reported in 1999 in Delaware and New Jersey, compared to 173,177 in 2004 and a preliminary 2007 report of 76,663 crabs landed for bait in Delaware and no horseshoe crabs landed in New Jersey as a result of the State-imposed harvest moratorium. However, we do not know whether horseshoe crab populations will rebuild or how long a lag time there may be in increased availability of eggs, as the species needs 8-10 years to reach sexual maturity, and other key information for estimating population response is lacking. A survey in Delaware Bay showed horseshoe crab spawning activity was stable or slightly declining from 1999 to 2004. Updated spawning information following implementation of additional harvest restrictions shows that female horseshoe crab spawning activity in Delaware Bay has been stable for the overall period of 1999 to 2007 and male horseshoe crab spawning increased during that period. Thus, despite additional harvest regulations, numbers of spawning females have not yet shown an increase.

The numbers of red knots at key wintering areas in South America remained relatively steady from 2005 to 2007, giving optimism that the declining trend may have ceased or slowed. In 2008, however, counts of red knots within principal wintering areas showed an all-time low of only 14,800 red knots. Counts of red knots within the principal wintering areas in Chile and Argentina declined by nearly 75 percent from 1985 to 2007 and declined by an additional 15 percent in the past year (2007 to 2008). Thus, in recent years the number of knots in these survey areas has been much lower than in the past and the trend in the abundance is not improving despite a nearly tenfold reduction in horseshoe crab landings since the late 1990s.

Other identified threat factors include habitat destruction due to beach erosion and various shoreline protection and stabilization projects that are affecting areas used by migrating knots for foraging, the inadequacy of existing regulatory mechanisms, human disturbance, and competition with other species for limited food resources. Also, the concentration of red knots in the Delaware Bay areas and at a relatively small number of wintering areas makes the species vulnerable to potential large-scale events in those areas such as oil spills or severe weather in those areas. Overall, we conclude that the threats, in particular the modification of habitat through harvesting of horseshoe crabs, severe enough that it puts the viability of the knot at substantial risk and is therefore of a high magnitude. The threats are currently occurring, and therefore imminent because of continuing suppressed horseshoe-crab-egg forage conditions for red knot within the Delaware Bay stopover. To help ensure consistency in the application of our listing priority process, we changed the LPN from a 6 to a 3 for this subspecies because threats are imminent.

Lesser prairie-chicken (Tympanuchus pallidicinctus) The following summary is based on information contained in our files and the petition received on October 5, 1995. Additional information can be found in the 12month finding published on June 7, 1998 (63 FR 31400). This species occurs in Colorado, Kansas, New Mexico, Oklahoma, and Texas. Biologists estimate that the occupied range has declined by 92 percent since the 1800s.

The most serious threat to the lesser prairie-chicken is the present and threatened destruction, modification, and curtailment of its habitat and range. This includes loss of habitat from conversion of native rangelands to introduced forages and cultivation; conversion of suitable restored habitat in the Conservation Reserve Program (CRP) to cropland; cumulative habitat degradation caused by severe grazing; and energy development, including wind, oil, and gas development. The magnitude of threats to the species from wind energy development and conversion of CRP lands to croplands has increased recently, both in terms of ongoing activity and potential activity expected in the next few years. Additional threats are woody plant invasion of open prairies due to fire suppression, herbicide use (including resumption of herbicide use in shinnery oak habitat), and habitat fragmentation caused by structural and transportation developments. Many of these threats may exacerbate the normal effects of periodic drought on lesser- prairie-chicken populations. In many cases, the remaining suitable habitat has become fragmented by the spatial arrangement of these various activities. The increasing level of habitat fragmentation means that (1) some of the remaining habitat patches may become smaller than necessary to meet the requirements of individuals and populations; (2) necessary habitat heterogeneity may be lost to areas of homogeneous habitat structure; (3) areas between habitat patches may harbor higher levels of predators or brood parasites; and (4) the probability of recolonization of habitat that becomes unoccupied decreases as the distance between suitable habitat patches expands. Based on our most recent assessment, we find that ongoing threats to the lesser prairie-chicken have increased in terms of the amount of habitat involved and that the overall magnitude of threats to the lesser prairie-chicken throughout its range is high because the threats put the viability of the lesser prairie chicken at substantial risk. The threats are ongoing and thus, imminent. Consequently, we changed the LPN from an 8 to a 2 for this species.

Amphibians

Georgetown salamander (Eurycea naufragia) The following summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004. The Georgetown salamander is known from spring outlets along five tributaries to the San Gabriel River and one cave in the City of Georgetown, Williamson County, Texas. The Georgetown salamander has a very limited distribution and depends on a constant supply of clean water from the Northern Segment of the Edwards Aquifer for its survival.

Primary threats to this species are degradation of water quality due to expanding urbanization. Increased impervious cover by development increases the quantity and velocity of runoff that leads to erosion and greater pollution transport. Pollutants and contaminants that enter the Edwards Aquifer are discharged from spring outlets in salamander habitat and have serious morphological and physiological effects to the species. The Texas Commission on Environmental Quality (TCEQ) adopted the Edwards Rules in 1995 and 1997, which require a number of water-quality-protection measures for new development occurring in the recharge and contributing zones of the Edwards Aquifer. New

developments are still obligated to comply with regulations that were applicable at the time when project applications for development were first filed. However, Chapter 245 of the Texas Local Government Code permits grandfathering of state regulations. Grandfathering allows developments to be exempted from any new local or state requirements for water-quality controls and impervious-cover limits if the developments were planned prior to the implementation of such regulations. As a result of the grandfathering law, very few developments have followed these ordinances. In addition, it is significant that even if they were followed with every new development, these ordinances do not span the entire watershed for the Edwards Aquifer. The TCEQ has developed voluntary water quality protection measures for development in the Edwards Aquifer region of Texas; however, it is unknown if these measures will be implemented throughout a large portion of the watershed or if they will be effective in maintaining or improving water quality.

Development occurring outside the TCEQ's jurisdiction can have negative consequences on water quality and thus affect the species. Water-quality impacts threaten the continued existence of the Georgetown salamander by altering physical aquatic habitats and the food sources of the salamander. The threats are imminent because urbanization is ongoing, and continues to expand over the Northern Segment of the Edwards Aquifer. However, Williamson County and the Williamson County Conservation Fund are currently actively working to protect habitat and acquire land within the contributing watershed for the Georgetown salamander. Also, they are planning to conduct monitoring and data-collecting activities in an effort that is expected to lead to the development of a conservation strategy for this species. Although this species still meets our definition of a candidate, these conservation actions reduce the magnitude of the threat to the Georgetown salamander to a moderate level by reducing the amount of development occurring in the portion of the watershed that affects the species. Thus, we have changed the LPN from a 2 to an 8 for this species.

Fishes

Headwater chub (Gila nigra) The following summary is based on information contained in our files and the 12month finding on a petition to list the species, which was published May 3, 2006 (71 FR 26007). The range of the headwater chub has been reduced by approximately 60 percent. Seventeen streams (125 miles (200 kilometers) of stream) are thought to be occupied out of 20 streams (312 miles (500 kilometers) of stream) formerly occupied in the Gila River Basin in Arizona and New Mexico. Recent surveys have documented one new population. All remaining populations are fragmented and isolated and threatened by a combination of factors.

Headwater chub are threatened by introductions of nonnative fish that prey on them and/or compete with them for food. These nonnative fish are difficult to eliminate and, therefore, pose an ongoing threat. Habitat destruction and modification has occurred and continues to occur as a result of dewatering, impoundment, channelization, and channel changes caused by alteration of riparian vegetation and watershed degradation from mining, grazing, roads, water pollution, urban and suburban development, groundwater pumping, and other human actions. Existing regulatory mechanisms do not appear to be adequate for addressing the impact of nonnative fish and also have not removed or eliminated the threats that continue to be posed in relation to habitat destruction or modification. The fragmented nature and rarity of existing populations makes them vulnerable to other natural or manmade factors, such as drought and wildfire.

The Arizona Game and Fish Department has created the Arizona Statewide Conservation Agreement for Roundtail Chub (G. robusta), Headwater Chub, Flannelmouth Sucker (Catostomus latipinnis), Little Colorado River Sucker (Catostomus spp.), Bluehead Sucker (C. discobolus), and Zuni Bluehead Sucker (C. discobolus yarrowi), which is now final. The New Mexico Department of Game and Fish recently listed the headwater chub as endangered and created a recovery plan for the species, Colorado River Basin Chubs (Roundtail Chub, Gila Chub (G. intermedia), and Headwater Chub) Recovery Plan, which was approved by the New Mexico State Game Commission on November 16, 2006. Both the Arizona Agreement and the New Mexico Recovery Plan recommend preservation and enhancement of extant populations and restoration of historical headwater-chub populations. The recovery and conservation actions prescribed by Arizona and New Mexico plans, which we believe will reduce and remove threats to this species, will require further discussions and authorizations before they can be implemented, but several of the actions are being planned. Although threats are ongoing, new information indicates long-term persistence and stability of existing populations. Surveys conducted in 2006-2007 found a new population and determined that the Fossil Creek population is now stable-secure. Currently 10 of the 17 extant populations are considered stable based on abundance and evidence of recruitment. Based on our assessment, threats (e.g., nonnative species, habitat loss from land uses) remain imminent but are now of a moderate magnitude because the threat of nonnative species and habitat destruction appear to be of a lower magnitude than previously thought because all populations are continuing to persist, and have persisted over approximately 15 years of surveys on average, and some populations such as the upper Gila River are now considered stable. Thus we changed the LPN from a 2 to an 8 for this species.

Clams

Texas hornshell (Popenaias popei) The following summary is based on information contained in our files and information provided by the New Mexico Department of Game and Fish and Texas Parks and Wildlife Department. No new information was provided in the petition received on May 11, 2004. The Texas hornshell is a freshwater mussel found in the Black River in New Mexico, and the Rio Grande and the Devils River in Texas. Until March 2008, the only known extant populations were in New Mexico's Black River and one locality in the Rio Grande near Laredo, Texas. In March 2008, two new localities were confirmed in Texas one in the Devils River and one in the mainstem Rio Grande in the Rio Grande Wild and Scenic River segment downstream of Big Bend National Park.

The primary threats to this species are habitat alterations such as stream bank channelization, impoundments, and diversions for agriculture and flood control; contamination of water by oil and gas activity; alterations in the natural riverine hydrology; and increased sedimentation from prolonged overgrazing and loss of native vegetation. Although riverine habitats throughout the species' known occupied range are under constant threat from these ongoing or potential activities, numerous conservation actions to benefit the species are underway in New Mexico, including the completion of a state recovery plan for the species and the drafting of a Candidate Conservation Agreement with Assurances, and are beginning in Texas. We changed the LPN from a 2 to an 8 based on our conclusion that these conservation actions have reduced the magnitude of threats from high to moderate. This change in the magnitude of threat is due to the discovery of previously unknown locations where the species persists, as well as the implementation of recovery planning and conservation actions that are underway in New Mexico, and are beginning in Texas. The threats are still occurring, and thus remain imminent.

Slabside pearlymussel (Lexingtonia dolabelloides) The following summary is based on information contained in our files. The slabside pearlymussel is a freshwater mussel (Unionidae) endemic to the Cumberland and Tennessee River systems (Cumberlandian Region) in Alabama, Kentucky, Tennessee, and Virginia. It requires shoal habitats in free-flowing rivers to survive and successfully recruit new individuals into its populations.

Habitat destruction and alteration (e.g., impoundments, sedimentation, and pollutants) are the chief factors contributing to the decline of this species, which has been extirpated from numerous regional streams and is no longer found in Kentucky. The slabside pearlymussel was historically known from at least 32 streams, but is currently restricted to no more than 10 isolated stream segments. Current status information for most of the 10 populations deemed to be extant is available from recent periodic sampling efforts (sometimes annually) and other field studies. Comprehensive surveys have taken place in the Middle and North Forks Holston River, Paint Rock River, and Duck River in the past several years. Based on recent information, the overall population of the slabside pearlymussel is declining rangewide. Of the five streams in which the species remains in good numbers (e.g., Clinch, North and Middle Forks Holston, Paint Rock, Duck Rivers), the Middle and upper North Fork Holston Rivers have undergone drastic recent declines, while the Clinch population has been in a longer-term decline. Most of the remaining five populations (e.g., Powell River, Big Moccasin Creek, Hiwassee River, Elk River, Bear Creek) have doubtful viability, and several if not all of them may be on the verge of extirpation.

The threats remain high in magnitude, since all populations of this species are severely affected in numerous ways (impoundments, sedimentation, small population size, isolation of populations, gravel mining, municipal pollutants, agricultural runoff, nutrient enrichment, and coal processing pollution) which result in mortality and/or reduced reproductive output. Since the threats are ongoing, they are imminent. Therefore, to help ensure consistency in the application of our listing priority process, we changed the LPN from a 5 to a 2 because the threats are imminent and high in magnitude.

Snails

Fat-whorled pondsnail (Stagnicola bonnevillensis) The fat-whorled pondsnail, also known as the Bonneville pondsnail, occupies four spring pools north of the Great Salt Lake in Box Elder County, Utah. The number of individuals is unknown, and the total known occupied habitat is less than 1 hectare (2.45 acres). The primary threat has been chemical contamination of the groundwater. Significant actions are under way to remediate this threat, including implementation of a Corrective Action Plan to characterize and remediate groundwater contamination and implementation of a site management plan. Also, a groundwater model and risk assessment is being developed. The CAP is being implemented, and conservation measures are currently being monitored for effectiveness. Because these efforts have been under way for a sufficient period to reduce the threat from contamination, the magnitude of threats is reduced from moderate to low, and the threat is now nonimminent. Therefore, we have changed the listing priority from an 8 to an 11 for this species.

Elongate mud meadows springsnail (Pyrgulopsis notidicola) The following summary is based on information contained in our files. Pyrgulopsis notidicola is endemic to Soldier Meadow, which is located at the northern extreme of the western arm of the Black Rock Desert in the transition zone between the Basin and Range Physiographic Province and the Columbia Plateau Province, Humboldt County, Nevada. The type locality, and the only known location of the species,

occurs in a stretch of thermal (between 45° and 32° Celsius, 113° and 90° Fahrenheit) aquatic habitat that is approximately 600 m (1,968 ft) long and 2 m (6.7 ft) wide. Pyrgulopsis notidicola occurs only in shallow, flowing water on gravel substrate. The species does not occur in deep water (i.e., impoundments) where water velocity is low, gravel substrate is absent, and sediment levels are high.

The species and its habitat are threatened by recreational use in the areas where it occurs, as well as by the ongoing impacts of past water diversions and livestock grazing and current off-highway vehicle travel. Conservation measures implemented recently by the Bureau of Land Management include the installation of fencing to exclude livestock, wild horses, burros and other large mammals; closing of access roads to spring, riparian, and wetland areas and the limiting of vehicles to designated routes; the establishment of a designated campground away from the habitats of sensitive species; the installation of educational signage; and increased staff presence, including law enforcement and a volunteer site steward during the 6month period of peak visitor use. These conservation measures have reduced the magnitude of threats to the species to moderate; all remaining threats are nonimminent and involve long-term changes to the habitat for the species resulting from past impacts. Therefore, we have changed the LPN from 2 to 11.

Insects

Mardon skipper (Polites mardon) The following summary is based on information contained in our files and the petition we received on December 24, 2002. The Mardon skipper is a northwestern butterfly with a remarkably disjunct range. Currently this species is known from four widely separated regions: south Puget Sound region, southern Washington Cascades, Siskiyou Mountains of southern Oregon, and coastal northwestern California/southern Oregon. The number of documented locations for the species has increased from fewer than 10 in 1997 to more than 100 rangewide in 2008. New site locations have been documented in each year that targeted surveys have been conducted since 1999. In the past 8 years, significant local populations have been located in the Washington Cascades and in Southern Oregon, with a few local sites supporting populations of hundreds of Mardon skippers.

The Mardon skipper spends its entire life cycle in one location, often on the same grassland patch. The dispersal ability of Mardon skipper is restricted. Threats to the Mardon skipper include direct impacts to individuals and local populations by off-road vehicle use, livestock grazing, and pesticide drift. Habitat destruction or modification through conifer encroachment, invasive nonnative plants, roadside maintenance, and grassland/meadow management activities such as prescribed burning and mowing are also threats. However, these threats have been substantially reduced due to protections provided by State and Federal special status species programs. The magnitude of the threats is moderate because current regulatory mechanisms associated with State and Federal special status species programs afford a relatively high level of protection from additional habitat loss or destruction across most of the species' range. Threats are imminent because all sites within the species' range currently have one or more identified threats that are resulting in direct impacts to individuals within the populations, or a gradual loss or degradation of the species' habitats. Mardon skippers face a variety of threats that may occur at any time at any of the locations. Low numbers of individuals have been found at most of the known locations. Only a few locations are known to harbor greater than 100 individuals, and specific locations could easily be lost by changes in vegetation composition or from the threat of wildfire. The great

distances between the known locations for the species would not allow for dispersal of the species between populations; thus, loss of any population could lead to extirpation of the species at any of these locations. However, the discovery of new populations and the wide geographic range for the Mardon skipper provides a buffer against threats that could destroy all existing habitat simultaneously or jeopardize the continued existence of the species.

Since the threats are ongoing, they are imminent. Therefore, to help ensure consistency in the application of our listing priority process, we changed the LPN to reflect the fact that the threats are imminent. At the same time, for the reasons described above, the threats are now moderate in magnitude. Therefore, we changed the listing priority number from a 5 to an 8 for the Mardon skipper.

Coral Pink Sand Dunes tiger beetle (Cicindela albissima) The following summary is based on information contained in our files and the petition received April 25, 1994. The Coral Pink Sand Dunes tiger beetle occurs only at the Coral Pink Sand Dunes, approximately 7 miles west of Kanab, Kane County, in south-central Utah. It is restricted to a small part of the dune field, situated at an elevation of about 1,820 m (6,000 ft).

The beetle's habitat is being adversely affected by ongoing, recreational off-road vehicle use that is destroying and degrading the beetle's habitat, especially the interdunal swales used by the larvae. The continued survival of the beetle depends on the preservation of its habitat. The two agencies that manage the dunes field, the Utah Department of Parks and Recreation and the Bureau of Land Management, have restricted recreational off-road vehicle use in some areas, which reduces impacts. However, the protected areas may not be of sufficient size to enable the population to increase in size, and off-road vehicle use continues outside of the protected areas. Ongoing monitoring and research has documented that conservation measures have failed to lessen population declines. The beetle's population is also vulnerable to over-collecting by professional and hobby tiger beetle collectors. The taxon was previously recognized as a full species, resulting in a change in the listing priority from a 9 to an 8, based on imminent threats of a low to moderate magnitude. The magnitude of the threat from off-road vehicle use is now high, since this threat results in direct mortality to adult beetles, reduces available prey, and disturbs and desiccates the microhabitat of the larvae, and in tandem with drought, continues to cause steady declines in the tiger beetle population. The threats continue to be ongoing and are, therefore, imminent. Therefore, we changed the LPN from an 8 to a 2.

Flowering plants

Churchill Narrows buckwheat (Eriogonum diatomaceum) The following information is based on information contained in our files. Eriogonum diatomaceum is restricted to chalky, diatomaceous outcrops between 1,311 and 1,390 meters (m) (4,300 and 4,560 feet (ft)) elevation in the Churchill Narrows located in the Pine Nut Mountains, Lyon County, Nevada.

Field surveys during 2005 have shown that the habitat of nearly all the 15 known occurrences of E. diatomaceum is subject to exploration and potential development of existing mining claims. Observations in 2003 confirmed that mining activities have had direct and indirect impacts on E. diatomaceum in the recent past. Mineral development must continue to be considered a threat of high magnitude because all known populations of E. diatomaceum occur within existing mining claims on a substrate with economic potential. However, because previous applications to develop these industrial mineral deposits have been withdrawn,

we no longer consider mining to pose an imminent threat to the species. Other threats to the species from trampling and soil disturbance by livestock and other land uses are likely to have localized impacts and to be cumulative over time; we do not consider these activities to pose an imminent threat to the species. Nevertheless, all known populations are small and current regulatory mechanisms in place are inadequate in protecting the species throughout its range. Eriogonum diatomaceum is considered threatened by the Nevada Native Plant Society and was added to the Nevada State List of critically endangered and threatened plants. Due to the nonimminent threats of high magnitude, we have changed the LPN from a 2 to a 5 for this species.

Candidate Removals

As summarized below, we have evaluated the threats to the following two species and considered factors that, individually and in combination, currently or potentially could pose a risk to these species and their habitat. After a review of the best available scientific and commercial data, we conclude that listing these two species under the Endangered Species Act is not warranted because the species are not likely to become endangered species within the foreseeable future throughout all or a significant portion of their range. Therefore, for each of these species we find that proposing a rule to list it is not warranted, and we no longer consider it to be a candidate species for listing. We will continue to monitor the status of these species, and to accept additional information and comments concerning this finding. We will reconsider our determination for each species in the event that new information indicates that the threats to the species are of a considerably greater magnitude or imminence than identified through assessments of information contained in our files, as summarized here.

Snails

Ogden mountainsnail (formerly considered to be Oreohelix peripherica wasatchensis) The Ogden mountainsnail was previously thought to be a subspecies occurring at a single site near the mouth of Ogden Canyon in Weber County, Utah. The subspecies was considered to be vulnerable to extirpation from stochastic or human-caused events due to its restricted range, its proximity to an expanding residential area, and impacts from relatively heavy recreational use. Recent molecular phylogenetic studies have clarified that what was previously classified as Oreohelix peripherica wasatchensis is actually two distinct clades (i.e., taxa descending from a common ancestor) rather than being a separate subspecies: one clade is part of a different species, O. strigosa, and the other is part of a different subspecies, O. p. peripherica Because O. p. wasatchensis is no longer recognized as a valid subspecies, it is not a listable entity under the Act. Therefore, we find that listing O. p. wasatchensis is not warranted, and we have removed it from candidate status.

Both O. strigosa and O. p. peripherica are widespread and abundant. Our assessment shows that threats to the clades of these taxa at the Ogden Canyon site are not affecting the overall status of O. strigosa or O. p. peripherica such that either taxon is likely to become in danger of extinction within the foreseeable future throughout all or a significant portion of its range. Consequently, we find that listing is not warranted for either O. strigosa or O. p. peripherica.

Flowering Plants

Indigofera trita subsp. scabra (formerly Indigofera mucronata var. keyensis)

(Florida indigo or Asian indigo) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. In 2007 we became aware of new information regarding this plant's taxonomic status. We now believe the most appropriate name for Florida indigo is I. trita subsp. scabra. The current understanding is that this plant is widespread, ranging widely from south Florida and the Caribbean to Asia and Africa. We have only general information on this plant's status outside of the United States. In Florida, this plant occurs in coastal rock barrens, ecotone rock barren areas, and scraped areas mimicking rock barren habitat. Based upon available data, there are 12 occurrences of Florida indigo on eight islands in the upper and middle Florida Keys, in Monroe County; half of the original occurrences in the Keys are now extirpated, as are historic occurrences on mainland Florida in Collier and Miami-Dade Counties. Most occurrences in Florida are small; total population size is probably close to 3,000 individuals. In the United States, Florida indigo is threatened by habitat loss, even on public lands, as well as habitat loss and degradation from exotic plants on all sites. Shading by hardwoods is a problem at approximately half of the sites. Planned restoration activities, illegal dumping, and trespass have also been identified as threats. Florida indigo is vulnerable to natural disturbances, such as hurricanes, tropical storms, and storm surges; however, these factors may also work to maintain coastal rock barren habitat in the long-term. Sea level rise is considered a long-term threat that will continue.

Although threats remain in Florida, the Florida indigo is now considered to be a taxon that is widely distributed. We are not aware of threats elsewhere in its considerable range; the species does not warrant listing throughout its entire range. We have analyzed whether the Florida population is a significant portion of the range. Based on our evaluation of this population's low level of contribution toward the resiliency, redundancy, and representation of the species as a whole, we conclude that the Florida population of the Florida indigo is not a significant portion of the range. Based on findings and analysis in our updated assessment, we conclude that listing this species under the Endangered Species Act is not warranted throughout all or a significant portion of its range. The species no longer meets our definition of a candidate, and we have removed it from candidate status.

Petition Findings

The Act provides two mechanisms for considering species for listing. One method allows the Secretary, on his own initiative, to identify species for listing under the standards of section 4(a)(1). We implement this through the candidate program, discussed above. The second method for listing a species provides a mechanism for the public to petition us to add a species to the Lists. Under section 4(b)(3)(A), when we receive such a petition, we must determine within 90 days, to the maximum extent practicable, whether the petition presents substantial information that listing may be warranted (a 90day finding). If we make a positive 90day finding, we must promptly commence a status review of the species under section 4(b)(3)(A); we must then make and publish one of three possible findings within 12 months of the receipt of the petition (a 12month finding):

1. The petitioned action is not warranted;

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, section 4(b)(5) and 4(b)(6) govern further procedures regardless of whether 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 regulation implementing the petitioned action is precluded by pending proposals, and (b) expeditious progress is being made to add qualified species to the lists of endangered or threatened species. (We refer to this as a warranted-but-precluded finding.)

Section 4(b)(3)(C) of the Act requires that when we make a warranted-but-precluded finding on a petition, we are to treat such a petition as one that is resubmitted on the date of such a finding. Thus, we are required to publish new 12month findings on these resubmitted petitions on an annual basis.

On December 5, 1996, we made a final decision to redefine candidate species to mean those species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but for which issuance of the proposed rule is precluded (61 FR 64481; December 6, 1996). Therefore, the standard for making a species a candidate through our own initiative is identical to the standard for making a warranted-but-precluded 12month petition finding on a petition to list, and we add all petitioned species for which we have made a warranted-but-precluded 12month finding to the candidate list.

This publication provides notice of substantial 90day findings and the warranted-but-precluded 12month findings pursuant to section 4(b)(3) for candidate species listed on Table 1 that we identified on our own initiative, and that subsequently have been the subject of a petition to list. Even though all candidate species identified through our own initiative already have received the equivalent of substantial 90day and warranted-but-precluded 12month findings, we reviewed the status of the newly petitioned candidate species and through this CNOR are publishing specific section 4(b)(3) findings (i.e., substantial 90day and warranted-but-precluded 12month 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.

Pursuant to section 4(b)(3)(C)(i) of the Act, once a petition is filed regarding a candidate species, we must make a 12month petition finding in compliance with section 4(b)(3)(B) of the Act at least once a year, until we publish a proposal to list the species or make a final not-warranted finding. We make these annual findings for petitioned candidate species through the CNOR.

Section 4(b)(3)(C)(iii) of the Act requires us to implement a system to monitor effectively the status of all species for which we have made a warranted-but-precluded 12month 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, whether it was identified through our own initiative or through the petition process, we will make prompt use of the emergency listing authority under section 4(b)(7). 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

also constitute the Service's annual finding on the status of petitioned species pursuant to section 4(b)(3)(C)(i).

On June 20, 2001, the United States Court of Appeals for the Ninth Circuit held that the 1999 CNOR (64 FR 57534; October 25, 1999) did not demonstrate that we fulfilled the second component of the warranted-but-precluded 12month petition findings for the Gila chub and Chiracahua leopard frog (Center for Biological Diversity v. Norton, 254 F.3d 833 (9th Cir. 2001)). The court found that the one-line designation in the table of candidates in the 1999 CNOR, with no further explanation, did not satisfy section 4(b)(3)(B)(iii)'s requirement that the Service publish a finding together with a description and evaluation of the reasons and data on which the finding is based. The court suggested that this one-line statement of candidate status also precluded meaningful judicial review.

On June 21, 2004, the United States District Court for Oregon agreed that we can use the CNOR as a vehicle for making petition findings and that our reasoning for why listing is precluded does not need to be based on an assessment at a regional level (as opposed to a national level) (Center for Biological Diversity v. Norton Civ. No. 03-1111-AA (D. Or.)). However, this court found that our discussion on why listing the candidate species were precluded by other actions lacked specificity; in the list of species that were the subject of listing actions that precluded us from proposing to list candidate species, we did not state the specific action at issue for each species in the list and we did not indicate which actions were court-ordered.

On June 22, 2004, in a similar case, the United States District Court for the Eastern District of California also concluded that our determination of preclusion may appropriately be based on a national analysis (Center for Biological Diversity v. Norton No. CV S-03-1758 GEB/DAD (E.D. Cal.)). This court also found that the Act's imperative that listing decisions be based solely on science applies only to the determination about whether listing is warranted, not the question of when listing is precluded.

On March 24, 2005, the United States District Court for the District of Columbia held that we may not consider critical habitat activities in justifying our inability to list candidate species, requiring that we justify both our preclusion findings and our demonstration of expeditious progress by reference to listing proceedings for unlisted species (California Native Plant Society v. Norton, Civ. No. 03-1540 (JR) (D.D.C.)). The court further found that we must adequately itemize priority listings, explain why certain species are of high priority, and explain why actions on these high-priority species preclude listing species of lower priority. The court approved our reliance on national rather than regional priorities and workload in establishing preclusion and approved our basic explanation that listing candidate species may be precluded by statutorily mandated deadlines, court-ordered actions, higher-priority listing activities, and a limited budget.

In this CNOR we continue to incorporate information that addresses the courts' concerns. 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, 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, and we explain the

priority system and why the work we have accomplished does preclude action on listing candidate species.

Pursuant to section 4(b)(3)(C)(ii) and the Administrative Procedure Act (5 U.S.C. 551 et seq.), any party with standing may challenge the merits of any not-warranted or warranted-but-precluded petition finding incorporated in this CNOR. The analysis included herein, together with the administrative record for the decision at issue (particularly the supporting species assessment form), will provide an adequate basis for a court to review the petition finding.

Nothing in this document or any of our policies should be construed as in any way modifying the Act's requirement that we make a resubmitted 12month petition finding for each petitioned candidate within 1 year of the date of publication of this CNOR. If we fail to make any such finding on a timely basis, whether through publication of a new CNOR or some other form of notice, any party with standing may seek judicial review.

In this CNOR, we continue to address the concerns of the courts by including specific information in our discussion on preclusion (see below). In preparing this CNOR, we reviewed the current status of, and threats to, the 174 candidates and 5 listed species for which we have received a petition and for which we have found listing or reclassification from threatened to endangered 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.

Through this CNOR we are making the first 90day petition finding and 12month petition finding for Eriogonum corymbosum var. nilesii (Las Vegas buckwheat) and the New Mexico meadow jumping mouse (Zapus hudsonius luteus). We added these species to the candidate list in the last CNOR (published December 6, 2007) and subsequently received petitions for listing. We have not published separate substantial 90day and warranted-but-precluded 12month petition findings, but are making those findings in this CNOR.

Our review included updating the status of, and threats to, petitioned candidate or listed species for which we published findings, pursuant to section 4(b)(3)(B), 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 12month findings on the petitions for these species.

We have identified the candidate species for which we received petitions by the code C* in the category column on the left side of Table 1. 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, 2007, through September 30, 2008. 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 Act.

In addition to identifying petitioned candidate species in Table 1 below, we also present brief summaries of why these particular candidates warrant listing. More complete information, including references, is found in the species assessment forms. You may obtain a copy of these forms from the Regional Office having the lead for the species, or from the Fish and Wildlife Service's

Internet website: http://endangered.fws.gov/. As described above, under section 4 of the Act we may identify and propose species for listing based on the factors identified in section 4(a)(1), and section 4 also provides a mechanism for the public to petition us to add a species to the lists of species determined to be threatened species or endangered species under the Act. 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 the lists of endangered or threatened species.

Preclusion and Expeditious Progress

Preclusion is a function of the listing priority of a species in relation to the resources that are available and competing demands for those resources. 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 warranted but precluded by higher-priority listing actions.

The resources available for listing actions are determined through the annual Congressional appropriations process. The appropriation for the Listing Program is available to support work involving the following listing actions: proposed and final listing rules; 90day and 12month findings on petitions to add species to the Lists of Endangered and Threatened Wildlife and Plants (Lists) or to change the status of a species from threatened to endangered; annual determinations on prior warranted-but- precluded petition findings as required under section 4(b)(3)(C)(i) of the Act; critical habitat petition findings, proposed and final rules designating critical habitat; 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). 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 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. For example, during the past several years, the cost (excluding publication costs) for preparing a 12month finding, without a proposed rule, has ranged from approximately $11,000 for one species with a restricted range that requires a relatively uncomplicated analysis to $305,000 for another species that is wide-ranging and requires a complex analysis.

We cannot spend more than is appropriated for the Listing Program without violating the Anti-Deficiency Act (see 31 U.S.C. 1341(a)(1)(A)). In addition, in FY 1998 and for each fiscal year since then, Congress has placed a statutory cap on funds which may be expended for the Listing Program, equal to the amount expressly appropriated for that purpose in that fiscal year. This cap was designed to prevent funds appropriated for other functions under the Act (for example, recovery funds for removing species from the Lists), or for other Service programs, from being
used for Listing Program actions (see House Report 105-163, 105th Congress, 1st Session, July 1, 1997).

Recognizing that designation of critical habitat for species already listed

would consume most of the overall Listing Program appropriation, Congress also put a critical habitat subcap in place in FY 2002, and has retained it each subsequent year to ensure that some funds are available for other work in the Listing Program: 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 has had to use virtually the entire critical habitat subcap to address court-mandated designations of critical habitat, and consequently none of the critical habitat subcap funds have been available for other listing activities. In FY 2007, we were able to use some of the critical habitat subcap funds to fund proposed listing determinations for high-priority candidate species; however, in FY 2008 we were unable to do this because of all of the critical habitat subcap funds were needed to address our workload for designating critical habitat.

Thus, through the listing cap, the critical habitat subcap, and the amount of funds needed to address court-mandated critical habitat designations, Congress and the courts have in effect determined the amount of money available for other listing activities. Therefore, the funds in the listing cap, other than those needed to address court-mandated critical habitat for already listed species, represent the resources we must take into consideration when we make our determinations of preclusion and expeditious progress.

Congress also recognized that the availability of resources was the key element in deciding whether, when making a 12month petition finding, we would prepare and issue a listing proposal or instead make a warranted-but-precluded finding for a given species. The Conference Report accompanying Pub. L. 97-304, which established the current statutory deadlines and the warranted-but-precluded finding, states (in a discussion on 90day petition findings that by its own terms also covers 12month findings) that the deadlines were not intended to allow the Secretary to delay commencing the rulemaking process for any reason other than that the existence of pending or imminent proposals to list species subject to a greater degree of threat would make allocation of resources to such a petition [that is, for a lower-ranking species] unwise. Taking into account the information presented above, in FY 2008, the outer parameter within which expeditious progress must be measured is that amount of progress that could be achieved by spending $8,206,940, which was the amount available in the Listing Program appropriation that was not within the critical habitat subcap (because all of the funds within the subcap were needed in order to complete court-mandated critical habitat actions).

Our process is to 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. The $8,206,940 was used to fund work in the following categories: compliance with court orders and court-approved settlement agreements requiring that petition findings or listing determinations be completed by a specific date; section 4 (of the Act) listing actions with absolute statutory deadlines; essential litigation-related, administrative, and listing program management functions; and high-priority listing actions. The allocations for each specific listing action are identified in the Service's FY 2008 Allocation Table (part of our administrative record).

Our decision that a proposed rule to list any of the petitioned candidate species is warranted but precluded includes consideration of its listing priority. In accordance with guidance we published on September 21, 1983, we assign each candidate an LPN of 1 to 12, depending on the magnitude of threats (high vs. 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); species; or part of a species (subspecies, distinct population segment, or significant portion of the range)). 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). In addition to being precluded by lack of available funds, work on proposed rules for candidates with lower priority (i.e., those that have LPNs of 412) is also precluded by the need to issue proposed rules for higher-priority candidate species facing high-magnitude, imminent threats (i.e., LPNs of 13).

In FY 2007, we had more than 120 species with an LPN of 2. Therefore, we further ranked the candidate species with an LPN of 2 by using the following extinction-risk type criteria: International Union for the Conservation of Nature and Natural Resources (IUCN) Red list status/rank, Heritage rank (provided by NatureServe), Heritage threat rank (provided by NatureServe), and species currently with fewer than 50 individuals, or 4 or fewer populations. Those species with the highest IUCN rank (critically endangered), the highest Heritage rank (G1), the highest Heritage threat rank (substantial, imminent threats), and currently with fewer than 50 individuals, or fewer than 4 populations, comprised a list of approximately 40 candidate species. These 40 candidate species have had the highest priority to receive funding to work on a proposed listing determination. As we work on proposed listing rules for these 40 candidates, we are applying the ranking criteria to the next group of candidates with an LPN of 2 and 3 to determine the next set of highest priority candidate species.

To be more efficient in our listing process, as we work on proposed rules for these species in the next several years, we are preparing multi-species proposals when appropriate, and these may include species with lower priority if they overlap geographically or have the same threats as a species with an LPN of 2. In addition, available staff resources are also a factor in determining which high-priority species will receive funding. Finally, proposed rules for reclassification of threatened species to endangered are lower priority, since as listed species, they are already afforded the protection of the Act and implementing regulations.

Thus, we continue to find that proposals to list the petitioned candidate species included in Table 1 are all warranted but precluded, except for the highest priority candidate species which are listed in the tables below as having received funding in FY2008 for listing activities.

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 of Endangered and Threatened Wildlife and Plants. (Although we do not discuss it in detail here, we are also making expeditious progress in removing species from the list under the Recovery program, which is funded by a separate line item in the budget of the Endangered Species Program. As explained above in our description of the statutory cap on Listing Program funds, the Recovery Program funds and actions supported by them cannot be considered in determining expeditious progress made in the Listing Program.) As with our precluded finding, expeditious progress in adding qualified species to the Lists is a function of the resources available and the competing demands for those funds. Given that limitation, we find that we made expeditious progress in FY 2008 in the Listing Program. This progress included preparing and publishing the following determinations:

<GPOTABLE COLS="4" OPTS="L4,i1" CDEF="s30,r70,r40,r30">

FY 2008 Completed Listing Actions

Publication Date

Title

Actions

FR Pages

<ROW RUL="s&qdrt"><ENT I="01" O="xl">10/09/2007<ENT O="xl">90-Day Finding on a Petition to List the Black-Footed Albatross (Phoebastria nigripes) as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
72 FR 57278-57283

<ROW RUL="s&qdrt"><ENT I="01" O="xl">10/09/2007<ENT O="xl">90-Day Finding on a Petition To List the Giant Palouse Earthworm as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Not substantial
72 FR 57273-57276

<ROW RUL="s&qdrt"><ENT I="01" O="xl">10/23/2007<ENT O="xl">90-Day Finding on a Petition To List the Mountain Whitefish (Prosopium williamsoni) in the Big Lost River, ID, as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Not substantial
72 FR 59983-9989

<ROW RUL="s&qdrt"><ENT I="01" O="xl">10/23/2007<ENT O="xl">90-Day Finding on a Petition To List the Summer-Run Kokanee Population in Issaquah Creek, WA, as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Not substantial
72 FR 59979-59983

<ROW RUL="s&qdrt"><ENT I="01" O="xl">11/08/2007<ENT O="xl">Response to Court on Significant Portion of the Range, and Evaluation of Distinct Population Segments, for the Queen Charlotte Goshawk<ENT O="xl">Response to Court
72 FR 63123-63140

<ROW RUL="s&qdrt"><ENT I="01" O="xl">12/13/2007<ENT O="xl">12-Month Finding on a Petition To List the Jollyville Plateau salamander (Eurycea tonkawae) as Endangered With Critical Habitat<ENT O="xl">Notice of 12month Petition Finding, Warranted but Precluded
72 FR 1039-71054

<ROW RUL="s&qdrt"><ENT I="01" O="xl">1/08/2008<ENT O="xl">90-Day Finding on a Petition To List the Pygmy Rabbit (Brachylagus idahoensis) as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 1312-1313

<ROW RUL="s&qdrt"><ENT I="01" O="xl">1/10/2008<ENT O="xl">90-Day Finding on Petition To List the Amargosa River Population of the Mojave Fringe-Toed Lizard (Uma scoparia) as Threatened or Endangered With Critical Habitat<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 1855-1861

<ROW RUL="s&qdrt"><ENT I="01" O="xl">1/24/2008<ENT O="xl">12-Month Finding on a

Petition To List the Siskiyou Mountains Salamander (Plethodon stormi) and Scott Bar Salamander (Plethodon asupak) as Threatened or Endangered<ENT O="xl">Notice of 12month Petition Finding, Not Warranted
73 FR 4379-4418

<ROW RUL="s&qdrt"><ENT I="01" O="xl">2/05/2008<ENT O="xl">12-Month Finding on a Petition To List the Gunnison's Prairie Dog as Threatened or Endangered<ENT O="xl">Notice of 12month Petition Finding, Warranted but Precluded
73 FR 6660-6684

<ROW RUL="s&qdrt"><ENT I="01" O="xl">02/07/2008<ENT O="xl">12-Month Finding on a Petition To List the Bonneville Cutthroat Trout (Oncorhynchus clarki utah) as Threatened or Endangered<ENT O="xl">Notice of Review
73 FR 7236-7237

<ROW RUL="s&qdrt"><ENT I="01" O="xl">02/19/2008<ENT O="xl">Listing Phyllostegia hispida (No Common Name) as Endangered Throughout Its Range<ENT O="xl">Proposed Listing, Endangered
73 FR 9078-9085

<ROW RUL="s&qdrt"><ENT I="01" O="xl">02/26/2008<ENT O="xl">Initiation of Status Review for the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered<ENT O="xl">Notice of Status Review
73 FR 10218-10219

<ROW RUL="s&qdrt"><ENT I="01" O="xl">03/11/2008<ENT O="xl">12-Month Finding on a Petition To List the North American Wolverine as Endangered or Threatened<ENT O="xl">Notice 12month petition finding, Not warranted
73 FR 12929-12941

<ROW RUL="s&qdrt"><ENT I="01" O="xl">03/20/2008<ENT O="xl">90-Day Finding on a Petition To List the U.S. Population of Coaster Brook Trout (Salvelinus fontinalis) as Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 14950-14955

<ROW RUL="s&qdrt"><ENT I="01" O="xl">04/29/2008<ENT O="xl">90-Day Finding on a Petition to List the Western Sage-Grouse (Centrocercus urophasianus phaios) as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 23170-23172

<ROW RUL="s&qdrt"><ENT I="01" O="xl">04/29/2008<ENT O="xl">90-Day Finding on Petitions To List the Mono Basin Area Population of the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 23173-23175

<ROW RUL="s&qdrt"><ENT I="01" O="xl">05/06/2008<ENT O="xl">Petition To List the San Francisco Bay-Delta Population of the Longfin Smelt (Spirinchus thaleichthys) as Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 24611-24915

<ROW RUL="s&qdrt"><ENT I="01" O="xl">05/06/2008<ENT O="xl">90-Day Finding on a Petition to List Kokanee (Oncorhynchus nerka) in Lake Sammamish, Washington, as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding,

Substantial
73 FR 24915-24922

<ROW RUL="s&qdrt"><ENT I="01" O="xl">05/06/2008<ENT O="xl">12-Month Finding on a Petition to List the White-tailed Prairie Dog (Cynomys leucurus) as Threatened or Endangered<ENT O="xl">Notice of Status Review
73 FR 24910-24911

<ROW RUL="s&qdrt"><ENT I="01" O="xl">05/15/2008<ENT O="xl">90-Day Finding on a Petition To List the Ashy Storm-Petrel (Oceanodroma homochroa) as Threatened or Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 28080-28084

<ROW RUL="s&qdrt"><ENT I="01" O="xl">05/15/2008<ENT O="xl">Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout Its Range; Final Rule<ENT O="xl">Final Listing, Threatened
73 FR 28211-28303

<ROW RUL="s&qdrt"><ENT I="01" O="xl">05/15/2008<ENT O="xl">Special Rule for the Polar Bear; Interim Final Rule<ENT O="xl">Interim Final Special Rule
73 FR 28305-28318

<ROW RUL="s&qdrt"><ENT I="01" O="xl">05/28/2008<ENT O="xl">Initiation of Status Review for the Northern Mexican Gartersnake (Thamnophis eques megalops)<ENT O="xl">Notice of Status Review
73 FR 30596-30598

<ROW RUL="s&qdrt"><ENT I="01" O="xl">06/18/2008<ENT O="xl">90-Day Finding on aPetition To List the Long-Tailed Duck (Clangula hyemalis) as Endangered<ENT O="xl">Notice of 90day Petition Finding, Not substantial
73 FR 34686-34692

<ROW RUL="s&qdrt"><ENT I="01" O="xl">07/10/2008<ENT O="xl">90-Day Finding on a Petition To Reclassify the Delta Smelt (Hypomesus transpacificus) From Threatened to Endangered<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 39639-39643

<ROW RUL="s&qdrt"><ENT I="01" O="xl">07/29/2008<ENT O="xl">90-Day Finding on a Petition To List the Tucson Shovel-Nosed Snake (Chionactis occipitalis klauberi) as Threatened or Endangered with Critical Habitat<ENT O="xl">Notice of 90day Petition Finding, Substantial
73 FR 43905-43910

<ROW RUL="s&qdrt"><ENT I="01" O="xl">8/13/2008<ENT O="xl">Proposed Endangered Status for Reticulated Flatwoods Salamander; Proposed Designation of Critical Habitat for Frosted Flatwoods Salamander and Reticulated Flatwoods Salamander<ENT O="xl">Proposed Critical Habitat, Proposed Listing, Endangered
73 FR 47257-47324

<ENT I="01" O="xl">9/9/2008<ENT O="xl">12-month Finding on a Petition to List the Bonneville Cutthroat Trout as Threatened or Endangered<ENT O="xl">Notice 12 month petition finding, Not-warranted
73 FR 52235-52256

Our expeditious progress also included work on listing actions, which were

funded in FY 2008, but were not completed in FY 2008 (information on the cost of individual actions are part of our administrative record). These actions are listed below. We have completed all work funded in FY 2008 on all actions under a deadline set by a court. Actions in the middle section of the table are being conducted to meet statutory timelines, that is, timelines required under the Act. Actions in the bottom section of the table are high priority listing actions. These actions include work primarily on species with an LPN of 2, and selection of these species is partially based on available staff resources, and when appropriate, include species with a lower priority if they overlap geographically or have the same threats as the species with the high priority. Including these species together in the same proposed rule results in considerable savings in time and funding as compared to preparing separate proposed rules for each of them in the future.

<GPOTABLE COLS="2" OPTS="L4,i1" CDEF="s40,r40">

Actions funded in FY 2008 but not completed in 2008

Species

Action

Actions Subject to Court Order/Settlement Agreement

<ROW RUL="s&qdrt"><ENT I="01" O="xl">NONE
NONE

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Actions with Statutory Deadlines

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Phyllostegia hispida
Final listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Yellow-billed loon
12month petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Black-footed albatross
12month petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Mount Charleston blue butterfly
12month petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Goose Creek milk-vetch
12month petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Mojave fringe-toed lizard
12month petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">White-tailed prairie dog
12month petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Pygmy rabbit (rangewide)
12month petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Black-tailed prairie dog
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Lynx (include New Mexico in listing)
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Wyoming pocket gopher
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Dusky Tree Vole1
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Llanero coqui
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">American pika
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Sacramento Valley Tiger Beetle1
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Sacramento Mts. checkerspot butterfly
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">206 species
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">475 Southwestern species
90day petition finding

<ROW RUL="s&qdrt"><ENT I="01" O="xl">High Priority Listing Actions

<ROW RUL="s&qdrt"><ENT I="01" O="xl">48 Kauai species1 (includes 31 candidate species: 24 with LPN = 2, 3 with LPN = 3, 1 with LPN = 5, 2 with LPN = 8)
Proposed listing (completed in October 2008)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">21 Oahu candidate species (16 plants, 5 damselflies) (18 with LPN = 2, 3 with LPN = 3, 1 with LPN = 9)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">3 southeast aquatic species (Georgia pigtoe, interrupted rocksnail, rough hornsnail)2 (all with LPN = 2)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Casey's june beetle (LPN = 2)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Sand dune lizard (LPN = 2)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">2 southwest springsnails (Pyrgulopsis bernadina (LPN = 2), Pyrgulopsis trivialis (LPN = 2))
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">3 southwest springsnails (Pyrgulopsis chupaderae (LPN = 2), Pyrgulopsis gilae (LPN = 11), Pyrgulopsis thermalis (LPN = 11))
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">2 mussels (rayed bean (LPN = 2), snuffbox No LPN)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">2 mussels (sheepnose (LPN = 2), spectaclecase (LPN = 4),)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Ozark hellbender3 (LPN = 3)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Altamaha spinymussel (LPN = 2)
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">4 southeast fish (rush darter (LPN = 2), chucky madtom (LPN = 2), Cumberland darter (LPN = 5), laurel dace (LPN = 5))
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">2 Colorado plants (Parachute beardtongue (Penstemon debilis) (LPN = 2), Debeque phacelia (Phacelia submutica) (LPN = 8))
Proposed listing

<ROW RUL="s&qdrt"><ENT I="01" O="xl">Pagosa skyrocket (Ipomopsis polyantha) (LPN = 2)
Proposed listing

1 These actions were completed in October 2008.

2 Funds for listing actions for 3 of these species were also provided in FY 2007.

3 We funded a proposed rule for this subspecies with an LPN of 3 ahead of other species with LPN of 2, because the threats to the species were so imminent and of a high magnitude that we considered emergency listing if we were unable to fund work on a proposed listing rule in FY 2008.

We also funded work on resubmitted petitions findings for 174 candidate species (species petitioned prior to the last CNOR). We did not update our resubmitted petition finding for the Columbia Basin population of the greater sage-grouse in this notice, as we are considering new information and will update our findings at a later date (see 73 FR 23170, April 29, 2008). We also did not update our resubmitted petition findings for the 66 candidate species for which we are preparing proposed listing determinations; see summaries below regarding publication of these determinations. We also funded revised 12month petition findings for two candidate species that we are removing from candidate status, which are being published as part of this CNOR (see Summary of Candidate Removals). Because the majority of these 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. We also continue to monitor the status of these species through our Candidate Conservation Program. The cost of updating the species assessment forms and publishing the joint publication of the CNOR and resubmitted petition findings is shared between the

Listing Program and the Candidate Conservation Program.

During FY 2008, we also funded work on resubmitted petition findings for uplisting five listed species, for which petitions were previously received.

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, such as by batching related actions together. Given our limited budget for implementing section 4 of the Act, these actions described above collectively constitute expeditious progress.

Although we have not been able to resolve the listing status of many of the candidates, several programs in the Service contribute to the conservation of these species. In particular, we have a separate budgeted program, the Candidate Conservation program, which focuses on providing technical expertise for developing conservation strategies and agreements to guide voluntary on-the-ground conservation work for candidate and other at-risk species. The main goal of this program is to address the threats facing candidate species. Through this program, we work with our partners (other Federal agencies, State agencies, Tribes, local governments, private landowners, and private conservation organizations) to address the threats to candidate species and other species at-risk. We are currently working with our partners to implement voluntary conservation agreements for more than 140 species covering 5 million acres of habitat.

We are actively working to conserve many candidate species. In some instances, the sustained implementation of strategically designed conservation efforts culminates in making listing unnecessary for species that are proposed or candidates for listing. Recent examples of species for which listing has been unnecessary due to the contributions of conservation efforts include the Cow Head tui chub, Beaver Cave beetle, Surprising Cave beetle, and Sand Mountain blue butterfly.

Findings for Petitioned Candidate Species

For our revised 12month petition findings for species we are removing from candidate status, see summaries above under Summary of Candidate Removals.

Mammals

Pacific Sheath-tailed Bat, American Samoa DPS (Emballonura semicaudata semicaudata) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This small bat is a member of the Emballonuridae, an Old World bat family that has an extensive distribution, primarily in the tropics. The Pacific sheath-tailed bat was once common and widespread in Polynesia and Micronesia and it is the only insectivorous bat recorded from a large part of this area. The species as a whole (E. semicaudata) occurred on several of the Caroline Islands (Palau, Chuuk, and Pohnpei), Samoa (Independent and American), the Mariana Islands (Guam and the CNMI), Tonga, Fiji, and Vanuatu. While populations appear to be healthy in some locations, mainly in the Caroline Islands, they have declined substantially in other areas, including Independent and American Samoa, the Mariana Islands, Fiji, and possibly Tonga. Scientists recognize four subspecies: E. s. rotensis, endemic to the Mariana Islands (Guam and the Commonwealth of the Northern Mariana Islands (CNMI)); E. s. sulcata, occurring

in Chuuk and Pohnpei; E. s. palauensis, found in Palau; and E. s. semicaudata, occurring in American and Independent Samoa, Tonga, Fiji, and Vanuatu. This candidate assessment form addresses the distinct population segment (DPS) of E. s. semicaudata that occurs in American Samoa.

E. s. semicaudata historically occurred in American and Independent Samoa, Tonga, Fiji, and Vanuatu. It is extant in Fiji and Tonga, but may be extirpated from Vanuatu and Independent Samoa. There is some concern that it is also extirpated from American Samoa, the location of this DPS, where surveys are currently ongoing to ascertain its status. The factors that led to the decline of this subspecies and the DPS are poorly understood; however, current threats to this subspecies and the DPS include habitat loss, predation by introduced species, and its small population size and distribution, which make the taxon extremely vulnerable to extinction due to typhoons and similar natural catastrophes. Thus, the threats are high in magnitude. The Pacific sheath-tailed bat may also by susceptible to disturbance to roosting caves. The LPN for E. s. semicaudata is 3 because the magnitude of the threats is high, the threats are ongoing, and therefore, imminent, and the taxon is a distinct population segment of a subspecies.

Pacific Sheath-tailed Bat (Emballonura semicaudata rotensis), Guam and the Commonwealth of the Northern Mariana Islands The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This small bat is a member of the Emballonuridae, an Old World bat family that has an extensive distribution, primarily in the tropics. The Pacific sheath-tailed bat was once common and widespread in Polynesia and Micronesia and it is the only insectivorous bat recorded from a large part of this area. E. s. rotensis is historically known from the Mariana Islands and formerly occurred on Guam and in the CNMI on Rota, Aguiguan, Tinian (known from prehistoric records only), Saipan, and possibly Anatahan and Maug. Currently, E. s. rotensis appears to be extirpated from all but one island in the Mariana archipelago. The single remaining population of this subspecies occurs on Aguiguan, Commonwealth of the Northern Mariana Islands (CNMI).

Threats to this subspecies have not changed over the past year. The primary threats to the subspecies are ongoing habitat loss and degradation as a result of feral goat (Capra hircus) activity on the island of Aguiguan and the taxon's small population size and limited distribution. Predation by nonnative species and human disturbance are also potential threats to the subspecies. The subspecies may be near the point where stochastic events, such as typhoons, are increasingly likely to affect its continued survival. The disappearance of the remaining population on Aguiguan would result in the extinction of the subspecies. Thus, the threats are high in magnitude. The LPN for E. s. rotensis remains at 3 because the magnitude of the threats is high, the threats are ongoing, and therefore, imminent, and the taxon is a subspecies.

New England cottontail (Sylvilagus transitionalis) The following summary is based on information contained in our files and information received in response to our notice published on June 30, 2004, when we announced our 90day petition finding and initiation of a status review (69 FR 39395). We received the petition on August 30, 2000.

The New England cottontail (NEC) is a medium to large sized cottontail rabbit that may reach 1,000 grams in weight, and is one of two species within the genus Sylvilagus occurring in New England. New England cottontails are considered habitat specialists, in so far as they are dependent upon early-successional

habitats typically described as thickets. The species is the only endemic cottontail in New England. Historically, the NEC occurred in seven states and ranged from southeastern New York (east of the Hudson River) north through the Champlain Valley, southern Vermont, the southern half of New Hampshire, southern Maine and south throughout Massachusetts, Connecticut and Rhode Island. The current range of the NEC has declined substantially and occurrences have become increasingly separated. The species' distribution is fragmented into five apparently isolated metapopulations. The area occupied by the cottontail has contracted from approximately 90,000 sq km to 12,180 sq km. Recent surveys indicate that the long term decline in NEC continues. For example, surveys for the species in early 2008 documented the presence of NEC in 7 of the 23 New Hampshire locations that were known to be occupied in 2002 and 2003. Similarly, surveys in Maine found the species present in 12 of 57 sites identified in an extensive survey that spanned the years 2000 to 2004. Unlike the New Hampshire study, several new sites were documented in Maine during 2008. Some have suggested that the decline in NEC occurrences in 2008 may be attributed to persistent snow cover throughout northern New England during the winter of 2007-2008. Similar surveys to assess trends in other states have not been conducted. It is estimated that less than one third of the occupied sites occur on lands in conservation status and fewer than 10 percent are being managed for early-successional forest species.

The primary threat to the New England cottontail is loss of habitat through succession and alteration. Isolation of occupied patches by areas of unsuitable habitat and high predation rates are resulting in local extirpation of New England cottontails from small patches. The range of the New England cottontail has contracted by 75 percent or more since 1960 and current land uses in the region indicate that the rate of change, about two percent range loss per year, will continue. Additional threats include competition for food and habitat with introduced eastern cottontails and large numbers of native white-tailed deer; inadequate regulatory mechanisms to protect habitat; and mortality from predation. The magnitude of the threats continues to be high, because they occur rangewide, and have an effect on the survival of the species. They are imminent because they are ongoing. Thus, we retained an LPN of 2 for this species.

Fisher, West Coast DPS (Martes pennanti) The following summary is based on information contained in our files and in the Service's initial warranted-but-precluded finding published in the Federal Register on April 8, 2004 (68 FR 18770). The fisher is a carnivore in the family Mustelidae and is the largest member of the genus Martes. Historically, the West Coast population of the fisher extended south from British Columbia into western Washington and Oregon, and in the North Coast Ranges, Klamath-Siskiyou Mountains, and Sierra Nevada in California. The fisher is believed to be extirpated or reduced to scattered individuals from the lower mainland of British Columbia through Washington and in the central and northern Sierra Nevada range in California. Native populations of fisher currently occur in the North Coast Ranges of California, the Klamath- Siskiyou Mountains of northern California and southern Oregon, and in isolated populations occurring in the southern Sierra Nevada in California. Descendents of a fisher reintroduction effort also occur in the southern Cascade Range in Oregon. In January of 2008, the Washington Department of Fish and Wildlife began to implement their fisher recovery goals for the state through a reintroduction effort currently underway in the Olympic National Park.

We lack precise empirical data on West Coast DPS fisher numbers. However, there is a lack of detections over much of the fisher's historic range, even with standardized survey and monitoring efforts in California, Oregon, and Washington. There is also a high degree of genetic relatedness within some

populations, and populations of native fisher in California are separated by four times the species' maximum dispersal distance. The above listed factors all indicate that the likely extant fisher populations are small and isolated from one another.

Major threats that fragment or remove key elements of fisher habitat include various forest vegetation management practices such as timber harvest and fuels reduction treatments. Other potential major threats in portions of the range include: uncharacteristically severe wildfire, changes in forest composition and structure, urban and rural development, recreation development, and highways. Major threats to fisher that lead to direct mortality and injury to fisher include: Collisions with vehicles; predation; and viral borne diseases such as rabies, parvovirus, canine distemper, and Anaplasma phagocytophilum. Existing regulatory mechanisms on Federal, State, and private lands affect key elements of fisher habitat and do not currently provide sufficient certainty that conservation efforts will be effective or will be implemented. The magnitude of threats is high, as they occur across the range of the DPS resulting in a negative impact on fisher distribution and abundance. However, the threats are nonimminent as the greatest long-term risks to the fisher in its west coast range are the subsequent ramifications of the isolation of small populations and their interactions with the listed threats. The three other areas containing fisher populations appear to be stable or are not rapidly declining based on recent survey and monitoring efforts. Therefore, we assigned an LPN of 6 to this population.

New Mexico meadow jumping mouse (Zapus hudsonius luteus) The following summary is based on information contained in our files and the petition we received October 15, 2008. The New Mexico meadow jumping mouse (jumping mouse) is endemic to New Mexico, Arizona, and a small area of southern Colorado. The jumping mouse nests in dry soils, but uses moist, streamside, dense riparian/wetland vegetation. Recent genetic studies confirm that the New Mexico meadow jumping mouse is a distinct subspecies from other Zapus hudsonius subspecies, confirming the currently accepted subspecies designation.

The threats that have been identified are excessive grazing pressure, water use and management, highway reconstruction, development, recreation, and beaver removal. Surveys conducted in 2005 and 2006 documented a drastic decline in the number of occupied localities and suitable habitat across the range of the species in New Mexico and Arizona. Of the original 98 known historical localities, there are now only 9 known extant localities in New Mexico, 2 in Arizona, and an additional 8 localities that have not been surveyed since the early to mid 1990s. Moreover, the highly fragmented nature of its distribution is also a major contributor to the vulnerability of this species and increases the likelihood of very small, isolated populations being extirpated. The insufficient number of secure populations, and the destruction, modification, or curtailment of its habitat, continue to pose the most immediate threats to this species. Because the threats affect the survival of jumping mouse in all but two of the extant localities, the threats are of a high magnitude. These threats are currently occurring and, therefore, are imminent. Thus, we continue to assign an LPN of 3 to this subspecies.

Mazama pocket gopher (Thomomys mazama ssp. couchi, douglasii, glacialis, louiei, melanops, pugetensis, tacomensis, tumuli, yelmensis) The following summary is based on information contained in our files. No new information was provided in the petition received December 11, 2002. One subspecies, T. m. melanops is found on alpine meadows in Olympic National Park. Another subspecies, T. m. douglasii is found in extreme southwest Washington. The other seven subspecies of this

pocket gopher are associated with glacial outwash prairies in western Washington. Of these seven subspecies, five are likely still extant (couchi, glacialis, pugetensis, tumuli, and yelmensis) and two (T. m. louiei, and tacomensis) are likely extinct. Few glacial outwash prairies remain in Washington today. Historically, such prairies were patchily distributed, but the area they occupied totaled approximately 170,000 acres. Now, residential and commercial development, fire regime alteration, and ingrowth of woody vegetation have further reduced their numbers. In addition, development in or adjacent to these prairies has likely increased predation on Mazama pocket gophers by dogs and cats.

The magnitude of threat is high because the survival of the subspecies is significantly affected by the patchy and isolated distributions of its populations in habitats highly desirable for development and subject to a wide variety of human activities that permanently alter the habitat. Only the Olympic pocket gopher is not threatened with development. The threat of invasive plant species to the quality of a highly specific habitat requirement is high and constant. There are few known populations of each subspecies. A limited dispersal capability, and the loss and degradation of additional patches of appropriate habitat will further isolate populations and increase their vulnerability to extinction. Loss of any of the subspecies will reduce the genetic diversity and the likelihood of continued existence of the Thomomys mazama subspecies complex in Washington.

The threats are ongoing and, therefore, imminent. Gravel pits threaten persistence of one of the remaining subspecies (Roy Prairie (T. m. glacialis)), and the largest populations of two other subspecies (Shelton (T. m. couchi) and Olympia (T. m. pugetensis)) are located on airports with planned development. Yelm pocket gophers are also threatened by proposed development on Fort Lewis, and Tenino pocket gophers (T. m. tumuli) are threatened by ongoing development in general. Only the Olympic pocket gopher (T. m. melanops) is relatively safe from threats from development due to its more remote location within the Olympic National Park, but this subspecies is still currently affected by invasive plants. Thus, we assign an LPN of 3 to these subspecies.

Palm Springs round-tailed ground squirrel (Spermophilus tereticaudus chlorus) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Palm Springs round-tailed ground squirrel is one of four recognized subspecies of round-tailed ground squirrels. The range of this squirrel is limited to the Coachella Valley region of Riverside County, California. Dunes and hummocks associated with Prosopis glandulosa var. torreyana (honey mesquite) are the primary habitat for the Palm Springs round-tailed ground squirrel and to a lesser extent those dunes and hummocks associated with Larrea tridentata (creosote), or other vegetation. Honey mesquite provides a valuable food source for the squirrel and also provides cover and shelter by trapping aeolian sand that form dunes occupied by the Palm Springs round-tailed ground squirrel. Rapid growth of desert cities such as Palm Springs and Palm Desert in the Coachella Valley has raised concerns about the conservation of the narrowly distributed Palm Springs round-tailed ground squirrel. Urban development and drops in the groundwater table have eliminated 90 percent of the honey mesquite in the Coachella Valley. Furthermore, urban development has fragmented habitat occupied by this squirrel thereby isolating populations. The high rate of urban development and associated lowering of the groundwater table that was likely historically responsible for the high losses of honey mesquite sand dune/hummocks habitat continues today. We continue to assign the Palm Springs ground squirrel subspecies an LPN of 3 because the threats are ongoing and are

of a high magnitude as they affect a large portion of its' range and significantly affect this subspecies survival.

Southern Idaho ground squirrel (Spermophilus brunneus endemicus) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The southern Idaho ground squirrel is endemic to four counties in southwest Idaho; its total known range is approximately 425,630 hectares (1,051,752 acres). Threats to southern Idaho ground squirrels include: habitat degradation and fragmentation; direct killing from shooting, trapping, or poisoning; predation; competition with Columbian ground squirrels; and inadequacy of existing regulatory mechanisms. Habitat degradation and fragmentation appear to be the primary threats to the species. Nonnative annuals now dominate much of this species' range, have changed the species composition of vegetation used as forage for the southern Idaho ground squirrel, and have altered the fire regime by accelerating the frequency of wildfire. Habitat deterioration, destruction, and fragmentation contribute to the current patchy distribution of southern Idaho ground squirrels. Based on recent genetic work, southern Idaho ground squirrels are subject to more genetic drift and inbreeding than expected.

Two Candidate Conservation Agreements with Assurances (CCAAs) have been completed for this species in recent years. Both CCAAs include conservation measures that provide additional protection to southern Idaho ground squirrels from recreational shooting and other direct killing on enrolled lands, and also allow the State of Idaho, the Service and BLM to investigate ways of restoring currently degraded habitat. At this time, the acreage enrolled through these two CCAAs is approximately 38,756 hectares (95,767 acres), or 9 percent of the known range. While the ongoing conservation efforts have helped to reduce the magnitude of threats to moderate, habitat degradation remains the primary threat to the species throughout most of its range. This threat is imminent due to the ongoing and increasing prevalence and dominance of nonnative vegetation, and the current patchy distribution of the species. Thus, we assign an LPN of 9 to this subspecies.

Washington ground squirrel (Spermophilus washingtoni) The following summary is based on information contained in our files and in the petition we received on March 2, 2000. The Washington ground squirrel is endemic to the Deschutes-Columbia Plateau sagebrush-steppe and grassland communities in eastern Oregon and south-central Washington. Although widely abundant historically, recent surveys suggest that its current range has contracted toward the center of its historic range. Approximately two-thirds of the Washington ground squirrel's total historic range has been converted to agricultural and residential uses. The most contiguous, least-disturbed expanse of suitable habitat within the species' range occurs on a site owned by Boeing, Inc. and on the Naval Weapons Systems Training Facility near Boardman, Oregon. In Washington, the largest expanse of known suitable habitat occurs on State and Federal lands.

Agricultural, residential, and wind power, among other forms of development, continue to eliminate Washington ground squirrel habitat in portions of its range. Throughout much of its range, Washington ground squirrels are threatened by the establishment and spread of invasive plant species, particularly cheatgrass, which alters available cover, food quantity and quality, and increases fire intervals. Additional threats include habitat fragmentation, recreational shooting, genetic isolation and drift, and predation. Potential threats include disease, drought, and possible competition with related species in disturbed habitat at the periphery of their range. In Oregon, some threats are being addressed as a result of the State listing of this species, and by

implementation of the Threemile Canyon Farms Multi-Species Candidate Conservation Agreement with Assurances (CCAA). In Washington, there are currently no formal agreements with private landowners or with State or Federal agencies to protect the Washington ground squirrel. Additionally, no State or Federal management plans have been developed that specifically address the needs of the species or its habitat. Since current and potential threats are widespread and, in some cases, severe, we conclude the magnitude of threats remains high. However, because the CCAA addressed the imminent loss of a large portion of habitat to agriculture, and because there are no other known, large-scale efforts to convert suitable habitat to agriculture, the threats, overall, are not imminent. We, therefore, have kept the LPN at 5 for this species.

Birds

Spotless crake, American Samoa DPS (Porzana tabuensis) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. P. tabuensis is a small, dark, cryptic rail found in wetlands and rank scrub or forest in the Philippines, Australia, Fiji, Tonga, Society Islands, Marquesas, Independent Samoa, and American Samoa (Ofu, Tau). The genus Porzana is widespread in the Pacific, where it is represented by numerous island-endemic and flightless species (many of which are extinct as a result of anthropogenic disturbances) as well as several more cosmopolitan species, including P. tabuensis. No subspecies of P. tabuensis are recognized. The American Samoa population is the only population of spotless crakes under U.S. jurisdiction. The available information indicates that distinct populations of the spotless crake, a species not noted for long-distance dispersal, are definable. The population of spotless crakes in American Samoa is discrete in relation to the remainder of the species as a whole, which is distributed in widely separated locations. Although the spotless crake (and other rails) have dispersed widely in the Pacific, island rails have tended to reduce or lose their power of flight over evolutionary time and so become isolated (and vulnerable to terrestrial predators such as rats). The population of this species in American Samoa is therefore distinct based on geographic and distributional isolation from spotless crake populations on other islands in the oceanic Pacific, the Philippines, and Australia. The American Samoa population of the spotless crake links the Central and Eastern Pacific portions of the species' range. The loss of this population could cause an increase of roughly 500 miles (805 kilometers) in the disjunction between the central and eastern Polynesian portions of the spotless crake's range, and could result in the isolation of the Marquesas and Society Islands populations by further limiting the potential for even rare genetic exchange. Based on the discreteness and significance of the American Samoa population of the spotless crake, we consider this population to be a distinct vertebrate population segment.

Threats to this population have not changed over the past year. The population in American Samoa is threatened by small population size, limited distribution, predation by nonnative mammals, continued development of wetland habitat, and natural catastrophes such as hurricanes. The co-occurrence of a known predator of ground-nesting birds, the Norway rat (Rattus norvegicus), along with the extremely restricted observed distribution and low numbers, indicate that the magnitude of the threats to the American Samoa DPS of the spotless crake continues to be high, because the threats significantly affect the species survival. The threats are ongoing, and therefore imminent. Based on this assessment of existing information about the imminence and high magnitude of these threats, we assigned the spotless crake an LPN of 3.

Yellow-billed cuckoo, western U.S. DPS (Coccyzus americanus) The following

summary is based on information contained in our files and the petition we received on February 9, 1998. See also our 12month petition finding published on July 25, 2001 (66 FR 38611). We consider the yellow-billed cuckoos that occur in the western United States as a DPS. The area for this DPS is west of the crest of the Rocky Mountains. The yellow-billed cuckoo (Coccyzus americanus) is a medium-sized bird that breeds in large blocks of riparian habitats (particularly woodlands with cottonwoods (Populus fremontii) and willows (Salix sp.). Dense understory foliage appears to be an important factor in nest site selection, while cottonwood trees are an important foraging habitat in areas where the species has been studied in California.

The threats currently facing the yellow-billed cuckoo include habitat destruction and modification and pesticide application. Principal causes of riparian habitat losses are conversion to agricultural and other uses, dams and river flow management, stream channelization and stabilization, and livestock grazing. Available breeding habitats for cuckoos have also been substantially reduced in area and quality by groundwater pumping and the replacement of native riparian habitats by invasive nonnative plants, particularly tamarisk. Overuse by livestock has been a major factor in the degradation and modification of riparian habitats in the western United States. The effects include changes in plant community structure and species composition and in relative abundance of species and plant density. These changes are often linked to more widespread changes in watershed hydrology. Livestock grazing in riparian habitats typically results in reduction of plant species diversity and density, especially of palatable broadleaf plants like willows and cottonwood saplings, and is one of the most common causes of riparian degradation. In addition to destruction and degradation of riparian habitats, pesticides may affect cuckoo populations. In areas where riparian habitat borders agricultural lands, e.g., in California's central valley, pesticide use may indirectly affect cuckoos by reducing prey numbers, or by poisoning nestlings if sprayed directly in areas where the birds are nesting. We retained an LPN of 3 for this population of yellow-billed cuckoo; the threats are ongoing and therefore imminent, and they are of a high magnitude, because ongoing habitat degradation could affect the survival of the DPS rangewide.

Friendly ground-dove, American Samoa DPS (Gallicolumba stairi stairi) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The genus Gallicolumba is distributed throughout the Pacific and Southeast Asia. The genus is represented in the oceanic Pacific by six species: Three are endemic to Micronesian islands or archipelagos, two are endemic to island groups in French Polynesia, and G. stairi is endemic to Samoa, Tonga, and Fiji. Some authors recognize two subspecies of the friendly ground-dove, one, slightly smaller, in the Samoan archipelago (G. s. stairi), and one in Tonga and Fiji (G. s. vitiensis), but because morphological differences between the two are minimal, we are not recognizing separate subspecies at this time.

In American Samoa, the friendly ground-dove has been found on the islands of Ofu and Olosega (Manua Group). Threats to this subspecies have not changed over the past year. Predation by nonnative species and natural catastrophes such as hurricanes are the primary threats to the subspecies. Of these, predation by nonnative species is thought to be occurring now and likely has been occurring for several decades. This predation may be an important impediment to increasing the population. Predation by introduced species has played a significant role in reducing, limiting, and extirpating populations of island birds, especially ground-nesters, in the Pacific and other locations worldwide. Nonnative predators known or thought to occur in the range of the friendly ground-dove in

American Samoa are feral cats (Felis catus), Polynesian rats (Rattus exulans), black rats (R. rattus), and Norway rats (R. norvegicus).

In January 2004 and February of 2005, hurricanes virtually destroyed the habitat of G. stairi in an area on Olosega Island where the species had been most frequently recorded. Although this species has coexisted with severe storms for millennia, this example illustrates the potential for natural disturbance to exacerbate the effect of anthropogenic disturbance on small populations. Consistent monitoring using a variety of methods over the last 5 years yielded few observations of this taxon in American Samoa. The total population size is poorly known, but is unlikely to number more than a few hundred pairs. The past five years or so of surveys have revealed no change in the relative abundance of this taxon in American Samoa. The distribution of the friendly ground-dove is limited to steep, forested slopes with an open understory and a substrate of fine scree or exposed earth; this habitat is not common in American Samoa. The threats are ongoing and, therefore imminent and the magnitude is moderate because the relative abundance has remained the same for several years. Thus, we assign this subspecies an LPN of 9.

Streaked horned lark (Eremophila alpestris strigata) The following summary is based on information contained in our files. No new information was provided in the petition we received on December 11, 2002. The streaked horned lark occurs in Washington and Oregon, and is thought to be extirpated in British Columbia, Canada. The streaked horned lark nests on the ground in sparsely vegetated sites in short-grass dominated habitats, such as native prairies, coastal dunes, fallow agricultural fields, lightly- to moderately-grazed pastures, seasonal mudflats, airports, and dredged-material formed islands in the Columbia River. In Washington, surveys show that there are approximately 330 remaining breeding birds. In Oregon, the breeding population is estimated to be approximately 400 birds.

The streaked horned lark's breeding habitat continues to be threatened by loss and degradation due to conversion of native grasslands to other uses (such as agriculture, homes, recreational areas, and industry), encroachment of woody vegetation, and invasion of nonnative plant species (e.g., Scot's broom, sod-forming grasses, and beachgrasses). Native prairies have been nearly eliminated throughout the range of the species. Less than 1 to 3 percent of the native grassland and savanna are estimated to remain. Those that remain have been invaded by nonnative sod-forming grasses. Coastal nesting areas have suffered the same fate. A recent purchase of prairie lands in Washington has secured habitat that would have been developed, but its status as suitable lark nesting habitat is unknown.

Wintering habitats are seemingly few, and susceptible to unpredictable conversion to unsuitable over-wintering habitat. Where larks inhabit human-created habitats similar in structure to native prairies (such as airports, military reservations, agricultural fields, and dredge-formed islands), or where they occur adjacent to human habitation, they are subjected to a variety of unintentional human disturbances such as mowing, recreational and military activities, plowing, flooding, and dredge spoil dumping during the nesting season, as well as intentional disturbances such as at the McChord AFB where falcons and dogs are used to haze the birds in order to avoid aircraft collisions. In some areas, landowners have taken steps to improve streaked horned lark nesting habitat.

The magnitude of the threats is high due to small populations with low genetic diversity, and patchy and isolated habitats in areas desirable for development,

many of which remain unsecured. The threat of invasive plant species is high and constant, aside from a few restoration sites. The numbers of individuals are low and the numbers of populations are few. Over-wintering birds are concentrated in larger flocks and subject to unpredictable wintering habitat loss (especially in the Willamette Valley, Oregon), potentially affecting a large portion of the population at one time. In Washington, known populations occur on airports and military bases (6 of 13 sites), coastal beaches (4 of 13 sites), and Columbia River islands (3 of 13 sites), where management, training activities, recreation, and dredge spoil dumping continue to negatively impact streaked horned lark breeding and wintering. In Oregon, breeding and wintering sites occur on Columbia River islands, in cultivated grass fields, grazed pastures, fallow fields, roadside shoulders, Christmas tree farms, and wetland mudflats. Such areas continue to be subject to negative impacts such as dredge spoil dumping, development, plowing, mowing, pesticide and herbicide applications, trampling, vehicle traffic, and recreation. Many of these Oregon sites are ephemeral in nature, with the quality of habitat changing from year to year from suitable to unsuitable. Thus the numbers of sites also changes year to year.

The threats are imminent, due to the continued loss of suitable lark habitat, risks to the wintering populations, plans for development on and adjacent to several of its nesting areas, predation, use of falcons and dogs to haze breeding birds at McChord AFB, planned and/or continued expansions of the McChord AFB West Ramp and Olympia Airport, and human disturbance, including annual Air Force military training and fire-bombing on top of lark nesting habitat. We continue to assign an LPN of 3 to this subspecies.

Red knot (Calidris canutus rufa) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files and information provided by petitioners. Four petitions to emergency list the red knot have been received: one on August 9, 2004, two others on August 5, 2005, and the most recent on February 27, 2008.

Kittlitz's murrelet (Brachyramphus brevirostris) The following summary is based on information contained in our files and the petition we received on May 9, 2001. Kittlitz's murrelet is a small diving seabird whose entire North American population, and most of the world's population, inhabits Alaskan coastal waters discontinuously from Point Lay south to northern portions of Southeast Alaska. Kittlitz's murrelets are associated with tidewater glaciers. The current population estimate for Kittlitz's murrelets in Alaska is approximately 16,700 birds, a decline of 74 to 84 percent during the past 10 to 20 years. New survey information supports and strengthens the negative population trend estimates that have been previously reported.

Threats to Kittlitz's murrelets include large-scale processes such as global climate change and marine climate regime shift. These large-scale processes may influence Kittlitz's murrelet survival and reproduction. Glacial retreat, a global phenomenon that affects many of the glaciers with which Kittlitz's murrelets are associated, is associated with changing forage fish availability and may result in increased predation. Other ongoing threats include oil spills, bycatch in commercial gillnet fisheries, and disturbance by tour boats. Kittlitz's murrelets are believed to have been seriously affected by the Exxon Valdez oil spill in Prince William Sound in 1989. Catastrophic events such as oil spills could have a significant negative effect on the population of this already diminished species. Susceptibility to mortality as bycatch in commercial fishing could be a significant factor in their population decline; Kittlitz's murrelets are caught in gill nets in numbers disproportionate to their density. Tour boat visitation to glacial fjords is a growing industry, and this activity

may increasingly disrupt Kittlitz's murrelet feeding behavior; tour boats may provide artificial perch sites for avian predators.

Based on the observed population trajectory and the severity of present threats (rapid glacial retreat, acute and chronic oil spills, commercial gillnet fishing, and human disturbance from tour boats), the threats to this species are high in magnitude and imminent. Therefore, we assigned an LPN of 2 to this species.

Xantus's murrelet (Synthliboramphus hypoleucus) The following summary is based on information contained in our files and the petition we received on April 16, 2002. The Xantus's murrelet is a small seabird in the Alcid family that occurs along the west coast of North America in the United States and Mexico. The species has a limited breeding distribution, only nesting on the Channel Islands in southern California and on islands off the west coast of Baja California, Mexico. Although data on population trends are scarce, the population is suspected to have declined greatly over the last century, mainly due to introduced predators such as rats (Rattus sp.) and feral cats (Felis catus) to nesting islands, with extirpations on three islands in Mexico. A dramatic decline (up to 70 percent) from 1977 to 1991 was detected at the largest nesting colony in southern California, possibly due to high levels of predation on eggs by the endemic deer mouse (Peromyscus maniculatus elusus). Identified threats include introduced predators at nesting colonies, oil spills and oil pollution, reduced prey availability, human disturbance, and impacts related to artificial light pollution.

Although substantial declines in the Xantus's murrelet population likely occurred over the last century, some of the largest threats are being addressed, and, to some degree, ameliorated. Declines and extirpations at several nesting colonies were thought to have been caused by nonnative predators, which have been removed from many of the islands where they once occurred. Most notably, since 1994, Island Conservation and Ecology Group has systematically removed rats, cats, and dogs from every murrelet nesting colony in Mexico, with the exception of cats and dogs on Guadalupe Island. In 2002, rats were eradicated from Anacapa Island in southern California, which has resulted in improvements in reproductive success at that island. In southern California, there are also plans to remove rats from San Miguel Island, and to restore nesting habitat on Santa Barbara Island through the Montrose Settlements Restoration Project, which may benefit the Xantus's murrelet population at those islands.

Artificial lighting from squid fishing and other vessels, or lights on islands, remains a potential threat to the species. Bright lights make Xantus's murrelets more susceptible to predation, and they can also become disoriented and exhausted from continual attraction to bright lights. Chicks can become disoriented and separated from their parents at sea, which could result in death of the dependent chicks. High-wattage lights on commercial market squid (Loligo opalescens) fishing vessels used at night to attract squid to the surface of the water in the Channel Islands was the suspected cause of unusually high predation on Xantus's murrelets by western gulls and barn owls at Santa Barbara Island in 1999. To address this threat, in 2000, the California Fish and Game Commission required light shields and a limit of 30,000 watts per boat; it is unknown if this is sufficient to reduce impacts. Squid fishing has not occurred at a particularly noticeable level near any of the colonies in the Channel Islands since 1999; however, this remains a potential future threat.

A proposal to build a liquid natural gas (LNG) facility 600 meters (1,969 feet) off the Coronados Islands in Baja California, Mexico, was considered a potential

major threat to the species. This island contains one of the largest nesting populations of Xantus's murrelets in the world. Potential impacts of this facility to the nesting colony included bright lights at night from the facility and visiting tanker vessels, noise from the facility or from helicopters visiting the facility, and the threat of oil spills associated with visiting tanker vessels. However, Chevron announced in March 2007 that they have abandoned plans to develop this facility and withdrew their permits. There are three proposed LNG facilities in the Channel Islands; however, these are early in the complex and long-term planning processes, and it is possible that none of these facilities will be built. In addition, none of them are directly adjacent to nesting colonies, where their impacts would be expected to be more significant.

The LNG facility off the Coronados Islands was considered to be an imminent threat of high magnitude, which resulted in a previous LPN of 2. The remaining threats to the species are of high magnitude since they have the potential to result in mortality for a large portion of the species' range. However, the threats are nonimminent since they are not currently occurring at most of the murrelet nesting sites. Therefore, we retained an LPN of 5 for this species.

Lesser prairie-chicken (Tympanuchus pallidicinctus) - See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files and the petition received on October 5, 1995. Additional information can be found in the 12month finding published on June 7, 1998 (63 FR 31400).

Greater sage-grouse, Columbia Basin DPS (Centrocercus urophasianus) For the reasons discussed below, we have not updated our finding with regard to the Columbia Basin DPS of the western subspecies of the greater sage-grouse (C. u. phaios) in this notice. The following summary is based on information in our files and a petition, dated May 14, 1999, requesting the listing of the Washington population of western sage grouse. On May 7, 2001, we concluded that listing the Columbia Basin DPS of western sage grouse was warranted but precluded by higher priority listing actions (66 FR 22984); this DPS was historically found in northern Oregon and central Washington. The Service subsequently received two petitions requesting the listing of the entire ranges of what the petitions called the western and eastern subspecies of greater sage-grouse, dated January 24 and July 3, 2002, respectively. The petition involving the western sage-grouse requested listing the subspecies in northern California through Oregon and Washington (including the Columbia Basin DPS, for which we had already concluded listing was warranted but precluded), as well as any western sage-grouse still occurring in parts of Idaho.

In evaluating the two petitions, we communicated with recognized sage-grouse experts, and discovered there was disagreement as to the taxonomic validity of these subspecies of the greater sage-grouse. Due to this disagreement in the scientific community, the we evaluated the available information and concluded that the eastern and western subspecies designations for greater sage-grouse are inappropriate given current taxonomic standards, which also meant they were not listable entities under the Act. We also concluded that the eastern and western populations did not constitute DPSs of the greater sage-grouse. Therefore, we published findings that the petitions did not present substantial information indicating that what the petitions had identified as the western or eastern subspecies may be warranted for listing under the Act (68 FR 6500 and 69 FR 933, respectively). The Institute for Wildlife Protection filed a court complaint, dated June 6, 2003, challenging the merits of our 90day finding on the petition to list the western subspecies. On August 10, 2004, a U.S. District Court judge

ruled in favor of the Service and dismissed the plaintiff's case. An appeal, dated November 24, 2004, was filed by the Institute for Wildlife Protection. On March 3, 2006, the 9th Circuit Court of Appeals remanded the 90day finding to the Service on the grounds that we did not provide an adequate basis for concluding that the petition failed to present substantial information indicating the western sage-grouse may be a valid subspecies. The Court did, however, uphold our conclusion that the petitioned entity (western sage-grouse) does not constitute a DPS of the greater sage-grouse. On April 29, 2008, we published a substantial 90day petition finding which concluded that the petition presented substantial information indicating that listing the western subspecies of the greater sage-grouse may be warranted, announced that we were initiating a status review, and requested relevant information from the public (73 FR 23170). We will publish an updated finding addressing the Columbia Basin DPS in the Federal Register after completing our status review and 12month petition finding regarding the petition to list the western subspecies of the greater sage-grouse.

Band-rumped storm-petrel, Hawaii DPS (Oceanodroma castro) The following summary is based on information contained in our files and the petition we received on May 8, 1989. No new information was provided in the second petition received on May 11, 2004. The band-rumped storm-petrel is a small seabird that is found in several areas of the subtropical Pacific and Atlantic Oceans. In the Pacific, there are three widely separated breeding populations one in Japan, one in Hawaii, and one in the Galapagos. Populations in Japan and the Galapagos are comparatively large and number in the thousands, while the Hawaiian birds represent a small, remnant population of possibly only a few hundred pairs. Band-rumped storm-petrels are most commonly found in close proximity to breeding islands. The three populations in the Pacific are separated by long distances across the ocean where birds are not found. Extensive at-sea surveys of the Pacific have revealed a broad gap in distribution of the band-rumped storm-petrel to the east and west of the Hawaiian Islands, indicating the distribution of birds in the central Pacific around Hawaii is disjunct from other nesting areas. The available information indicates that distinct populations of band-rumped storm-petrels are definable and that the Hawaiian population is distinct based on geographic and distributional isolation from other band-rumped storm-petrel populations in Japan, the Galapagos, and the Atlantic Ocean. A population also can be considered discrete if it is delimited by international boundaries across which exist differences in management control of the species. The Hawaiian population of the band-rumped storm-petrel is the only population within U.S. borders or under U.S. jurisdiction. Loss of the Hawaiian population would cause a significant gap in the distribution of the band-rumped storm-petrel in the Pacific, and could result in the complete isolation of the Galapagos and Japan populations without even occasional genetic exchanges. Therefore, the population is both discrete and significant, and is therefore a DPS.

The band-rumped storm-petrel probably was common on all of the main Hawaiian Islands when Polynesians arrived about 1,500 years ago, based on storm-petrel bones found in middens on the island of Hawaii and in excavation sites on Oahu and Molokai. Nesting colonies of this species in the Hawaiian Islands currently are restricted to remote cliffs on Kauai and Lehua Island and high-elevation lava fields on Hawaii. Vocalizations of the species were heard in Haleakala Crater on Maui as recently as 2006; however, no nesting sites have been located on the island to date. The significant reduction in numbers and range of the band-rumped storm-petrel is due primarily to predation by nonnative predators introduced by humans, including the domestic cat (Felis catus), small Indian mongoose (Herpestes auropunctatus), common barn owl (Tyto alba), black rat (R.

rattus), Polynesian rat (Rattus exulans), and Norway rat (R. norvegicus), which occur throughout the main Hawaiian Islands, with the exception of the mongoose, which is not established on Kauai. Attraction of fledglings to artificial lights, which disrupts their night-time navigation, resulting in collisions with building and other objects, and collisions with artificial structures such as communication towers and utility lines are also threats. Erosion of nest sites caused by the actions of nonnative ungulates is a potential threat in some locations. Efforts are underway in some areas to reduce light pollution and mitigate the threat of collisions, but there are no large-scale efforts to control nonnative predators in the Hawaiian Islands. The threats are imminent because they are ongoing, and they are of a high magnitude because they can significantly affect the survival of this DPS. Therefore, we assign this distinct population segment an LPN of 3.

Elfin-woods warbler (Dendroica angelae) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The elfin woods warbler, is a small entirely black and white warbler, and was at first thought to occur only in the high elevation dwarf or elfin forests of Puerto Rico, but it has since been found at lower elevations including shade coffee plantations and secondary forests. The elfin woods warbler has been documented from four locations in Puerto Rico: Luquillo Mountains, Sierra de Cayey, and the Commonwealth forests of Maricao and Toro Negro. However, it has not been recorded again in Toro Negro or Cayey, since Hurricane Hugo in 1989. In 2003 and 2004, surveys for the elfin-woods warbler in the Carite Commonwealth Forest, Toro Negro Forest, Guilarte Forest, Bosque del Pueblo, Maricao Forest and the Caribbean National Forest, only detected the species in the latter two areas. In the Maricao Commonwealth Forest, 778 elfin woods warblers were recorded, and in the Caribbean National Forest, 196 elfin-woods warblers were recorded.

Habitat destruction from expansion of public facilities within the forests, potential construction of additional telecommunication towers and their maintenance, disruption of breeding activities from pedestrians and high human use areas, switching from shade to sun coffee plantations, timber management practices, potential predators, and catastrophic natural events such as hurricanes and forest fires, threaten this species. Although these threats are not imminent because most of the range of the elfins wood warbler is within protected lands, the magnitude of threat to this species is high, because the restricted distribution and low population numbers cause the threats to have a significant impact on the species' survival. Therefore, we assign a listing priority number of 5 to this species.

Reptiles

Sand dune lizard (Sceloporus arenicolus) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Eastern massasauga rattlesnake (Sistrurus catenatus catenatus) The following summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004. The eastern massasauga is one of three recognized subspecies of massasauga, a rattlesnake. It occupies shallow wetlands and adjacent upland habitat in portions of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, New York, Ohio, Pennsylvania, Wisconsin, and Ontario.

Although the current range of the eastern massasauga resembles the subspecies' historical range, the geographic distribution has been restricted by the loss of

the subspecies from much of the area within the boundaries of that range. Approximately 40 percent of the counties that were historically occupied by the eastern massasauga no longer support the subspecies. This subspecies is currently considered imperiled in every State and province which it occupies. Each State and Canadian province across the range of the eastern massasauga has lost more than 30 percent, and for the majority more than 50 percent, of their historical populations. Furthermore, fewer than 35 percent of the remaining populations are considered secure. Approximately 59 percent of the remaining eastern massasauga populations occur wholly or in part on public land, and Statewide and/or site-specific Candidate Conservation Agreements with Assurances (CCAAs) are currently being developed for many of these areas in Iowa, Illinois, Michigan, and Wisconsin. In 2004, a Candidate Conservation Agreement (CCA) with the Lake County Forest Preserve District in Illinois was completed. In 2005, a CCA with the Forest Preserve District of Cook County in Illinois was completed. In 2006, a CCAA with the Ohio Department of Natural Resources Division of Natural Areas and Preserves was completed for Rome State Nature Preserve in Ashtabula County. Populations expected to be under CCAs and CCAAs have a high likelihood of persisting and remaining viable. Other populations are likely to suffer additional losses in abundance and genetic diversity and some will likely be extirpated unless threats are removed in the near future. The primary threats to the eastern massasauga are habitat modification, habitat succession, incompatible land management practices, illegal collection for the pet trade, and human persecution. Because of the ongoing effort to protect the subspecies through CCAAs, the threats are moderate overall. Although the CCAAs have decreased the immediacy of some threats in some areas, the majority of the threats are ongoing or are in areas not covered by a CCAA. As a result, overall these threats remain an imminent threat to many remaining populations, particularly those inhabiting private lands. We have kept the LPN at 9 for this subspecies.

Black pine snake (Pituophis melanoleucus lodingi) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. There are historical records for the black pine snake from one parish in Louisiana, 14 counties in Mississippi, and 3 counties in Alabama west of the Mobile River Delta. Black pine snake surveys and trapping indicate that this species has been extirpated from Louisiana and from four counties in Mississippi. Moreover, the distribution of remaining populations has become highly restricted due to the destruction and fragmentation of the remaining longleaf pine habitat within the range of the subspecies. Most of the known Mississippi populations are concentrated on the DeSoto National Forest. Populations occurring on properties managed by State and other governmental agencies as gopher tortoise mitigation banks or wildlife sanctuaries represent the best opportunities for long-term survival of the subspecies in Alabama. Other factors affecting the black pine snake include vehicular mortality and low reproductive rates, which magnify the threats from destruction and fragmentation of longleaf pine habitat and increase the likelihood of local extinctions. Due to the imminent threats of high magnitude caused by the past destruction of most of the longleaf pine habitat of the black pine snake, and the continuing persistent degradation of what remains, we assigned an LPN of 3 to this subspecies.

Louisiana pine snake (Pituophis ruthveni) The following summary is based on information contained in our files and the petition we received on July 19, 2000. The Louisiana pine snake historically occurred in the fire-maintained longleaf pine ecosystem within west-central Louisiana and extreme east-central Texas. Most of the historical longleaf pine habitat of the Louisiana pine snake has been destroyed or degraded due to logging, fire suppression, roadways,

short-rotation silviculture, and grazing. In the absence of recurrent fire, suitable habitat conditions for the Louisiana pine snake and its primary prey, the Baird's pocket gopher (Geomys breviceps), are lost due to vegetative succession. The loss and fragmentation of the longleaf pine ecosystem has resulted in extant Louisiana pine snake populations that are isolated and small. Trapping and occurrence data indicate the Louisiana pine snake is currently restricted to seven disjunct populations; five of the populations occur on Federal lands and two occur mainly on private industrial timberlands. Current potentially occupied habitat in Louisiana and Texas is estimated to be approximately 163,000 acres, with 53 percent occurring on public lands and 47 percent in private ownership.

All remnant Louisiana pine snake populations have been affected by habitat loss and all require active habitat management. A Candidate Conservation Agreement (CCA) was completed in 2003 to maintain and enhance potentially occupied habitat on public lands, and to protect known Louisiana pine snake populations. On Federal lands, signatories of the Louisiana pine snake CCA currently conduct habitat management (i.e., prescribed burning and thinning) that is beneficial to the Louisiana pine snake. This proactive habitat management has likely slowed or reversed the rate of Louisiana pine snake habitat degradation on many portions of Federal lands. The largest extant Louisiana pine snake population exists on private industrial timberlands. Although two conservation areas are managed to benefit Louisiana pine snakes on this property, the majority of the intervening occupied habitat is threatened by land management activities (habitat conversion to short-rotation pine plantations) that decrease habitat quality.

Three of the remnant Louisiana pine snake populations may be vulnerable to decreased demographic viability or other factors associated with low population sizes and demographic isolation. Although these remnant Louisiana pine snake populations are intrinsically vulnerable and thus threatened by these factors, it is not known if they are presently actually facing these threats. Because all extant populations are currently isolated and fragmented by habitat loss in the matrix between populations, there is little potential for dispersal among remnant populations or for the natural re-colonization of vacant habitat patches. Thus, the loss of any remnant population is likely to be permanent. Other factors affecting the Louisiana pine snake throughout its range include low fecundity, which magnifies other threats and increases the likelihood of local extinctions, and vehicular mortality, which may significantly affect Louisiana pine snake populations.

While the extent of Louisiana pine snake habitat loss has been great in the past and much of the remaining habitat has been degraded, habitat loss does not represent an imminent threat, primarily because the rate of habitat loss appears to be declining on public lands. However, all populations require active habitat management, and the lack of adequate habitat remains a threat for several populations. The potential threats to a large percentage of extant Louisiana pine snake populations, coupled with the likely permanence of these effects and the species' low fecundity and low population sizes (based on capture rates and occurrence data), lead us to conclude that the threats have significant effect on the survival of the species and therefore remain high in magnitude. Thus, based on nonimminent, high-magnitude threats, we assign a listing priority number of 5 to this species.

Sonoyta mud turtle (Kinosternon sonoriense longifemorale) - The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Sonoyta mud turtle occurs in a spring and pond at Quitobaquito Springs on Organ Pipe Cactus

National Monument in Arizona, and in the Rio Sonoyta and Quitovac Spring of Sonora, Mexico. Loss and degradation of stream habitat from water diversion and groundwater pumping, along with its very limited distribution, is the primary threat to the Sonoyta mud turtle. Sonoyta mud turtles are highly aquatic and depend on permanent water for survival. The area of southwest Arizona and northern Sonora where the Sonoyta mud turtle occurs is one of the driest regions of the southwest. Due to continuing drought, irrigated agriculture, and development in the region, surface water in the Rio Sonoyta can be expected to dwindle further and therefore have a significant impact on the survival of this subspecies which may also be vulnerable to aerial spraying of pesticides on nearby agricultural fields. We retained an LPN of 3 for this subspecies because threats are of a high magnitude and continue to date, and therefore, are imminent.

Amphibians

Columbia spotted frog, Great Basin DPS (Rana luteiventris) The following summary is based on information contained in our files and the petition we received on May 1, 1989. Currently, Columbia spotted frogs appear to be widely distributed throughout southwestern Idaho, eastern Oregon, northeastern and central Nevada but local populations within this general area appear to be small and isolated from each other. Recent work by researchers in Idaho and Nevada has documented the loss of historically known sites, reduced numbers of individuals within local populations, and declines in the reproduction of those individuals. Small, highly fragmented populations, characteristic of the majority of existing populations of Columbia spotted frogs in the Great Basin, are highly susceptible to extinction processes. The populations within the Columbia Basin are discrete and significant, and thus are a DPS.

Water development, improper grazing, mining activities and nonnative species have and continue to contribute to the degradation and fragmentation of Columbia spotted frog habitat. Emerging fungal diseases such as chytridiomycosis and the spread of parasites are contributing factors to Columbia spotted frog population declines throughout portions of its range. A 10year Conservation Agreement/Strategy was signed in September 2003 for both the Northeast and the Toiyabe subpopulations in Nevada. The goals of the Conservation Agreements are to reduce threats to Columbia spotted frogs and their habitat to the extent necessary to prevent populations from becoming extirpated throughout all or a portion of their historic range and to maintain, enhance, and restore a sufficient number of populations of Columbia spotted frogs and their habitat to ensure their continued existence throughout their historic range. Additionally, a Candidate Conservation Agreement with Assurances was completed in 2006 for the Owyhee subpopulation at Sam Noble Springs, Idaho. While some threats (habitat modification and fragmentation, nonnative species, inadequate regulatory mechanisms, and climate change) to the species and its habitat occur rangewide but at various intensities, other threats (disease and mining) only impact local populations; overall, the magnitude of the threats is moderate. Based on ongoing, and therefore, imminent threats of moderate magnitude, we assigned a listing priority number of 9 to this Distinct Population Segment of the Columbia spotted frog.

Mountain yellow-legged frog, Sierra Nevada DPS (Rana muscosa) - The following summary is based on information contained in our files and the petition received on February 8, 2000. Also see our 12month petition finding published on January 16, 2003 (68 FR 2283) and our amended 12month petition finding published on June 25, 2007 (72 FR 34657). The mountain yellow-legged frog inhabits the high elevation lakes, ponds, and streams in the Sierra Nevada Mountains of

California, from near 4,500 feet (ft) (1,370 meters (m)) to 12,000 ft (3,650 m). The distribution of the mountain yellow-legged frog is from Butte and Plumas Counties in the north to Tulare and Inyo Counties in the south. The population in the Sierra Nevada is discrete and significant and is therefore a DPS. A separate population in southern California is already listed as endangered (67 FR 44382).

Predation by introduced trout is the best-documented cause of the decline of the Sierra Nevada mountain yellow-legged frog, because it has been repeatedly observed that nonnative fishes and mountain yellow-legged frogs rarely co-exist. Mountain yellow-legged frogs and trout (native and nonnative) do co-occur at some sites, but these co-occurrences probably are mountain yellow-legged frog populations with negative population growth rates in the absence of immigration. To help reverse the decline of the mountain yellow-legged frog, the Sequoia and Kings Canyon National Parks have been removing introduced trout since 2001. Over 18,000 introduced trout have been removed from 11 lakes since the project started in 2001. The lakes are completely- to mostly fish-free and substantial mountain yellow-legged frog population increases have resulted. The California Department of Fish and Game (CDFG) has also removed or is in the process of removing nonnative trout from a total of between 10 and 20 water bodies in the Inyo, Humboldt-Toiyabe, Sierra, and El Dorado National Forests. In the El Dorado National Forest golden trout were removed from Leland Lakes, and attempts have been made to remove trout from two sites near Gertrude Lake and a tributary of Cole Creek; no data showing increase in mountain yellow-legged frogs at these sites was available.

In California, chytridiomycosis, more commonly known as chytrid fungus, has been detected in many amphibian species, including the mountain yellow-legged frog within the Sierra Nevada. Recent research has shown that this pathogenic fungus is widely distributed throughout the Sierra Nevada, and that infected mountain yellow-legged frogs die soon after metamorphosis. Several infected and uninfected populations were monitored in Sequoia and Kings Canyon National Parks over multiple years, documenting dramatic declines and extirpations in infected but not in uninfected populations. In the summer of 2005, 39 of 43 populations assayed in Yosemite National Park were positive for chytrid fungus.

The current distribution of the Sierra Nevada mountain yellow-legged frog is restricted primarily to publicly managed lands at high elevations, including streams, lakes, ponds, and meadow wetlands located on national forests, including wilderness and non-wilderness on the forests, and national parks. In several areas where detailed studies of the effects of chytrid fungus on the mountain yellow-legged frog are ongoing, substantial declines have been observed over the past several years. For example, in 2007 surveys in Yosemite National Park, mountain yellow-legged frogs were not detectable at 37 percent of 285 sites where they had been observed in 2000-2002; in 2005 in Sequoia and Kings Canyon National Parks, mountain yellow-legged frogs were not detected at 54 percent of sites where they had been recorded 3-8 years earlier. A compounding effect of disease-caused extinctions of mountain yellow-legged frogs is that recolonization may never occur, because streams connecting extirpated sites to extant populations now contain introduced fishes, which act as barriers to frog movement within metapopulations. The most recent assessment of the species status in the Sierra Nevada indicates that mountain-yellow legged frogs occur at less than 8 percent of the sites from which they were historically observed. A group of prominent scientists further suggest a 10 percent decline per year in the number of remaining Rana mucosa populations. Based on threats that are imminent (because they are ongoing) and high-magnitude (because they affect the survival of the DPS rangewide), we continue to assign the population of mountain

yellow-legged frog in the Sierra Nevada an LPN of 3.

Oregon spotted frog (Rana pretiosa) - The following summary is based on information contained in our files and the petition we received on May 4, 1989. Historically, the Oregon spotted frog ranged from British Columbia to the Pit River drainage in northeastern California. Based on surveys of historical sites, the Oregon spotted frog is now absent from at least 76 percent of its former range. The majority of the remaining Oregon spotted frog populations are small and isolated.

The threats to the species' habitat include development, livestock grazing, introduction of nonnative plant species, vegetation succession, changes in hydrology due to construction of dams and alterations to seasonal flooding, lack of management of exotic vegetation predators, and poor water quality. Additional threats to the species are predation by nonnative fish and introduced bullfrogs; competition with bullfrogs for habitat; and diseases, such as oomycete water mold Saprolegnia and chytrid fungus infections. The magnitude of threat is high for this species because this wide range of threats to both individuals and their habitats could seriously reduce or eliminate any of these isolated populations and further reduce the species' range and potential survival. Habitat restoration and management actions have not prevented a decline in the reproductive rates in some populations. The threats are imminent because each population is faced with multiple ongoing and potential threats as identified above. Therefore, we retain an LPN of 2 for the Oregon spotted frog.

Relict leopard frog (Rana onca) The following summary is based on information contained in our files and the petition we received on May 9, 2002. Relict leopard frogs are currently known to occur only in two general areas in Nevada: near the Overton Arm area of Lake Mead, and Black Canyon below Lake Mead. These two areas comprise a small fraction of the historical distribution of the species, which included springs, streams, and wetlands within the Virgin River drainage downstream from the vicinity of Hurricane, Utah; along the Muddy River, Nevada; and along the Colorado River from its confluence with the Virgin River downstream to Black Canyon below Lake Mead, Nevada and Arizona. Suggested factors contributing to the decline of the species include alteration of aquatic habitat due to agriculture and water development, including regulation of the Colorado River, and the introduction of exotic aquatic species which potentially prey on the relict leopard frog and may compete for food and cover sites. In 2005, the National Park Service, in cooperation with the Service and various other Federal, State, and local partners, developed a conservation agreement and strategy which is intended to improve the status of the species through prescribed management actions and protection. Conservation actions identified for implementation in the agreement and strategy include captive rearing tadpoles for translocation and refugium populations, habitat and natural history studies, habitat enhancement, population and habitat monitoring, and translocation. Conservation efforts are proceeding under the agreement, but, additional time is needed to determine whether the agreement will be effective in eliminating or reducing the threats to the point that the relict leopard frog can be removed from candidate status. However, because of these conservation efforts the magnitude of existing threats has been reduced to low to moderate. Most populations of the relict leopard frog face one or more threats which may be long-term in timing and duration. However, no populations are currently threatened by disease or any proposed human activity that would reduce the numbers and distribution of any given population. Since the threats are not currently occurring, they are nonimminent. We assigned an LPN of 11 to this species.

Ozark hellbender (Cryptobranchus alleganiensis bishopi) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Austin blind salamander (Eurycea waterlooensis) Austin blind salamander (Eurycea waterlooensis) The following summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004. The Austin blind salamander is known to occur in and around three of the four spring sites that comprise the Barton Springs complex in the City of Austin, Travis County, Texas. Primary threats to this species are degradation of water quality due to expanding urbanization. The Austin blind salamander depends on a constant supply of clean water in the Edwards Aquifer discharging from Barton Springs for its survival. Urbanization dramatically alters the normal hydrologic regime and water quality of an area. Increased impervious cover caused by development increases the quantity and velocity of runoff that leads to erosion and greater pollution transport. Pollutants and contaminants that enter the Edwards Aquifer are discharged in salamander habitat at Barton Springs and have serious morphological and physiological effects to the salamander.

The Texas Commission on Environmental Quality adopted the Edwards Rules in 1995 and 1997, which require a number of water quality protection measures for new development occurring in the recharge and contributing zones of the Edwards Aquifer. However, Chapter 245 of the Texas Local Government Code permits grandfathering of state regulations. Grandfathering allows developments to be exempted from any new local or state requirements for water quality controls and impervious cover limits if the developments were planned prior to the implementation of such regulations. As a result of the grandfathering law, very few developments have followed these ordinances. New developments are still obligated to comply with regulations that were applicable at the time when project applications for development were first filed. In addition, it is significant that even if they were followed with every new development, these ordinances do not span the entire watershed for Barton Springs. Consequently, development occurring outside these jurisdictions can have negative consequences on water quality and thus have an impact on the species.

Water quality impacts threaten the continued existence of the Austin blind salamander by altering physical aquatic habitats and the food sources of the salamander. We consider the threats to be imminent because urbanization is ongoing and continues to expand over the Barton Springs Segment of the Edwards Aquifer and water quality continues to degrade. While the City of Austin and many other partners are actively working on conservation of the Barton Springs salamander, and the Austin blind salamander could benefit from all of the ongoing conservation actions that are being conducted for the Barton Springs salamander, these efforts have not yet been successful in improving water quality. In addition, the existence of the species continues to be threatened by hazardous chemical spills within the Barton Springs Segment of the Edwards Aquifer, which could result in direct mortality. Because the Austin blind salamander is known from only three clustered spring sites and must rely on clear, clean spring discharges from the Edwards Aquifer for its survival, degraded water quality poses a threat to the entire population, and is therefore a highmagnitude threat. Thus, we retain an LPN of 2 for this species.

Georgetown salamander (Eurycea naufragia) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004.

Salado salamander (Eurycea chisholmensis) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Salado salamander is historically known from two spring sites, Big Boiling Springs and Robertson Springs, near Salado, Bell County, Texas. We have received only one anecdotal report of a salamander sighting in Big Boiling Springs in 2008; prior to that, the salamander had not been sighted there since 1991. Robertson Springs are on private land and access to the site has not been granted. The last survey at Robertson Springs was in the early 1990s.

Primary threats to this species are habitat modification and degradation of water quality due to expanding urbanization. The Salado salamander depends on a constant supply of clean water from the Northern Segment of the Edwards Aquifer for its survival. Pollutants and contaminants that enter the Edwards Aquifer discharge in salamander habitat and have morphological and physiological effects on the salamander. We do not know how likely spills are to occur within the contributing watersheds of the springs that support this species. However, several groundwater contamination incidents have occurred within Salado salamander habitat in recent years. The salamander is reasonably expected to be vulnerable to catastrophic hazardous materials spills, groundwater contamination from the Northern Segment of the Edwards Aquifer, and impacts to its surface habitat. In addition, because Big Boiling Springs is located near Interstate 35 and in the center of the city, increasing traffic and urbanization is likely to increase rather than decrease the threats of contamination from spills, higher levels of impervious cover, and subsequent impacts to groundwater. These threats significantly affect the survival of this species, and groundwater contamination and impact to surface habitat are ongoing. Moreover, we do not have information that the magnitude or imminence of the threats to the species has changed since our previous assessment when we concluded there are ongoing, and therefore, imminent threats of a high magnitude. Therefore we continue to assign an LPN of 2 to this species.

Yosemite toad (Bufo canorus) The following summary is based on information contained in our files and the petition we received on April 3, 2000. See also our 12month petition finding published on December 10, 2002 (67 FR 75834). Yosemite toads are most likely to be found in areas with thick meadow vegetation or patches of low willows near or in water, and use rodent burrows for overwintering and temporary refuge during the summer. Breeding habitat includes the edges of wet meadows, slow flowing streams, shallow ponds and shallow areas of lakes. The historic range of Yosemite toads in the Sierra Nevada occurs from the Blue Lakes region north of Ebbetts Pass (Alpine County) to south of Kaiser Pass in the Evolution Lake/Darwin Canyon area (Fresno County). The historic elevational range of Yosemite toads is 1,460 to 3,630 m (4,790 to 11,910 ft).

The threats currently facing the Yosemite toad include cattle grazing, timber harvesting, recreation, disease, and climate change. Inappropriate grazing has shown to cause loss in vegetative cover and destruction of peat layers in meadows, which lowers the groundwater table and summer flows. This may increase the stranding and mortality of tadpoles, or make these areas completely unsuitable for Yosemite toads (Martin 2002). Grazing can also degrade or destroy moist upland areas the Yosemite toad use as non-breeding habitat and it can collapse rodent burrows the Yosemite toads use as cover and hibernation sites. Timber harvesting and associated road development could severely alter the terrestrial environment and result in the reduction and occasional extirpation of amphibian populations in the Sierra Nevada. These habitat gaps may act as dispersal barriers and contribute to the fragmentation of Yosemite toad habitat and populations. Trails (foot, horse, bicycle, or off-highway motor vehicle)

compact soil in riparian habitat, which increases erosion, displaces vegetation, and can lower the water table. Trampling or the collapsing of rodent burrows by recreationists, pets, and vehicles could lead to direct mortality of all life stages of the Yosemite toad and disrupt their behavior. Various diseases have been confirmed in Yosemite toads. Mass die-offs of amphibians have been attributed to: chytrid fungal infections of metamorphs and adults; Saprolegnia fungal infections of eggs; iridovirus infection of larvae, metamorphs, or adults; and bacterial infections. However, recent surveys in Yosemite National Park have found that the park populations are not currently infected with chytrid fungus. Yosemite toads probably are exposed to a variety of pesticides and other chemicals throughout their range. Environmental contaminants could negatively affect the species by causing direct mortality; suppressing the immune system; disrupting breeding behavior, fertilization, growth or development of young; and disrupting the ability to avoid predation. There is no indication that any of these threats in ongoing or planned and the threats are therefore nonimminent. In addition, since there are a number of substantial populations and these threats tend to have localized effects, the threats are moderate to low in magnitude. We therefore retained an LPN of 11 for the Yosemite toad.

Black Warrior waterdog (Necturus alabamensis) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Black Warrior waterdog is a salamander that inhabits streams above the Fall Line within the Black Warrior River Basin in Alabama. There is very little specific locality information available on the historical distribution of the Black Warrior waterdog since little attention was given to this species between its description in 1937 and the 1980s. At that time, there were a total of only 11 known historical records from 4 Alabama counties. Two of these sites have now been inundated by impoundments. Extensive survey work was conducted in the 1990s to look for additional populations. Currently, the species is known from 14 sites in 5 counties.

Water-quality degradation is the biggest threat to the continued existence of the Black Warrior waterdog. Most streams that have been surveyed for the waterdog showed evidence of pollution and many appeared biologically depauperate. Sources of point and nonpoint pollution in the Black Warrior River Basin have been numerous and widespread. Pollution is generated from inadequately treated effluent from industrial plants, sanitary landfills, sewage treatment plants, poultry operations, and cattle feedlots. Surface mining represents another threat to the biological integrity of waterdog habitat. Runoff from old, abandoned coal mines generates pollution through acidification, increased mineralization, and sediment loading. The North River, Locust Fork, and Mulberry Fork, all streams that this species inhabits, are on the Environmental Protection Agency's list of impaired waters. An additional threat to the Black Warrior waterdog is the creation of large impoundments that have flooded thousands of square hectares (acres) of its habitat. These impoundments are likely marginal or unsuitable habitat for the salamander. While the water-quality threat is pervasive and problematic, the overall magnitude of the threat is moderate, as there has not been a steep rate of decline in the population of this species. Water quality degradation in the Black Warrior basin is ongoing; therefore, the threats are imminent. We assigned an LPN of 8 to this species.

Fishes

Headwater chub (Gila nigra) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files and the 12month finding published in the Federal Register on May 3, 2006 (71 FR

26007).

Arkansas darter (Etheostoma cragini) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Arkansas darter is a small fish in the perch family native to portions of the Arkansas River basin. The species' range includes sites in extreme northwestern Arkansas, southwestern Missouri, and northeastern Oklahoma, within the Neosho River watershed. It also occurs in a number of watersheds and isolated streams in eastern Colorado, south-central and southwestern Kansas, and the Cimarron watershed in northwest Oklahoma. The species is most often found in small spring-fed streams with sand substrate and aquatic vegetation. It appears stable at most sites where spring flows persist. It has declined in areas where spring flows have decreased or been eliminated. We estimate that currently there are approximately 135 locality occurrences of the Arkansas darter distributed across the 5 States; it was found at 29 of 67 sites sampled in 2005-2006. Threats to the species include stream dewatering resulting from groundwater pumping in the western portion of the species' range, and potential development pressures in portions of its eastern range. Spills and runoff from confined animal feeding operations also potentially affect the species range-wide. The magnitude of threats facing this species is moderate to low, given the number of different locations where the species occurs and the fact that no single threat or combination of threats is working to affect more than a portion of the wide-spread population occurrences. Overall, the threats are not imminent since groundwater pumping is declining and development, spills, runoff are not currently affecting the species rangewide. Thus, we are retaining an LPN of 11 for the Arkansas darter.

Cumberland darter (Etheostoma susanae) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Pearl darter (Percina aurora) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Little is known about the specific habitat requirements or natural history of the Pearl darter. Pearl darters have been collected from a variety of river/stream attributes, mainly over gravel bottom substrate. This species is historically known only from localized sites within the Pascagoula and Pearl River drainages in two states (Louisiana and Mississippi). Currently, the Pearl darter is considered extirpated from the Pearl River drainage and rare in the Pascagoula River drainage. Since 1983, the range of the Pearl darter has decreased by 55 percent.

Pearl darters are vulnerable to the cumulative impacts of a variety of non-point pollution sources, such as sedimentation and chemicals, and to more localized and concentrated pollution events. The potential of reduction of the flow rate for the Leaf and Pascagoula rivers may be significant if the Department of Energy's Strategic Petroleum Reserve project occurs by 2014. However, the only current threat to the species is believed to be the steady yet gradual change in river and tributary geomorphology and hydrology over time. The magnitude of this threat to Pearl darter is high because even a gradual change in hydrology can have a significant impact on the survival of the species' limited and disjunct populations. The immediacy of the threat is nonimminent, since no known confirmed projects are planned that would have a direct impact on the species, and the decline of water quality is slow and gradual. In addition, efforts are underway to improve habitat by reducing these threats and to increase and augment the numbers of Pearl darters by husbandry. Therefore, we assign this species an LPN of 5.

Rush darter (Etheostoma phytophilum) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Yellowcheek darter (Etheostoma moorei) The following summary is based on information from our files. No new information was provided in the petition we received on May 11, 2004. The yellowcheek darter is endemic to four headwater tributaries of the Little Red River in Arkansas. It is vulnerable to alterations in physical habitat characteristics such as the impoundment of Greers Ferry Reservoir, channel maintenance in the Archey Fork, increased sedimentation from eroding stream banks and poor riparian management, and illegal gravel mining. Factors affecting the remaining populations include loss of suitable breeding habitat, habitat and water quality degradation, population isolation due to stretches of unsuitable habitat between populations, and severe population declines exacerbated by stochastic drought conditions. A 2004-2005 threats assessment by Service personnel documented occurrences of the aforementioned activities (impoundment, channel maintenance, poor riparian management, illegal gravel mining) and found 52 sites on the Middle Fork, 28 sites on the South Fork, 8 sites on Archey Fork, and 1 site in the Turkey/Beech/Devils Fork system where those activities are potentially contributing to the decline of the species. Since the threats assessment was completed, natural gas exploration and development in the Fayetteville Shale formation in north central Arkansas has also become a sizeable threat in all watersheds. The Middle Fork was listed as an impaired waterbody by the Arkansas Department of Environmental Quality in 2004 due to excessive bacteria and low dissolved oxygen.

Recent studies have documented significant declines in the numbers (60,000 in 1981; 10,300 in 2000) of this fish in the remaining populations and further range restriction within the tributaries (130.4 to 65.0 stream km). As a result, yellowcheek darter numbers declined over a 20year period by 83 percent in both the Middle Fork and South Fork, and 60 percent in the Archey Fork, based on a 2000 status survey. No yellowcheek darters have been found in the Turkey Fork between 1999 and 2005; the species has apparently been extirpated in that reach. The threats are high in magnitude since they significantly affect the ability of this species to survive and they are not currently targeted by conservation actions. They are also imminent, because they are ongoing. Therefore, we assigned this species a listing priority number of 2.

Chucky madtom (Noturus crypticus) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Grotto sculpin (Cottus sp., sp. nov.) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Grotto sculpin, a small fish, is restricted to two karst areas (limestone regions characterized by sink holes, abrupt ridges, caves, and underground streams): the Central Perryville Karst and Mystery-Rimstone Karst in Perry County, southeast Missouri. Data supports the genetic distinctness of the grotto sculpin as a species, although it has not yet been formally described. Grotto sculpins have been documented in only 5 caves. The current overall range of the grotto sculpin has been estimated to encompass approximately 260 square kilometers (100 square miles).

The small population size and endemism of the grotto sculpin make it vulnerable to extinction due to genetic drift, inbreeding depression, and random or chance changes to the environment. The species' karst habitat is located down-gradient of the city of Perryville, Missouri, which poses a potential threat if contaminants from this urban area enter cave streams occupied by grotto sculpins. Various agricultural chemicals, such as ammonia, nitrite/nitrate,

chloride, and potassium have been detected at levels high enough to be detrimental to aquatic life within the Perryville Karst area. More than half of the sinkholes in Perry County contain anthropogenic refuse, ranging from household cleansers and sewage to used pesticide and herbicide containers. As a result, potential water contamination from various sources of point and non-point pollution poses a significant threat to the grotto sculpin. Of the 5 cave systems documented to have grotto sculpins, populations in one cave system were likely eliminated, presumably as the result of point-source pollution. When the cave was searched in the spring of 2000, a mass mortality of grotto sculpin was noted, and subsequent visits to the cave have failed to document a single live grotto sculpin. Thus, the species appears to have suffered a 20 percent decrease in the number of populations from the single event. Predatory fish such as common carp, fat-head minnow, yellow bullhead, green sunfish, bluegill, and channel catfish occur in all of the caves occupied by grotto sculpin. These predators may escape surface farm ponds that unexpectedly drain through sinkholes into the underground cave systems and enter grotto sculpin habitat. Although we do not have direct observations of these fish preying on grotto sculpins, it is highly likely that predation is occurring. No regulatory mechanisms are in place that would provide protection to the grotto sculpin. Ongoing threats from chemical contamination of the habitat of the grotto sculpin and competition from nonnative fish, combined with its low population numbers, increase the likelihood of extinction. Due to the high magnitude of ongoing, and thus imminent, threats we assigned this species an LPN of 2.

Sharpnose shiner (Notropis oxyrhynchus) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The sharpnose shiner is a small, slender minnow, endemic to the Brazos River Basin in Texas. Historically, the sharpnose shiner existed throughout the Brazos River and several of its major tributaries within the watershed. It has also been found in the Wichita River (within the Red River Basin) where it may have once naturally occurred but has since been extirpated. Current information indicates that the population within the Upper Brazos River drainage (upstream of Possum Kingdom Reservoir) is apparently stable, while the population within the Middle and Lower Brazos River Basins may only exist in remnant populations in areas of suitable habitat, which may no longer be viable, representing a reduction of approximately 68 percent of its historical range.

The most significant threat to the existence of the sharpnose shiner is potential reservoir development within its current range. Additional threats include irrigation and water diversion, sedimentation, desalination, industrial and municipal discharges, agricultural activities, in-stream sand and gravel mining, and the spread of invasive saltcedar. The current limited distribution of the sharpnose shiner within the Upper Brazos River Basin makes it vulnerable to catastrophic events such as the introduction of competitive species or prolonged drought. State law does not provide protection for the sharpnose shiner. The magnitude of threat is considered high, since the major threat of reservoir development within the current range of the species may render its remaining habitat unsuitable throughout its limited distribution. The immediacy of threat is nonimminent because the most significant threat major reservoir projects are not likely to occur in the near future, and there is potential for implementing other water supply options that could preclude reservoir development. For these reasons, we assigned an LPN of 5 to this species.

Smalleye shiner (Notropis buccula) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The smalleye shiner is a small, pallid

minnow endemic to the Brazos River Basin in Texas. The population of smalleye shiners within the Upper Brazos River drainage (upstream of Possum Kingdom Reservoir) is apparently stable. However, the shiner may be extirpated downstream from the reservoir, representing a reduction of approximately 54 percent of its historical range.

The most significant threat to the existence of the smalleye shiner is potential reservoir development within its current range. Additional threats include irrigation and water diversion, sedimentation, desalination, industrial and municipal discharges, agricultural activities, in-stream sand and gravel mining, and the spread of invasive saltcedar. The current limited distribution of the smalleye shiner within the Upper Brazos River Basin makes it vulnerable to catastrophic events such as the introduction of competitive species or prolonged drought. State law does not provide protection for the smalleye shiner. The magnitude of threat is considered high since the major threat of reservoir development within the current range may render its remaining habitat unsuitable throughout its limited distribution. The immediacy of threat is nonimminent because the most significant threat major reservoir projects are not likely to occur in the near future, and there is potential for implementing other water supply options that could preclude reservoir development. For these reasons, we assigned an LPN of 5 to this species.

Zuni bluehead sucker (Catostomus discobolus yarrowi) - The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The range of the Zuni bluehead sucker has been reduced by over 90%. The Zuni bluehead sucker currently occupies 9 river miles (15 kilometers) in 3 areas of New Mexico, and potentially occurs in 27 miles (43 kilometers) in the Kinlichee drainage of Arizona. However, the number of occupied miles in Arizona is unknown, and the genetic composition of these fish is still under investigation. Zuni bluehead sucker range reduction and fragmentation is caused by discontinuous surface water flow, introduced species, and habitat degradation from fine sediment deposition. Zuni bluehead sucker persist in very small creeks that are subject to very low flows and drying during periods of drought. Because of climate change (warmer air temperatures) stream flow is predicted to decrease in the Southwest, even if precipitation were to increase moderately. Warmer winter and spring temperatures cause an increased fraction of precipitation to fall as rain, resulting in a reduced snow pack, an earlier snow melt, and a longer dry season leading to decreased stream flow in the summer and a longer fire season. These changes would have a negative effect on Zuni bluehead sucker. Another major impact to populations of Zuni bluehead sucker was the application of fish toxicants through at least two dozen treatments in the Nutria and Pescado rivers between 1960 and 1975. Large numbers of Zuni bluehead suckers were killed during these treatments.

For several years, the New Mexico Department of Game and Fish has been the lead agency to develop a conservation plan for Zuni bluehead sucker. The Zuni Bluehead Sucker Recovery Plan was approved by the New Mexico State Game Commission during a State Game Commission meeting on December 15, 2004. The recovery plan recommends preservation and enhancement of extant populations and restoration of historical Zuni bluehead sucker populations. We believe the recovery actions prescribed by the State Recovery Plan will reduce and remove threats to this subspecies; however those actions will require further discussions and authorizations before they can be implemented. The ongoing threats including loss of habitat (loss of both historical and current habitat from beaver activity), degradation of remaining habitat (from nonnative species and land development), drought, fire, and climate change are high magnitude

because they significantly affect the survival of the subspecies. We therefore maintained the current LPN of 3 for this subspecies.

Clams

Texas hornshell (Popenaias popei) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004.

Fluted kidneyshell (Ptychobranchus subtentum) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The fluted kidneyshell is a freshwater mussel (Unionidae) endemic to the Cumberland and Tennessee River systems (Cumberlandian Region) in Alabama, Kentucky, Tennessee, and Virginia. It requires shoal habitats in free-flowing rivers to survive and successfully recruit new individuals into its populations.

This species has been extirpated from numerous regional streams and is no longer found in the State of Alabama. Habitat destruction and alteration (e.g., impoundments, sedimentation, and pollutants) are the chief factors that contributed to its decline. The fluted kidneyshell was historically known from at least 37 streams but is currently restricted to no more than 12 isolated populations. Current status information for most of the 12 populations deemed to be extant is available from recent periodic sampling efforts (sometimes annually) and other field studies, particularly in the upper Tennessee River system. Some populations in the Cumberland River system have had recent surveys as well (e.g., Wolf, Little Rivers; Little South Fork; Horse Lick, Buck Creeks). Populations in Buck Creek, Little South Fork, Horse Lick Creek, Powell River, and North Fork Holston River have clearly declined over the past two decades. Based on recent information, the overall population of the fluted kidneyshell is declining rangewide. At this time, the species remains in large numbers and is viable in just the Clinch River/Copper Creek, although smaller, viable populations remain (e.g., Wolf, Little, North Fork Holston Rivers; Rock Creek). Most other populations are of questionable or limited viability, with some on the verge of extirpation (e.g., Powell River; Little South Fork; Horse Lick, Buck, Indian Creeks). Newly reintroduced populations in the Nolichucky and Duck Rivers will hopefully begin to reverse the downward population trend of this species. The threats are high in magnitude, since the majority of populations of this species are severely affected by numerous threats (impoundments, sedimentation, small population size, isolation of populations, gravel mining, municipal pollutants, agricultural runoff, nutrient enrichment, and coal processing pollution) which result in mortality and/or reduced reproductive output. Since the threats are ongoing, they are imminent. We assigned an LPN of 2 to this mussel species.

Neosho mucket (Lampsilis rafinesqueana) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Neosho mucket is a freshwater mussel native to Arkansas, Kansas, Missouri, and Oklahoma. The species has been extirpated from approximately 62 percent (835 river miles) of its range, most in Kansas and Oklahoma. The Neosho mucket survives in four river drainages; however, only two of these, the Spring and Illinois Rivers, currently support relatively large populations.

Large portions of the historic range have been inundated by the construction of at least 11 dams. Channel instability downstream of these dams has further

reduced suitable habitat and mussel distribution. Range restriction and population declines have occurred due to habitat degradation attributed to impoundments, mining, sedimentation, and agricultural pollutants. Rapid development and urbanization in the Illinois River watershed will likely continue to increase sedimentation and eutrophication, but populations are currently stable in this river. The threats to the remaining extant populations include random catastrophic events (e.g., flood scour, drought, toxic spills), land use changes within the limited range, and genetic isolation and the deleterious effects of inbreeding. These threats have caused the species to be intrinsically vulnerable to extirpation. Although State regulations limit harvest of this species, there is little protection for habitat. The threats are high in magnitude as they occur and affect survival throughout the range of this species. While some of the threats are ongoing and thus, imminent (sedimentation, mining), others are nonimminent (habitat reduction and degradation from reservoir construction, contaminants, genetic isolation), but on the balance are nonimminent. Thus, we assigned a listing priority number of 5 to this species.

Alabama pearlshell (Margaritifera marrianae) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Alabama pearlshell (Margaritifera marrianae) inhabits shallow riffles and pool margins of small creeks and streams of southwest Alabama. Only three populations of Alabama pearlshell have been confirmed to survive during the past 15 years. One of the three populations has declined significantly over the past few years, apparently due to increased sedimentation at this location and possibly other forms of non-point source (NPS) pollution. Most recent data suggest that the other two populations may also be declining. Severe droughts in 2007 may have also adversely affected surviving populations. We assigned the Alabama pearlshell an LPN of 2 because the NPS pollution is ongoing, and therefore imminent, and the vulnerability of small stream habitat to continuing NPS pollution, combined with the fewer numbers of live mussels in the three known populations, means that the NPS pollution poses a high-magnitude threat to this species.

Slabside pearlymussel (Lexingtonia dolabelloides) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004.

Georgia pigtoe (Pleurobema hanleyanum) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Altamaha spinymussel (Elliptio spinosa) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Snails.

Fat-whorled (Bonneville) pondsnail (Stagnicola bonnevillensis) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004.

Interrupted rocksnail (Leptoxis foremani) (=downei) We have not updated our assessment for this species, as we are currently developing a proposed listing rule for this species.

Sisi snail (Ostodes strigatus) The following summary is based on information

contained in our files. No new information was provided in the petition we received on May 11, 2004. The sisi snail is a ground-dwelling species in the Potaridae family, and is endemic to American Samoa. The species is now known from a single population on the island of Tutuila, American Samoa.

This species is currently threatened by habitat loss and modification and by predation from nonnative predatory snails. The decline of the sisi in American Samoa has resulted, in part, from loss of habitat to forestry and agriculture and loss of forest structure to hurricanes and alien weeds that establish after these storms. All live sisi snails have been found in the leaf litter beneath remaining intact forest canopy. No snails were found in areas bordering agricultural plots or in forest areas that were severely damaged by three hurricanes (1987, 1990, and 1991). Under natural historic conditions, loss of forest canopy to storms did not pose a great threat to the long-term survival of these snails; enough intact forest with healthy populations of snails would support dispersal back into newly regrown canopy forest. However, the presence of alien weeds such as mile-a-minute vine (Mikania micrantha) may reduce the likelihood that native forest will re-establish in areas damaged by the hurricanes. This loss of habitat to storms is greatly exacerbated by expanding agriculture. Agricultural plots on Tutuila have spread from low elevation up to middle and some high elevations, greatly reducing the forest area and thus reducing the resilience of native forests and its populations of native snails. These reductions also increase the likelihood that future storms will lead to the extinction of populations or species that rely on the remaining canopy forest. In an effort to eradicate the giant African snail (Achatina fulica), the alien rosy carnivore snail (Euglandia rosea) was introduced in 1980. The rosy carnivore snail has spread throughout the main island of Tutuila. Numerous studies show that the rosy carnivore snail feeds on endemic island snails including the sisi, and is a major agent in their declines and extirpations. At present, the major threat to long-term survival of the native snail fauna in American Samoa is predation by nonnative predatory snails. These threats are ongoing and are therefore imminent. Since the threats occur throughout the entire range of the species and have a significant effect on the survival of the snails, they are of a high magnitude. Therefore we assigned this species an LPN of 2.

Diamond Y Spring snail (Pseudotryonia adamantina) and Gonzales springsnail (Tryonia circumstriata) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Diamond Y Spring snail and Gonzales springsnail are small aquatic snails endemic to Diamond Y Spring in Pecos County, Texas. The spring and its outflow channel are owned and managed by The Nature Conservancy.

These snails are primarily threatened with habitat loss due to springflow declines from drought and from pumping of groundwater. Additional threats include water contamination from accidental releases of petroleum products, as their habitat is in an active oil and gas field. Also, a nonnative aquatic snail (Melanoides sp.) was recently introduced into the native snails' habitat, and may compete with endemic snails for space and resources. The magnitude of threats is high because limited distribution of these narrow endemics makes any impact from increasing threats (e.g., loss of springflow, contaminants, and nonnative species) likely to result in the extinction of the species. These species occur in one location in an arid region currently plagued by drought and ongoing aquifer withdrawals, making the eventual loss of spring flow an imminent threat of total habitat loss. Thus, we maintain the LPN of 2 for both species.

Fragile tree snail (Samoana fragilis) The following summary is based on

information contained in our files. No new information was provided in the petition we received on May 11, 2004. A tree-dwelling species, the fragile tree snail is a member of the Partulidae family of snails, and is endemic to the islands of Guam and Rota (Mariana Islands). Requiring cool and shaded native forest habitat, the species is now known from 4 populations on Guam and a single population on Rota.

This species is currently threatened by habitat loss and modification and by predation from nonnative predatory snails and flatworms. Large numbers of Philippine deer (Cervus mariannus) (Guam and Rota), pigs (Sus scrofra) (Guam), water buffalo (Bubalus bubalis) (Guam), and cattle (Bos taurus) (Rota) directly alter the understory plant community and overall forest microclimate, making it unsuitable for snails. Predation by the alien rosy carnivore snail (Euglandina rosea) and the Manokwar flatworm (Platydemus manokwari) is a serious threat to the survival of the fragile tree snail. Field observations have established that the rosy carnivore snail and the Manokwar flatworm will readily feed on native Pacific island tree snails, including the Partulidae, such as those of the Mariana Islands. The rosy carnivore snail has caused the extirpation of many populations and species of native snails throughout the Pacific islands. The Manokwar flatworm has also contributed to the decline of native tree snails, in part due to its ability to ascend into trees and bushes that support native snails. Areas with populations of the flatworm usually lack partulid tree snails or have declining numbers of snails. Because all of the threats occur rangewide and have a significant effect on the survival of this snail species, they are high in magnitude. The threats are also ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Guam tree snail (Partula radiolata) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. A tree-dwelling species, the Guam tree snail is a member of the Partulidae family of snails and is endemic to the island of Guam. Requiring cool and shaded native forest habitat, the species is now known from 22 populations on Guam.

This species is primarily threatened by predation from nonnative predatory snails and flatworms. In addition, the species is also threatened by habitat loss and degradation. Predation by the alien rosy carnivore snail (Euglandina rosea) and the alien Manokwar flatworm (Platydemus manokwari) is a serious threat to the survival of the Guam tree snail (see summary for the fragile tree snail, above). On Guam, open agricultural fields and other areas prone to erosion were seeded with tangantangan (Leucaena leucocephala) by the U.S. Military. Tangantangan grows as a single species stand with no substantial understory. The microclimatic condition is dry with little accumulation of leaf litter humus and is particularly unsuitable as Guam tree snail habitat. In addition, native forest cannot reestablish and grow where this alien weed has become established. Because all of the threats occur rangewide and have a significant effect on the survival of this snail species, they are high in magnitude. The threats are also ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Humped tree snail (Partula gibba) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. A tree-dwelling species, the humped tree snail is a member of the Partulidae family of snails, and was originally known from the island of Guam and the Commonwealth of the Northern Mariana Islands (islands of Rota, Aguiguan, Tinian, Saipan, Anatahan, Sarigan, Alamagan, and Pagan). Most recent surveys revealed a total of 14 populations on the islands of Guam, Rota,

Aguiguan, Sarigan, Saipan, Alamagan, and Pagan. Although still the most widely distributed tree snail endemic in the Mariana Islands, remaining population sizes are often small.

This species is currently threatened by habitat loss and modification and by predation from nonnative predatory snails and flat worms. Throughout the Mariana Islands, feral ungulates (pigs (Sus scrofa), Philippine deer (Cervus mariannus), cattle (Bos taurus), water buffalo (Bubalus bubalis), and goats (Capra hircus)) have caused severe damage to native forest vegetation by browsing directly on plants, causing erosion, and retarding forest growth and regeneration. This in turn reduces the quantity and quality of forested habitat for the humped tree snail. Currently, populations of feral ungulates are found on the islands of Guam (deer, pigs, and water buffalo), Rota (deer and cattle), Aguiguan (goats), Saipan (deer, pigs, and cattle), Alamagan (goats, pigs, and cattle), and Pagan (cattle, goats, and pigs). Goats were eradicated from Sarigan in 1998 and the humped tree snail has increased in abundance on that island, likely in response to the removal of all the goats. However, the population of humped tree snails on Anatahan is likely extirpated due to the massive volcanic explosions of the island beginning in 2003 and still continuing, and the resulting loss of up to 95 percent of the vegetation on the island. Predation by the alien rosy carnivore snail (Euglandina rosea) and the alien Manokwar flatworm (Platydemus manokwari) is a serious threat to the survival of the humped tree snail (see summary for the fragile tree snail, above). The magnitude of threats is high because these alien predators cause significant population declines to the humped tree snail rangewide. These threats are ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Lanai tree snail (Partulina semicarinata) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. A tree-dwelling species, P. semicarinata is a member of the Achatinellidae family of snails. Endemic to the island of Lanai, the species is currently known from 3 populations totaling 29 individuals. This species is highly threatened throughout its limited range by habitat loss and modification and by predation from rats. No efforts are being undertaken to remove rats in areas where P. semicarinata occur. The threat from this predator is expected to continue or increase unless the rats are actively controlled or eradicated. Habitat loss also continues as nonnative ungulates trample and browse native vegetation required by P. semicarinata. Although the snails are in an area to be fenced, the habitat will continue to be degraded until the fence is completed and the ungulates have been removed. The small number of individuals and the small number of populations make this species very susceptible to the negative effects of stochastic events such as hurricanes and storms. A population in captivity is protected from the effects of unexpected droughts, although the effects of severe storms may still affect this population as evidenced by the loss of snails when a severe flood interrupted the power supply to the Hawaii Endangered Snail Captive Propagation Lab and temperatures increased within the environmental chambers containing the snails. In addition, these captive snails are likely subjected to the same risks of reduced reproductive vigor and loss of genetic variability as the snail in the wild population. The magnitude of threats is high because they cause significant population declines to P.semicarinata rangewide. The threats are also ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Lanai tree snail (Partulina variabilis) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. A tree-dwelling species, P. variabilis is a member of the Achatinellidae family of snails. Endemic to the island of Lanai,

the species is currently known from 12 populations totaling 90 individuals. This species is highly threatened throughout its limited range by habitat loss and modification and by predation from rats. The same description of threats for P. semicarinata, above, applies to this species, including threats to a population in captivity. The magnitude of threats is high because they result in direct mortality or significant population declines to P. variabilis rangewide. The threats are ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Langford's tree snail (Partula langfordi) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. A tree-dwelling species, Langford's tree snail is a member of the Partulidae family of snails, and is known from one population on the island of Aguiguan. This species is currently threatened by habitat loss and modification and by predation from nonnative predatory snails. In the 1930s, the island of Aguiguan was mostly cleared of native forest to support sugar cane and pineapple production. The abandoned fields and airstrip are now overgrown with alien weeds. The remaining native forest understory has greatly suffered from large and uncontrolled populations of alien goats and the invasion of weeds. Goats (Capra hircus) have caused severe damage to native forest vegetation by browsing directly on plants, causing erosion, and retarding forest growth and regeneration. This in turn reduces the quantity and quality of forested habitat for Langford's tree snail. Predation by the alien rosy carnivore snail (Euglandina rosea) and by the Manokwar flatworm (Platydemus manokwari) (see summary for the fragile tree snail, above) is also a serious threat to the survival of Langford's tree snail. All of the threats are occurring rangewide and no efforts to control or eradicate the nonnative predatory snail species or to reduce habitat loss are being undertaken. The magnitude of threats is high because they result in direct mortality or significant population declines to Langford's tree snail rangewide. A survey of Aguiguan in November 2006 failed to find any live Langford's tree snails. These threats are also ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Newcomb's tree snail (Newcombia cumingi) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The species is endemic to the island of Maui, where it is currently known from a single remaining population. The greatest threats to Newcomb's tree snail are the loss of the only known remaining population due to predation from rats and the rosy carnivore snail (Euglandina rosea). There are no efforts in place to reduce the threat from the rosy carnivore snail. Discussions are underway with the private landowner to construct a rat-proof fence in the area occupied by this snail. Our attempts to raise this species in a captive propagation facility have been unsuccessful. The magnitude of threats is high because they occur within the last known population of the species and result in direct mortality or significant population declines. These threats are also ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Phantom Cave snail (Cochliopa texana) and Phantom springsnail (Tryonia cheatumi) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Phantom Cave snail and Phantom springsnail are small aquatic snails that occur in three spring outflows in the Toyah Basin in Reeves and Jeff Davis Counties, Texas. The primary threat to both species is the loss of surface flows due to declining groundwater levels from drought and pumping for agricultural production. Although much of the land immediately surrounding their habitat is owned and

managed by The Nature Conservancy, Bureau of Reclamation, and Texas Parks and Wildlife Department, the water which is needed to maintain their habitat, has declined due to a reduction in spring flows, possibly as a result of private groundwater pumping in areas beyond that controlled by these landowners. As an example, Phantom Lake Spring, one of the sites of occurrence, has already ceased flowing, and aquatic habitat in the spring is supported only by a pumping system. The magnitude of the threats is high because spring flow loss would result in complete habitat destruction and permanent elimination of all populations of the species. The immediacy of the threats is imminent, as evidenced by the drastic decline in spring flow at Phantom Lake Spring that is currently happening and may extirpate these populations in the near future. Declining spring flows in San Solomon Spring are also becoming evident, and will affect that spring site as well within the foreseeable future. Thus, we maintained the LPN of 2 for both species.

Tutuila tree snail (Eua zebrina) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. A tree-dwelling species, the Tutuila tree snail is a member of the Partulidae family of snails, and is endemic to American Samoa. The species is known from 32 populations on the islands of Tutuila, Nuusetoga, and Ofu.

This species is currently threatened by habitat loss and modification and by predation from nonnative predatory snails and rats. All live Tutuila tree snails were found on understory vegetation beneath remaining intact forest canopy. No snails were found in areas bordering agricultural plots or in forest areas that were severely damaged by three hurricanes (1987, 1990, and 1991). (See summary for the sisi snail, above, regarding impacts of alien weeds and of the rosy carnivore snail.). Rats (Rattus spp) have also been shown to devastate snail populations, and rat-chewed snail shells have been found at sites where the Tutuila snail occurs. At present, the major threat to the long-term survival of the native snail fauna in American Samoa is predation by nonnative predatory snails and rats. The magnitude of threats is high because they result in direct mortality or significant population declines to the Tutuila tree snail rangewide. The threats are also ongoing and thus are imminent. Therefore, we assigned this species an LPN of 2.

Chupadera springsnail (Pyrgulopsis chupaderae) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Elongate mud meadows springsnail (Pyrgulopsis notidicola) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004.

Gila springsnail (Pyrgulopsis gilae) The following summary is based on information contained in our files and the petition we received on November 20, 1985. Also see our 12month petition finding published in the Federal Register on October 4, 1988 (53 FR 38969). The Gila springsnail is an aquatic species known from 13 populations in New Mexico. Surveys conducted in 2008 may have located two additional populations, but the identification of the species at those sites awaits confirmation. Preliminary assessment of springsnail collections made in 2008 indicates there are morphological differences between some Gila springsnail populations, which suggests there may be some level of genetic divergence or speciation.

The long-term persistence of the Gila springsnail is contingent upon protection of the riparian corridor immediately adjacent to the springhead and springrun. Sites on both private and Federal lands are subject to levels of recreational use and livestock grazing that negatively affect this species, thus placing the long-term survival of the Gila springsnail at risk. Natural events such as drought, forest fire, sedimentation, and flooding; wetland habitat degradation by recreational bathing in thermal springs; and poor watershed management practices represent the primary threats to the Gila springsnail. Fire suppression activities and fire retardant chemicals have potentially deleterious effects on this species, as well. Because several of the springs occur on U.S. Forest Service land, management options for the protection of the snail should be possible. However, randomly occurring events, especially fire and drought, could have a major impact on the species. Moderate use by recreationalists and livestock is ongoing. If these uses remain at current or lower levels, they will not pose an imminent threat to the species. Of greater concern is drought, which could affect spring discharge and increases the potential for fire. Although the effect global warming will have on streams and forests of the Southwest is unpredictable, mean annual temperatures in New Mexico have increased by 0.6 degrees per decade since 1970. Higher temperatures lead to higher evaporation rates which may reduce the amount of runoff and groundwater recharge. Increased temperatures may also increase the extent of area influenced by drought and fire. Large fires have occurred in the Gila National Forest and subsequent floods and ash flows have severely affected aquatic life in streams. Although some of the threats facing the species are ongoing and therefore imminent (such as livestock and recreational uses), the biggest threats are nonimminent (such as fire, drought, and increased temperatures). Therefore, the threats overall are nonimminent. The threats are moderate to low magnitude because the threats are occurring at low levels and populations appear to be stable. Therefore, we retained a listing priority number of 11 for this species.

Gonzales springsnail (Tryonia circumstriata) See summary above under Diamond Y Spring snail (Pseudotryonia adamantina).

Huachuca springsnail (Pyrgulopsis thompsoni) The following is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Huachuca springsnail inhabits approximately 16 springs and cienegas at elevations of 4,500 to 7,200 feet in southeastern Arizona (14 sites) and adjacent portions of Sonora, Mexico (2 sites). The springsnail is typically found in the shallower areas of springs or cienegas, often in rocky seeps at the spring source. Ongoing threats include habitat modification and destruction through catastrophic wildfire, drought, streamflow alteration, and, potentially, grazing, recreation, military activities, and timber harvest. Overall, the threats are moderate in magnitude because threats are not occurring throughout the range of the species uniformly and not all populations would likely be impacted simultaneously by any of the known threats. In addition, multiple landowners (Forest Service, Fort Huachuca, The Nature Conservancy) are including consideration for the springsnail or other co-occurring listed species in their activities. The threats are ongoing and, thus, imminent. Therefore, we have assigned an LPN of 8 to this species.

New Mexico springsnail (Pyrgulopsis thermalis) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Page springsnail (Pyrgulopsis morrisoni) The following summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004. The Page springsnail is known to exist only

within a complex of springs located within an approximately 0.93-mi (1.5-km) stretch along the west side of Oak Creek around the community of Page Springs, and within springs located along Spring Creek, tributary to Oak Creek, Yavapai County, Arizona. The primary threat to the Page springsnail is modification for domestic, agricultural, ranching, fish hatchery, and recreational activities. Many of the springs where the species occurs have been subjected to some level of such modification. Arizona Game and Fish Department management plans for the Bubbling Ponds and Page Springs fish hatcheries include commitments to replace lost habitat and to monitor remaining populations of invertebrates such as the Page springsnail. A draft Candidate Conservation Agreement with Assurances was published and available for public review and comment on January 28, 2008. Based on recent survey data, it appears that the Page springsnail is abundant within natural habitats and persists in modified habitats, albeit at reduced densities. The magnitude of threats is considered high because limited distribution of this narrow endemic makes any detrimental effects from threats likely to result in extirpation or extinction. The immediacy of the threat of ground water withdrawal is uncertain due to conflicting information regarding imminence. However, overall, the threats are imminent because modification of the species' habitat is currently occurring. Therefore, we retain an LPN of 2 for the Page springsnail.

Phantom springsnail (Tyronia cheatumi) See summary above under Phantom Cave snail (Cochliopa texana).

Three Forks springsnail (Pyrgulopsis trivialis) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Insects

Wekiu bug (Nysius wekiuicola) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The wekiu bug belongs to the true bug family, Lygaeidae, and is endemic to the island of Hawaii. This species only occurs on the summit of Mauna Kea and feeds upon other insect species which are blown to the summit of this large volcano. The wekiu bug is primarily threatened by the loss of its habitat from astronomy development. In 2004 and early 2005, surveys found multiple new locations of the wekiu bug on cinder cones on the Mauna Kea summit. Several of these cinder cones within the Mauna Kea Science Reserve, as well as two cinder cones located in the State Ice Age Natural Area Reserve, are not currently undergoing development nor are they the site of any planned development. Thus, the threats, although ongoing, do not occur across the entire range of the wekiu bug. Because there are occupied locations that are not subject to the primary threat of astronomy development, the overall magnitude of the threat is moderate. The immediacy of the threats is imminent because there are significant parts of the wekiu bug's range where ongoing development is occurring. Therefore, we assigned this species an LPN of 8.

Mariana eight spot butterfly (Hypolimnas octucula mariannensis) - The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Mariana eight spot butterfly is a nymphalid butterfly species that feeds upon two host plants, Procris pedunculata and Elatostema calcareum. Endemic to the islands of Guam and Saipan, the species is now known from ten populations on Guam. This species is currently threatened by predation and parasitism. The Mariana eight spot butterfly has extremely high mortality of eggs and larvae due to predation by alien ants and wasps. Because the threat of parasitism and predation by

nonnative insects occurs range-wide and can cause significant population declines to this species, they are high in magnitude. The threats are imminent because they are ongoing. Therefore, we assigned an LPN of 3 for this subspecies.

Mariana wandering butterfly (Vagrans egestina) - The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Mariana wandering butterfly is a nymphalid butterfly species which feeds upon a single host plant species, Maytenus thompsonii. Originally known from and endemic to the islands of Guam and Rota, the species is now known from one population on Rota. This species is currently threatened by alien predation and parasitism. The Mariana wandering butterfly is likely predated on by alien ants and parasitized by native and nonnative parasitoids. Because the threat of parasitism and predation by nonnative insects occurs range-wide and can cause significant population declines to this species, they are high in magnitude. These threats are imminent because they are ongoing. Therefore, we assigned an LPN of 2 for this species.

Miami blue butterfly (Cyclargus thomasi bethunebakeri) The following summary is based on information contained in our files and in the petition we received on June 15, 2000. The Miami blue is endemic to south Florida. Historically, it occurred throughout the Florida Keys, north to Hillsborough and Volusia Counties. None were reported to be found between 1996 and 1999. It is presently located at two sites in the Keys. In 1999, a metapopulation was discovered at Bahia Honda State Park on Bahia Honda Key and in 2006 a second metapopulation was discovered on the outer islands of Key West National Wildlife Refuge. The former appears restricted to several hundred individuals at most, while the latter likely includes at least 1,500 individuals. Capacity to expand at either site or successfully emigrate from either site appears to be very low due to the sedentary nature of the butterfly and isolation of habitats. Captive propagation and reintroduction efforts are continuing, but success has yet to be shown. The Miami blue is predominantly a coastal species, occurring in disturbed and early successional habitats such as the edges of tropical hardwood hammock, coastal berm forest, and along trails and other open sunny areas, and historically in pine rocklands. These habitats provide larval host plants and adult nectar sources that are required to occur in close proximity. The primary threats to the subspecies are the limited population size and range, hurricanes, and mosquito control activities. In addition, illegal collection may also pose a threat. The threats are high in magnitude because they occur rangewide and in combination affect the population levels. Except for hurricanes, the threats are nonimminent because the current range is within a State park and National Wildlife Refuge, where the above threats are substantially controlled. Therefore, we assigned the Miami blue a LPN of 6.

Sequatchie caddisfly (Glyphopsyche sequatchie) The following summary is based on information in our files. No new information was provided in the petition we received on May 11, 2004. The Sequatchie caddisfly is known from two spring runs that emerge from caves in Marion County, Tennessee - Owen Spring Branch (the type locality) and Martin Spring run in the Battle Creek system. In 1998, biologists estimated population sizes at 500 to 5000 individuals for Owen Spring Branch and 2 to 10 times higher at Martin Spring, due to the greater amount of apparently suitable habitat. In spite of greater amounts of suitable habitat at the Martin Spring run, Sequatchie caddisflies are more difficult to find at this site, and in 2001 (the most recent survey) the Sequatchie caddisfly was abundant at the Owen Spring Branch location, while only two individuals were observed at the Martin Spring. Threats to the Sequatchie caddisfly include siltation, point and nonpoint discharges from municipal and industrial activities and

introduction of toxicants during episodic events. These threats, coupled with the extremely limited distribution of the species, its apparent small population size, the limited amount of occupied habitat, ease of accessibility, and the annual life cycle of the species, are all factors that leave the Sequatchie caddisfly vulnerable to extirpation. Therefore, the magnitude of the threat is high. These threats are gradual and/or not necessarily imminent. Based on high-magnitude, nonimminent threats, we assigned this species a listing priority number of 5.

Clifton cave beetle (Pseudanophthalmus caecus) The following summary is based upon information contained in our files. No new information was provided in the petition we received on May 11, 2004. Clifton cave beetle is a small, eyeless, reddish-brown predatory insect that feeds upon small cave invertebrates. It is cave dependent, and is not found outside the cave environment. Clifton cave beetle is only known from two privately owned Kentucky caves. Soon after the species was first collected in 1963 in one cave, the cave entrance was enclosed due to road construction. We do not know whether the species still occurs at the original location or if it has been extirpated from the site by the closure of the cave entrance. Other caves in the vicinity of this cave were surveyed for the species during a 1995-1996. Only one additional site was found to support the Clifton Cave beetle. The limestone caves in which the Clifton cave beetle is found provide a unique and fragile environment that supports a variety of species that have evolved to survive and reproduce under the demanding conditions found in cave ecosystems. The limited distribution of the species makes it vulnerable to isolated events that would only have a minimal effect on the more wide-ranging insects. Events such as toxic chemical spills, discharges of large amounts of polluted water or indirect impacts from off-site construction activities, closure of entrances, alteration of entrances, or the creation of new entrances could have serious adverse impacts on this species. Therefore, the magnitude of threat is high for this species. The immediacy of threat is nonimminent because there are no known projects planned that would affect the species in the near future. We therefore have assigned a listing priority number of 5 to this species.

Icebox cave beetle (Pseudanophthalmus frigidus) The following summary is based upon information contained in our files. No new information was provided in the petition we received on May 11, 2004. Icebox cave beetle is a small, eyeless, reddish-brown predatory insect that feeds upon small cave invertebrates. It is not found outside the cave environment, and is only known from one privately owned Kentucky cave. The limestone cave in which this species is found provides a unique and fragile environment that supports a variety of species that have evolved to survive and reproduce under the demanding conditions found in cave ecosystems. The species has not been observed since it was originally collected, but species experts believe that it may still exist in the cave in low numbers. The limited distribution of the species makes it vulnerable to isolated events that would only have a minimal effect on the more wide-ranging insects. Events such as toxic chemical spills or discharges of large amounts of polluted water, or indirect impacts from off-site construction activities, closure of entrances, alteration of entrances, or the creation of new entrances, could have serious adverse impacts on this species. Therefore, the magnitude of threat is high for this species because it is limited in distribution and the threats would result in mortality or reduced reproductive capacity. The immediacy of threat is nonimminent because there are no known projects planned that would affect the species in the near future. We therefore have assigned an LPN of 5 to this species.

Inquirer cave beetle (Pseudanophthalmus inquisitor) The following summary is

based upon information contained in our files. No new information was provided in the petition we received on May 11, 2004. The inquirer cave beetle is a fairly small, eyeless, reddish-brown predatory insect that feeds upon small cave invertebrates. It is not found outside the cave environment, and is only known from one privately owned Tennessee cave. The limestone cave in which this species is found provides a unique and fragile environment that supports a variety of species that have evolved to survive and reproduce under the demanding conditions found in cave ecosystems. The species was last observed in 2006. The limited distribution of the species makes it vulnerable to isolated events that would only have a minimal effect on the more wide-ranging insects. The area around the only known site for the species is in a rapidly expanding urban area. The entrance to the cave is protected by the landowner through a cooperative management agreement with the Service, The Nature Conservancy and Tennessee Wildlife Resources Agency; however, a sinkhole that drains into the cave system is located away from the protected entrance and is near a highway. Events such as toxic chemical spills, discharges of large amounts of polluted water or indirect impacts from off-site construction activities could adversely affect the species and the cave habitat. The magnitude of threat is high for this species because it is limited in distribution and the threats would have negative impacts on its continued existence. The threats are nonimminent because there are no known projects planned that would affect the species in the near future and it receives some protection under a cooperative management agreement. We therefore have assigned a listing priority number of 5 to this species.

Louisville cave beetle (Pseudanophthalmus troglodytes) The following summary is based upon information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Louisville cave beetle is a small, eyeless, reddish-brown predatory insect that feeds upon cave invertebrates. It is not found outside the cave environment, and is only known from two privately owned Kentucky caves. The limestone caves in which this species is found provide a unique and fragile environment that supports a variety of species that have evolved to survive and reproduce under the demanding conditions found in cave ecosystems. The limited distribution of the species makes it vulnerable to isolated events that would only have a minimal effect on the more wide-ranging insects. Events such as toxic chemical spills, discharges of large amounts of polluted water or indirect impacts from off-site construction activities, closure of entrances, alteration of entrances, or the creation of new entrances could have serious adverse impacts on this species. The magnitude of threat is high for this species, because it is limited in distribution and the threats would have negative impacts on the species. The immediacy of threat is nonimminent because there are no known projects planned that would affect the species in the near future. We therefore have assigned an LPN of 5 to this species.

Tatum Cave beetle (Pseudanophthalmus parvus) The following summary is based upon information contained in our files. No new information was provided in the petition we received on May 11, 2004. Tatum Cave beetle is a small, eyeless, reddish-brown predatory insect that feeds upon cave invertebrates. It is not found outside the cave environment, and is only known from one privately owned Kentucky cave. The limestone cave in which this species is found provides a unique and fragile environment that supports a variety of species that have evolved to survive and reproduce under the demanding conditions found in cave ecosystems. The species has not been observed since 1965, but species experts believe that it still exists in low numbers. The limited distribution of the species makes it vulnerable to isolated events that would only have a minimal effect on the more wide-ranging insects. Events such as toxic chemical spills or discharges of large amounts of polluted water, or indirect impacts from off-site

construction activities, closure of entrances, alteration of entrances, or the creation of new entrances could have serious adverse impacts on this species. The magnitude of threat is high for this species, because its limited numbers mean that any threats could affect its continued existence. The immediacy of threat is nonimminent because there are no known projects planned that would affect the species in the near future. We therefore have assigned an LPN of 5 to this species.

Taylor's (Whulge, Edith's) checkerspot butterfly (Euphydryas editha taylori) The following summary is based on information contained in our files and in the petition received on December 11, 2002. Historically, the Taylor's checkerspot butterfly was known from 70 locations: 23 in British Columbia, 34 in Washington, and 13 in Oregon. Based on surveys during the 2008 flight period, 11 populations are now known, with a total of about 2,500 to 3,000 individuals observed rangewide. Currently, eight populations are known from Washington, two in the Willamette Valley of Oregon and one on Denman Island, British Columbia, Canada.

Threats include degradation and destruction of native grasslands due to agriculture; residential and commercial development; encroachment by nonnative plants; succession from grasslands to native shrubs and trees; and fire. The grassland ecosystem on which this subspecies depends requires annual management to maintain suitable grassland habitat for the species. The application of Bacillus thuringiensis var. kurstake (Btk) for Asian gypsy moth control was routinely applied in Pierce County, Washington for many years. This pesticide is documented to have deleterious effects on non-target lepidopteron species, including all moths and butterflies. Because of the timing and close proximity of the Btk application to native prairies where Taylors' checkerspot adults, or their larvae, were historically known to occur, it is likely that the spraying contributed to the extirpation of the subspecies at three locations in Pierce County, Washington.

Threats also include the loss of prairies to development or the conversion of native grasslands to agriculture; the threat of vehicle and foot traffic that crushes larvae and larval host plants on roads where host plants have become established, thus acting as a mortality sink at north Olympic Peninsula sites. Other important threats include changes to the structure and composition of prairie habitat brought on by the invasion of shrubs and trees (Scot's broom and Douglas-fir) or nonnative pasture grasses that quickly invade onto prairies when processes like fire, or its surrogate mowing, are not implemented. These changes to prairie habitat threaten Taylor's checkerspot by degrading prairie habitat and making it unsuitable for the butterfly. The threats that lead to habitat degradation and loss are ubiquitous, occurring rangewide, and affect the survival of the subspecies. Therefore, they are high in magnitude. The threats are imminent because they are ongoing and occur simultaneously at all of the known locations for the subspecies. Based on the high magnitude and the imminent nature of threats, we assigned the Taylor's checkerspot butterfly a listing priority number of 3.

Blackline Hawaiian damselfly (Megalagrion nigrohamatum nigrolineatum) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Crimson Hawaiian damselfly (Megalagrion leptodemas) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Flying earwig Hawaiian damselfly (Megalagrion nesiotes) We have not updated our

assessment for this species, as we are currently developing a proposed listing rule.

Oceanic Hawaiian damselfly (Megalagrion oceanicum) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Orangeblack Hawaiian damselfly (Megalagrion xanthomelas) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The orangeblack Hawaiian damselfly is a stream-dwelling species endemic to the Hawaiian Islands of Kauai, Oahu, Molokai, Maui, Lanai, and Hawaii. The species no longer is found on Kauai, and is now restricted to 16 populations on the islands of Oahu, Maui, Molokai, Lanai, and Hawaii. This species is threatened by predation from alien aquatic species such as fish and predacious insects and habitat loss through dewatering of streams and invasion by nonnative plants. Nonnative fish and insects prey on the naiads of the damselfly, and loss of water reduces the amount of suitable naiad habitat available. Invasive plants (e.g., California grass (Brachiaria mutica)) also contribute to loss of habitat by forming dense, monotypic stands that completely eliminate any open water. Nonnative fish and plants are found in all the streams the orangeblack damselfly occur in, except the Oahu location, where there are no nonnative fish. We assigned this species an LPN of 8 because, although the threats are ongoing and therefore imminent, they affect the survival of the species in varying degrees throughout the range of the species and are of moderate magnitude.

Pacific Hawaiian damselfly (Megalagrion pacificum) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Picture-wing fly (Drosophila digressa) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004, but new information was provided by one Drosophila expert in 2006. This picture-wing fly, a member of the family Drosophilidae, feeds only upon species of Charpentiera, and is endemic to the Hawaiian Island of Hawaii. Never abundant in number of individuals observed, D. digressa was originally known from 5 population sites and may now be limited to as few as 1 or 2 sites. Due to the small population size of the species and its small known habitat area, Drosophila researchers believe this species and its habitat are particularly vulnerable to a myriad of threats. Feral ungulates (pigs, goats, and cattle) degrade and destroy D. digressa host plants and habitat by directly trampling plants, facilitating erosion, and spreading nonnative plant seeds. Nonnative plants degrade host plant habitat and compete for light, space, and nutrients. Direct predation of D. digressa by nonnative social insects, particularly yellow jacket wasps, is also a serious threat. Additionally, this species faces competition at the larval stage from nonnative tipulid flies, which feed within the same portion of the decomposing host plant area normally occupied by the D. digressa larvae during their development with a resulting reduction in available host plant material. The threats to the native forest habitat of D. digressa, and to individuals of this species, occur throughout its range and are expected to continue or increase unless efforts at control or eradication are undertaken. In additions, because of the limited distribution and small population of the species, any of the threats would significantly impair survival of the species. The threats are also imminent, because they are ongoing. No known conservation measures have been taken to date to specifically address these threats, and we have therefore assigned this species an LPN of 2.

Stephan's riffle beetle (Heterelmis stephani) The following summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004. The Stephan's riffle beetle is an endemic riffle beetle found in limited spring environments within the Santa Rita Mountains, Pima County, Arizona. The beetle is known from Sylvester Springs in Madera Canyon, within the Coronado National Forest. These springs are typical isolated, mid-elevation, permanently saturated, spring-fed aquatic climax communities commonly referred to as cienegas. Threats are largely from habitat modification (from recreational activities in the springs and changes in water chemistry due to catastrophic natural disasters such as fires or floods). The threats to be of moderate to low magnitude based on our current knowledge of the permanence of threats and the likelihood that the species will persist in areas that are unaffected by the threats. Because the threats from recreational activities are currently occurring, they are imminent. Therefore, we assigned a LPN of 8 to the Stephan's riffle beetle.

Casey's junebeetle (Dinacoma caseyi) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Dakota skipper (Hesperia dacotae) The following summary is based on information contained in our files, including information from the petition received on May 12, 2003. The Dakota skipper is a small- to mid-sized butterfly that inhabits high-quality tallgrass and mixed grass prairie in Minnesota, North Dakota, South Dakota, and the provinces of Manitoba and Saskatchewan in Canada. The species is presumed to be extirpated from Iowa and Illinois and from many sites within occupied States.

The species is threatened by conversion of its native prairie habitat for agricultural purposes, overgrazing, invasive species, gravel mining, inbreeding, population isolation, and, in some cases, prescribed fire. Prairie succeeds to shrubland or forest without periodic fire, grazing, or mowing; thus, the species is also threatened at sites where such management practices are not applied. We, other agencies, and private organizations (e.g., The Nature Conservancy) protect and manage some Dakota skipper sites. Although proper management is always necessary to ensure its persistence, even at protected sites, it is secure at some sites owned by these entities. The species is also secure at some sites where private landowners manage native prairie in ways that conserve Dakota skipper. Despite these protections, recent surveys in at least parts of the species' range have led us to view threats to Dakota skipper as being more imminent than we previously believed. In January 2007, for example, Minnesota Department of Natural Resources proposed (although, it did not finalize) revising the status of Dakota skipper in the state from threatened to endangered because it appears to be rapidly disappearing from remnant habitat. In addition, approximately half of the inhabited sites are privately owned with little or no protection. Ongoing threats on these sites include invasive species, overgrazing, and herbicide applications. A few private sites are protected from conversion by easements, but these do not prevent adverse effects from overgrazing. Overall, the threats are moderate in magnitude because they are not occurring rangewide. They are, however, ongoing and therefore imminent, particularly on private lands. We assigned an LPN of 8 to this species.

Mardon skipper (Polites mardon) See above in Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files and the petition we received on December 24, 2002.

Coral Pink Sand Dunes tiger beetle (Cicindela limbata albissima) See above in

Summary of Listing Priority Changes in Candidates. The above summary is based on information contained in our files, including information from the petition we received on April 21, 1994.

Highlands tiger beetle (Cicindela highlandensis) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Highlands tiger beetle is narrowly distributed and restricted to areas of bare sand within upland oak scrub and pine vegetation on ancient sand dunes of the Lake Wales Ridge in Polk and Highlands Counties, Florida. Adult tiger beetles have been found at 40 sites from near Haines City south to Josephine Creek. In 20042005 surveys, a total of 1,574 adults were found at 40 sites, compared with 643 adults at 31 sites in 1996, 928 adults at 31 sites in 1995, and 742 adults at 21 sites in 1993. Of the 40 sites in the 20042005 surveys with one or more adults, results ranged from 3 sites with large populations of over 100 adults, to 13 sites with fewer than 10 adults. Results from a limited removal study at four sites suggest that the actual population size at the various survey sites is likely to be as much as two times as high as indicated by the visual index counts.

Lack of fire to create open sand, pesticide use, small population sizes, and over-collecting pose serious threats to this species. Because this species is narrowly distributed with specific habitat requirements and small populations, any of the threats could have a significant impact on the survival of the species. Therefore, the magnitude of threats is high. Although the majority of its historic range has been lost, degraded, and fragmented, numerous sites are protected and land managers are implementing prescribed fire, which are expected to restore habitat and help reduce threats and have already helped stabilize and somewhat improve the populations. Overall, the threats are nonimminent. Therefore, we assigned the Highlands tiger beetle an LPN of 5.

Arachnids

Warton cave meshweaver (Cicurina wartoni) The following summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004. Warton Cave meshweaver is an eyeless, cave-dwelling, unpigmented, 0.25 inch long invertebrate known only from female specimens. This meshweaver is known to occur in only one cave, Pickle Pit, in Travis County, Texas. Primary threats to the species and its habitat are predation and competition from fire ants, surface and subsurface effects from runoff from an adjacent subdivision, unauthorized entry into the area surrounding the cave, modification of vegetation near the cave from human use, and trash dumping which may include toxic materials near the feature. The magnitude of threats is high because the single location for this species makes it highly vulnerable to extinction from the identified threats. The threats are imminent because fire ants are known to occur in the vicinity of the cave, and impacts to the cave from runoff and human activities are an imminent threat. Thus, we assign an LPN of 2 to this species.

Crustaceans

Anchialine pool shrimp (Metabetaeus lohena) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Metabetaeus lohena is an anchialine pool-inhabiting species of shrimp belonging to the family Alpheidae. This species is endemic to the Hawaiian Islands and is currently known from populations on the islands of Oahu, Maui, and Hawaii. The primary threats to this species are predation by fish (which do not naturally occur in the pools inhabited by this

species) and habitat loss from degradation. The pools where this species occurs on the islands of Maui and Hawaii are located within State Natural Area Reserves (NAR). Hawaii's State statutes prohibit the collection of the species and the disturbance of the pools in State NARs. However, enforcement of collection and disturbance prohibitions is difficult, and the negative effects from the introduction of fish are extensive and happen quickly. In addition, the pools where this species occurs on the island of Oahu do not receive protection from collection of the species or disturbance of the pools. Therefore, threats to this species have a significant adverse effect on the survival of the species, and are of a high magnitude. However, the primary threats of predation from fish and loss of habitat due to degradation are nonimminent overall, because on the islands of Maui and Hawaii no fish were observed in any of the pools where this species occurs and there has been no documented dumping in these pools. Only one site on Oahu had a dumping instance, and in that case the dumping was cleaned up immediately and the species subsequently observed. No additional dumping events are known to have occurred. Therefore, we assigned this species an LPN of 5.

Anchialine pool shrimp (Palaemonella burnsi) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Palaemonella burnsi is an anchialine pool-inhabiting species of shrimp belonging to the family Palaemonidae. This species is endemic to the Hawaiian Islands and is currently known from three populations on the island of Maui and one population on the island of Hawaii. The primary threats to this species are predation by fish (which do not naturally occur in the pools inhabited by this species) and habitat loss due to degradation. The pools where this species occurs on Maui are located within a State Natural Area Reserve (NAR). Hawaii's State statutes prohibit the collection of the species and the disturbance of the pools in State NARs. On the island of Hawaii, the species occurs within a National Park, and collection and disturbance are also prohibited. However, enforcement of these prohibitions is difficult, and the negative effects from the introduction of fish are extensive and happen quickly. Therefore, threats to this species have a significant adverse effect on the survival of the species, and are of a high magnitude. However, the threats are nonimminent, because surveys in 2004 and 2007 did not find fish in the pools where these shrimp occur on Maui or the island of Hawaii. Also, there was no evidence of recent habitat degradation at those pools. We assigned this species an LPN of 5.

Anchialine pool shrimp (Procaris hawaiana) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Procaris hawaiana is an anchialine pool-inhabiting species of shrimp belonging to the family Procarididae. This species is endemic to the Hawaiian Islands, and is currently known from two populations on the island of Maui and one population on the island of Hawaii. The primary threats to this species are predation from fish (which do not naturally occur in the pools inhabited by this species) and habitat loss due to degradation. The pools where this species occurs on Maui are located within a State Natural Area Reserve (NAR). Hawaii's State statutes prohibit the collection of the species and the disturbance of the pools in State NARs. However, enforcement of these prohibitions is difficult and the negative effects from the introduction of fish are extensive and happen quickly. In addition, there are no conservation efforts underway to alleviate the potential for any of these threats in the one pool on the island of Hawaii. Therefore, threats to this species have a significant adverse effect on the survival of the species, and thus remain at a high magnitude. However, the threats to the species are nonimminent because, during 2004 and 2007 surveys, no fish were observed in the pools where these shrimp occur on Maui, and no fish were observed in the one

pool on the island of Hawaii during a site visit in 2005. In addition, there were no signs of dumping or fill in any of the pools where the species occurs. Therefore, we assigned this species an LPN of 5.

Anchialine pool shrimp (Vetericaris chaceorum) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Vetericaris chaceorum is an anchialine pool-inhabiting species of shrimp belonging to the family Procarididae; it is the only species in its genus. This species is endemic to the Hawaiian Islands, and is only known from one population in a single pool on the island of Hawaii. The primary threats to this species are predation from nonnative fish and habitat degradation and contamination from illegal trash dumping. This species would be highly vulnerable to predation by any intentionally or accidentally introduced fish, or contamination from illegal dumping into its single known location. This pool lies within lands administered by the State of Hawaii Department of Hawaiian Home Lands. The threats to V. chaceorum from habitat degradation and destruction, as well as from predation by nonnative fish are of high magnitude, because this species occurs in only one pool; thus the threats could significantly impair the survival of the species. All individuals of this species may be adversely impacted by a single dumping of trash or release of nonnative fish in its only known pool. However, the threats are nonimminent, as fish have not been introduced into the pool (nor is there any reason to believe that introduction is imminent) and a site visit in early 2005 showed there were no signs of dumping or fill. Therefore we assigned this species an LPN of 4 because the threats are of high magnitude but nonimminent, and the species is in a monotypic genus.

Troglobitic groundwater shrimp (Typhlatya monae) The following summary is based on information contained in our files including information from the petition we received on May 11, 2004. The troglobitic groundwater shrimp is a subterranean small shrimp known from Puerto Rico, Barbuda, and Dominican Republic. It is classified as a troglobite, or obligatory cave organism, of which its most extraordinary feature is the reduction or loss of vision and pigmentation. Members of the species feed on organic waste material and debris, such as bat guano. Little is known concerning the status of the species in either Barbuda or Dominican Republic. Although in Puerto Rico this species was previously found at Mona Island, currently it is known from only three caves within the Guánica Commonwealth Forest in the municipalities of Guánica, Yauco, and Guayanilla. However, the species may still be found in the reef deposit aquifers in Mona Island that have not yet been surveyed. In 1995, close to 2,000 individuals were estimated; over 95% of these were observed in only one cave. Although no systematic censuses have been conducted since 1995, the Service recently documented the presence of the species in all three caves and obtained information from Puerto Rico Commonwealth Forest personnel regarding another cave in which the species may occur.

Changes in groundwater quality, collection of rare animals, predation, limited distribution of the species, limited availability of appropriate habitat (i.e., underground aquifers within cave formations), potential reduction of food sources (e.g., mortality or reduction in bat populations), and low population numbers, potentially threaten populations of the troglobitic groundwater shrimp. However, because the known range of the species is within protected lands, and based on available information of known management activities within the Guánica Commonwealth Forest or Mona Island, the magnitude of the remaining threats, possible extraction of ground-water in Mona and vulnerability to catastrophic events, is moderate to low. The threats are not currently occurring, and therefore are nonimminent. We continue to assign a LPN of 11 to

this species.

Flowering plants

Abronia alpina (Ramshaw Meadows sand-verbena) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Abronia alpina is a small perennial herb, 2.5 to 15.2 centimeters (1 to 6 inches) across, forming compact mats with lavender-pink, trumpet-shaped, and generally fragment flowers. Abronia alpina is known from one main population center in Ramshaw Meadow on the Kern Plateau of the Sierra Nevada, California and from one subpopulation found in adjacent Templeton Meadow. The total estimated area occupied is approximately 6 hectares (15 acres). The population fluctuates from year to year without any clear trends. Population estimates from 1985-1994 range from a low of 69,652 plants in 1986 to 132,215 plants in 1987. Surveys conducted since 1994 indicate that no significant changes have occurred in population size or location, although the 2003 survey showed population numbers to be at the low end of the range. The population was last monitored in 2007.

The factors threatening Abronia alpina include natural and human alteration of habitat, hydrologic changes to the water table, and recreational use within meadow habitats. Lodgepole pine encroachment has altered the meadow and trees are becoming established within A. alpina habitat. Lodgepole pine encroachment may alter soil characteristics by increasing organic matter levels, decreasing porosity, and moderating diurnal temperature fluctuations thus reducing the competitive ability of A. alpina to persist in an environment more hospitable to other plant species. The Ramshaw Meadow ecosystem is subject to potential alteration by lowering of the water table due to downcutting of the South Fork of the Kern River (SFKR). The SFKR flows through Ramshaw Meadow, at times coming within 15 m (50 ft) of A. alpina habitat, particularly in the vicinity of five subpopulations. The habitat occupied by A. alpina directly borders the meadow system supported by the SFKR. Drying out of the meadow system could potentially affect A. alpina pollinators and/or seed dispersal agents. Established hiker, packstock, and cattle trails pass through A. alpina subpopulations. Two main hiker trails pass through Ramshaw Meadow, but were rerouted out of A. alpina subpopulations where feasible, in 1988 and 1997. Remnants of cattle trails that pass through subpopulations in several places receive occasional incidental use by horses and sometimes hikers. Cattle use, however, currently, is not a threat due to the 2001 implementation of a ten year moratorium on the Templeton allotment which prohibits cattle from all A. alpina locations. The Service is funding studies to determine appropriate conservation measures and working with the U.S. Forest Service on developing a conservation strategy for the species. The threats are of a low magnitude and nonimminent because of the conservation actions already implemented. Therefore, we assigned a LPN of 11 to this species.

Arabis georgiana (Georgia rockcress) The following summary is based on information in our files. No new information was provided in the petition we received on May 11, 2004. The Georgia rockcress grows in a variety of dry situations, including shallow soil accumulations on rocky bluffs, ecotones of gently sloping rock outcrops, and in sandy loam along eroding river banks. It is occasionally found in adjacent mesic woods, but it will not persist in heavily shaded conditions. Currently, approximately 20 populations are known from the Gulf Coastal Plain, Piedmont, and Ridge and Valley physiographic provinces of Alabama and Georgia. Populations of this species typically have a limited number of individuals over a small area. Habitat degradation, more than outright habitat destruction, is the most serious threat to the continued existence of this species. Disturbance, associated with timber harvesting, road building, and

grazing has created favorable conditions for the invasion of exotic weeds, especially Japanese honeysuckle (Lonicera japonica), in this species' habitat. A large number of the populations are currently or potentially threatened by the presence of exotics. The heritage programs in Alabama and Georgia have initiated plans for exotic control at several populations. The magnitude of threats to this species is considered to be moderate to low due to the number of populations (20) across multiple counties in two states and due to the fact that several sites are protected. However, since a number of the populations are currently being affected by nonnative plants, the threat is imminent. Thus, we assigned an LPN of 8 to this species.

Argythamnia blodgettii (Blodgett's silverbush) The following summary is based on information in our files. No new information was provided in the petition we received on May 11, 2004. Blodgett's silverbush occurs in Florida and is found in open, sunny areas in pine rockland, edges of rockland hammock, edges of coastal berm, and sometimes disturbed areas at the edges of natural areas. Plants can be found growing from crevices on limestone, or on sand. The pine rockland habitat where the species occurs in Miami-Dade County and the Florida Keys requires periodic fires to maintain habitat with a minimum amount of hardwoods. There are approximately 27 extant occurrences, 12 in Monroe County and 15 in Miami-Dade County; many occurrences are on conservation lands. However, 45 sites are recently thought to be extirpated. The estimated population size of Blodgett's silverbush in the Florida Keys, excluding Big Pine Key, is roughly 11,000; the estimated population in Miami-Dade County is 375 to 13,650 plants.

Blodgett's silverbush is threatened by habitat loss, which is exacerbated by habitat degradation due to fire suppression, the difficulty of applying prescribed fire to pine rocklands, and threats from exotic plants. Remaining habitats are fragmented. Threats such as road maintenance and enhancement, infrastructure, and illegal dumping threaten some populations. Blodgett's silverbush is vulnerable to natural disturbances, such as hurricanes, tropical storms, and storm surges. Climatic change, particularly sea level rise, is a long-term threat that is expected to continue to affect pine rocklands and ultimately reduce the extent of available habitat, especially in the Keys. Overall, the magnitude of threats is moderate because not all of the populations are affected by the threats and the species has a relatively large population size. In addition, land managers are aware of the threats from exotic plants and lack of fire, and are, to some extent, working to reduce this threat where possible. While some of the threats are occurring in some areas, the threat from development is nonimminent since most of the populations are on public land and sea-level rise is not currently affecting this species. Overall, the threats are nonimminent. Thus, we assigned an LPN of 11 to this species.

Artemisia campestris var. wormskioldii (Northern wormwood) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Historically known from eight sites, northern wormwood is currently known from two populations in Klickitat and Grant Counties, Washington. This plant is restricted to exposed basalt, cobbly-sandy terraces, and sand habitat along the shore and on islands in the Columbia River. The two sites are separated by 200 miles (322 kilometers) of the Columbia River and three large hydroelectric dams. The Klickitat County population is declining; the status is unclear for the Grant County population; however, both are vulnerable to environmental variability. Surveys have not detected any additional plants.

Threats to northern wormwood include direct loss of habitat through regulation

of water levels in the Columbia River and placement of riprap along the river bank; trampling of plants as a result of recreational use; competition with nonnative invasive species; burial by wind and water-borne sediments; small population sizes; susceptibility to genetic drift and inbreeding; and the potential for hybridization with two other species of Artemisia. Ongoing conservation actions have reduced trampling, but have not eliminated or reduced the other threats at the Grant County site. The magnitude of threat is high for this subspecies because the only two remaining populations are widely separated and distributed such that one or both populations could be eliminated by a single disturbance. The threats are imminent because recreational use is ongoing, invasive nonnative species occur at both sites, erosion of the substrate is ongoing at the Klickitat County site, and high water flows are random, naturally occurring events that may occur unpredictably in any year. Therefore, we have retained an LPN of 3 for this subspecies.

Astragalus tortipes (Sleeping Ute milkvetch) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Sleeping Ute milkvetch is a perennial plant that grows only on the Smokey Hills layer of the Mancos Shale Formation on the Ute Mountain Ute Indian Reservation in Montezuma County, Colorado. In 2000, 3,744 plants were recorded at 24 locations covering 500 acres within an overall range of 64,000 acres. Available information from 2000 indicates that the species remains stable. Previous and ongoing threats from borrow pit excavation, off-highway vehicles, irrigation canal construction, and a prairie dog colony have had minor impacts that reduced the range and number of plants by small amounts. Off-highway vehicle use of the habitat is reportedly increasing. Oil and gas development is active in the general area, but the Service has received no information from the Tribe to indicate whether there is development within the habitat for the plants. The Tribe reported this year that the status of the species remains unchanged, and that a management plan for the species is currently in draft form. The threats are moderate in magnitude, since they have had minor impacts and, based on information we have, the population appears to be stable. While ORV use is currently occurring at a rate that causes minor impacts and may be increasing, oil and gas production is not known to currently occur in the areas where this species exists. Overall, we conclude threats are nonimminent. Therefore, we assigned an LPN of 11 to this species.

Bidens amplectens (Kookooalu) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Bidens campylotheca ssp. pentamera (Kookooalu) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This subspecies is an erect, perennial herb found in Cheirodendron-Metrosideros (olapa-ohia) montane wet forest on Maui, Hawaii. This subspecies is known from four populations with a total of approximately 180 individuals. Bidens campylotheca ssp. pentamera is threatened by feral pigs that degrade and destroy habitat, and by nonnative plants that compete for habitat. Feral pigs have been fenced out of one population at Kipahulu. These ongoing conservation efforts (fencing and nonnative plant removal) benefit only one of the four known populations as the remaining populations on east and west Maui are still affected by these threats. Habitat destruction and nonnative plants continue to be high-magnitude threats, because they threaten the continued existence of this subspecies. In addition, threats to B. campylotheca ssp. pentamera are imminent because they are ongoing in three populations. Therefore, we retained an LPN of 3 for this subspecies.

Bidens campylotheca ssp. waihoiensis (Kookooalu) The following summary is based

on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Bidens campylotheca ssp. waihoiensis is an erect, perennial herb found in wet Acacia-Metrosideros (koa-ohia) forest on Maui, Hawaii. Bidens campylotheca ssp. waihoiensis is known from two populations, totaling 300 to 350 individuals. It is threatened by feral pigs and cattle, which eat this plant and degrade and destroy habitat, and by nonnative plants that outcompete and displace it. Conservation measures such as strategic fences and control of nonnative plants benefit the plants in Kipahulu Valley; however, the individuals in Waihoi Valley are still affected by these threats. Since foraging and habitat destruction result in direct mortality, they pose a high-magnitude threat to the small populations. They are also a imminent threat because they are ongoing in the Wahoi Valley. Therefore, we retained an LPN of 3 for this subspecies.

Bidens conjuncta (Kookooalu) The following summary is based on information in our files. No new information was provided in the petition we received on May 11, 2004. Bidens conjuncta is an erect, perennial herb found in Metrosideros-Dicranopteris-Cheirodendron (ohia-uluhe-olapa) lowland to montane wet forest and shrubland on Maui, Hawaii. Eight populations are known, totaling fewer than 3,000 individuals, scattered throughout upper elevation drainages of west Maui. Although the overall range of the species has not changed, the number of individuals has declined over the last decade or so. This species is threatened by pigs that degrade and destroy habitat, and eat vegetative parts and fruit of B. conjuncta, and by nonnative plants that outcompete and displace it. Feral pigs have been fenced out of the lower elevation populations in the west Maui mountains and in the summit areas and nonnative plants have been greatly reduced in the fenced areas. Because these conservation efforts have alleviated the threats in several portions of the range, the magnitude of the threats are moderate. However, these threats are imminent because they are still ongoing in portions of this species range. Therefore, we retained an LPN of 8 for this species.

Bidens micrantha ssp. ctenophylla (Kookooalu) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This subspecies is an erect, perennial herb found in open mixed shrubland to dry Metrosideros (ohia) forest on the island of Hawaii, Hawaii. This subspecies is endemic to the island of Hawaii, where it is restricted to an area of less than 10 square miles (26 square kilometers). Bidens micrantha ssp. ctenophylla is known from four wild and four outplanted populations totaling approximately 130 to 140 individuals, the majority of which occur in only two (wild) populations. This subspecies is threatened by fire and nonnative plants, and two populations are threatened by residential and commercial development. The threats to B. micrantha ssp. ctenophylla from fire and nonnative plants are of a high magnitude and imminent because they are occurring range-wide, they threaten the continued existence of the species, and no efforts for their control have been undertaken. In addition, two populations are also threatened by development. Therefore, we retained an LPN of 3 for this subspecies.

Brickellia mosieri (Florida brickell-bush) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species is restricted to pine rocklands of Miami-Dade County, Florida. This habitat requires periodic prescribed fires to maintain the low understory and prevent encroachment by native tropical hardwoods and exotic plants, such as Brazilian pepper. Only one large population is known to exist, plus 18 other occurrences each containing less than 100 individuals. Ten of these occurrences are on conservation lands.

This species is threatened by habitat loss, which is exacerbated by habitat degradation due to fire suppression, the difficulty of applying prescribed fire to pine rocklands, and threats from exotic plants. Remaining habitats are fragmented. The species is vulnerable to natural disturbances, such as hurricanes, tropical storms, and storm surges. Due to its restricted range and the small sizes of most isolated occurrences, this species is vulnerable to environmental (catastrophic hurricanes), demographic (potential episodes of poor reproduction), and genetic (potential inbreeding depression) threats. Ongoing conservation efforts includes a project aimed at facilitating restoration and management of privately owned pine rockland habitats in Miami-Dade County, and a project funded in 2008 to restore suitable habitat and reintroduce and establish new populations of the plants in pine rocklands. The Service is also pursuing additional habitat restoration projects, which could help further improve the status of the species. Because of these efforts, the overall magnitude of threats is moderate. The threats are ongoing and thus imminent. We assigned this species an LPN of 8.

Calamagrostis expansa (Maui reedgrass) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species is a robust, short-rhizomatous perennial found in wet forest, open bogs, and bog margins on the islands of Maui and Hawaii, Hawaii. Historically rare, C. expansa was restricted to wet forest and bogs on Maui. Its historical status is unknown on Hawaii. Currently, this species is known from 11 populations totaling approximately 230 individuals on Maui, and was recently discovered in eight populations totaling approximately 350 individuals on the island of Hawaii. Calamagrostis expansa is threatened by pigs that degrade and destroy habitat and by nonnative plants that outcompete and displace it. Feral pigs have been fenced out of most of the west Maui populations, and nonnative plants have been reduced in the fenced areas. However, the threats are not controlled and are ongoing in the remaining unfenced populations on Maui and at all of the populations on the island of Hawaii. Therefore, overall the threats from feral pigs and nonnative plants are of a high magnitude and imminent for C. expansa, and we retained an LPN of 2 for this species.

Calamagrostis hillebrandii (Hillebrand's reedgrass) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Calamagrostis hillebrandii is a slender, short-rhizomatous perennial found in Metrosideros-Machaerina (ohia-uki) montane wet bog or Metrosideros-Rhynchospora-Oreobolus (ohia-kuolohia-oreobolus) mixed bog on Maui, Hawaii. This species is known from two populations of fewer than 2,000 individuals, restricted to the bogs of west Maui. There is an unconfirmed report of C. hillebrandii from central Molokai. This species is currently threatened by pigs that degrade and destroy habitat and nonnative plants that outcompete and displace it. A portion of one population is protected by an ungulate exclosure fence while the other population may indirectly benefit from conservation actions for ungulate control and control of nonnative plants conducted in a nearby preserve. The threats are imminent because they are ongoing in one of the two known populations. Because they threaten the continued existence of the species, the threats are high in magnitude. Therefore, we retained an LPN of 2 for this species.

Calliandra locoensis (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Calliandra locoensis is a spiny, leguminous shrub currently known from five localities within the Susúa Commonwealth Forest in the municipalities of Yauco and Sabana Grande, in

southwestern Puerto Rico. Surveys in 2007 estimated 1,600 adult plants with numerous seedlings. Twenty-five native species of Calliandra have been reported for the Antilles, three of which are native to Puerto Rico, including C. locoensis. This species is endemic to Puerto Rico, and was discovered in 1991 during a study of the flora of the Susúa Commonwealth Forest. It is found on shallow, serpentine soils with low nutrients, high drainage, and low fertility. Much of the vegetation in the forest was cut for wood, cultivation, livestock grazing, and charcoal production, prior to its designation as a public forest. Calliandra locoensis exhibits a low degree of self-compatibility in pollination tests. Seeds have short viability period, do not appear to have a biotic dispersal agent (dispersed by dehiscence (natural bursting open)), and require mesic conditions for germination, which may be factors in the species' limited distribution.

The restricted distribution, forest management practices (accidental trampling, brush clearing, trail maintenance), forest fires (natural or manmade), and catastrophic natural events (hurricanes, floods, mudslides), threaten this species. The magnitude of threat to Calliandra locoensis is high due to its restricted distribution, which makes it vulnerable to catastrophic events, and apparent low dispersal capability; and the threats are nonimminent given that the populations are found within protected lands and there are no known projects or management activities planned that would destroy the known populations. Therefore, we assigned an LPN of 5 to this species.

Calochortus persistens (Siskiyou mariposa lily) The following summary is based on information contained in our files and the petition we received on September 10, 2001. The Siskiyou mariposa lily is a narrow endemic that is restricted to three disjunct ridge tops in the Klamath-Siskiyou Range on the California-Oregon border. The southern-most occurrence of this species is comprised of nine separate sites on approximately 10 hectares (ha) (24.7 acres (ac)) of Klamath National Forest and privately owned lands that stretch for 6 kilometers (km) (3.7 miles (mi)) along the Gunsight-Humbug Ridge, Siskiyou County, California. In 2007, a new occurrence was confirmed in the locality of Cottonwood Peak and Little Cottonwood Peak, Siskiyou County. The northern-most occurrence consists of not more than five Siskiyou mariposa lily plants that were discovered in 1998, on Bald Mountain, west of Ashland, Jackson County, Oregon.

Major threats include competition and shading by native and nonnative species fostered by suppression of wild fire; increased fuel loading and subsequent risk of wild fire; fragmentation by roads, fire breaks, tree plantations, and radio-tower facilities; maintenance and construction around radio towers and telephone relay stations located on Gunsight Peak and Mahogany Point; and soil disturbance, direct damage, and exotic weed and grass species introduction as a result of heavy recreational use and construction of fire breaks. Dyer's woad (Isatis tinctoria), an invasive, nonnative plant that may prevent germination of Siskiyou mariposa lily seedlings, is now found throughout the southern-most California occurrence, affecting 75 percent of the known lily habitat on Gunsight-Humbug Ridge. Forest Service staff and the Klamath-Siskiyou Wildlands Center cite competition with dyer's woad as a significant and chronic threat to the survival of Siskiyou mariposa lily.

The combination of restricted range, extremely low numbers (five plants) in one of three disjunct populations, poor competitive ability, short seed dispersal distance, slow growth rates, low seed production, apparently poor survival rates in some years, herbivory, and competition from exotic plants threaten the continued existence of this species. These threats are of high magnitude because of their potential to negatively affect the overall survival of the species.

Because the threats from herbivory and competition from exotic plants are not anticipated in the immediate future, and the threats from low seed production and survival are longer-term threats, overall the threats are nonimminent. Therefore, we assigned a listing priority number of 5 to this species.

Calyptranthes estremerae (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Calyptranthes estremerae is a small tree from the subtropical moist forest of northwestern Puerto Rico, in the municipalities of Camuy, Utuado, and Arecibo. Calyptranthes estremerae was only known from several individuals found near the recreation area adjacent to the Camuy Caves, but specimens were later found within the Río Abajo Commonwealth Forest (up to 50 individuals) at a site affected by the construction of Highway PR 10 in 1995. At the present time, a minimum of 100 specimens of C. estremerae are estimated for the Rio Abajo Commonwealth Forest and an undetermined number in the Camuy area. The magnitude of threat to C. estremerae is high, due to restricted distribution and small number of individuals, and the potential destruction of specimens and habitat from catastrophic natural events and the expansion of recreational facilities. However, these threats are not imminent because the largest known population of C. estremerae is found within protected lands, there are no known recreational facility projects planned that would destroy the sites, and the species can be transplanted successfully. Therefore, we assigned an LPN of 5 to Calyptranthes estremerae.

Canavalia pubescens (Awikiwiki) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Awikiwiki is a perennial climber found in lowland dryland forest on Maui and Lanai, and is possibly on the island of Niihau, Hawaii. This species is known from five populations totaling a little over 200 individuals. This species is threatened by development (Maui), goats (Maui) and axis deer (Maui and Lanai) that degrade and destroy habitat, and by nonnative plants that outcompete and displace native plants (both islands). An ungulate exclosure fence protects six individuals of C. pubescens, and weed control is ongoing at this location on Maui. This species is represented in two ex-situ collections. Threats to this species from feral goats, axis deer, and nonnative plants are ongoing, or imminent, and of high magnitude because they significantly affect the species throughout its range. Therefore, we retained an LPN of 2 for this species.

Castilleja christii (Christ's paintbrush) The following summary is based on information contained in our files and the petition we received on January 2, 2001. Castilleja christii is found in one population covering approximately 85 ha (220 ac) on the summit of Mount Harrison in Cassia County, Idaho. This endemic species is considered a hemiparasite (dependent on the health of their surrounding native plant community), and it grows in association with subalpine meadow and sagebrush habitats. The population may be large (greater than 10,000 individual plants); however, the species is considered to be subject to large variations in annual abundance and an accurate current population estimate is not available. Monitoring indicates that reproductive stems per plant and plant density declined between 1995 and 2007. The primary threat to the species is the nonnative invasive plant smooth brome (Bromus inermis). Despite cooperative Forest Service and Service efforts to control smooth brome in 2005, 2006, and 2007, it still persists and has increased in some C. christii habitats. Other threats to C. christii from recreational use appear to be mostly seasonal and affect only a small portion of the population, although they too are imminent. The magnitude of the threats to this species is moderate at this time because,

although the smooth brome control efforts have not been effective, the Service and Forest Service are continuing their efforts in order to protect this potentially large population of plants. The threat from smooth brome is imminent because the threat still persists at a level that affects the native plant communities that provide habitat for C. christii. Thus, we assign an LPN of 8 to this species.

Chamaecrista lineata var. keyensis (Big Pine partridge pea) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This pea is endemic to the lower Florida Keys, and restricted to pine rocklands and hardwood hammock edges, and roadsides and firebreaks within these ecosystems. Historically, it was known from Big Pine, No Name, Ramrod, and Cudjoe Keys (Monroe County, Florida). In 2005, a small population was detected on lower Sugarloaf Key, but this population was apparently extirpated later in 2005, due to the effects of Hurricane Wilma. It presently occurs on Big Pine Key, plus a very small population found on Cudjoe Key in 2005. It is fairly well distributed in Big Pine Key pine rocklands, which encompass approximately 580 hectares (1,433 acres), approximately 360 hectares (890 acres) of which are within the Service's National Key Deer Refuge (NKDR). Over 80% of the population probably exists on NKDR, with the remainder distributed among State, County, and private properties.

Hurricane Wilma (October 2005) resulted in a storm surge that covered most of Big Pine Key with sea water. In plots sampled after Wilma, frequency of occurrence was less than a third and density was less than half that found in plots sampled before Wilma.

Pine rockland communities are maintained by relatively frequent fires. In the absence of fire, shrubs and trees encroach on pine rockland and the subspecies is eventually shaded out. NKDR has a prescribed fire program, although with many constraints on implementation. Habitat loss due to development was historically the greatest threat to the pea. Much of the remaining habitat is now protected on public lands. Absence of fire now appears to be the greatest of the deterministic threats. Given the recent increase in hurricane activity, storm surges are the greatest of the stochastic threats. The small range and patchy distribution of the subspecies increases risk from stochastic events. Additional threats include sea level rise, restricted range, invasive exotic plants, roadside dumping, loss of pollinators, seed predators, and development. The above description of threats also apply to Chamaesyce deltoidea ssp. serpyllum, below.

We maintain the previous assessment that hurricane storm surges, lack of fire, and limited distribution results in a moderate magnitude of threat because a large part of the range is on conservation lands wherein threats are being controlled although fire management is at much slower rate than is required. The immediacy of hurricane threats is difficult to characterize. Sea level rise remains uncontrolled, but is nonimminent regarding most of the habitat area or population on an annual basis. Overall, the threats from limited distribution and inadequate fire management are imminent since they are ongoing. Therefore, we retained an LPN of 9 for Big Pine partridge pea.

Chamaesyce deltoidea pinetorum (Pineland sandmat) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The pineland sandmat in only known from Miami-Dade County, Florida. The largest occurrence, estimated at more than 10,000 plants, is located on Long Pine Key within Everglades National Park. All

other occurrences are smaller and are in isolated pine rockland fragments in heavily urbanized Miami-Dade County. Occurrences on private lands and on one county-owned parcel are at risk from development and habitat degradation and fragmentation. All occurrences of the species are threatened by habitat loss and degradation due to fire suppression, the difficulty of applying prescribed fire, and exotic plants. These threats are severe within small and unmanaged fragments in urban areas. However, the threats of fire suppression and exotics are reduced on lands managed by the National Park Service. Another threat is hydrology changes. Hydrology has been altered within Long Pine Key due to artificial drainage, which lowered ground water, and construction of roads, which either impounded or diverted water. Regional water management intended to restore the Everglades could negatively affect the pinelands of Long Pine Key. At this time, we do not know whether the proposed restoration and associated hydrological modifications will have a positive or negative effect on pineland sandmat. This narrow endemic may be vulnerable to catastrophic events and natural disturbances, such as hurricanes. Conditions related to climate change, particularly sea level rise, may be a factor over the long-term. Overall, the magnitude of threats to this species is moderate, since by applying regular prescribed fire, the National Park Service has kept Long Pine Key's pineland vegetation intact and relatively free of exotic plants, and the extent to which proposed restoration will negatively affect this subspecies are unclear. Overall, the threats are nonimminent since fire management is regularly conducted, and sea level rise and hurricanes are longer-term threats. Therefore, we assigned a LPN of 12 to this subspecies.

Chamaesyce deltoidea ssp. serpyllum (Wedge spurge) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The most recent surveys were conducted in 2005. Additional surveys were initiated in 2008. Wedge spurge is a small prostrate herb. It was historically, and remains, restricted to pine rocklands on Big Pine Key in Monroe County, Florida. Pine rocklands encompass approximately 580 hectares (1,433 acres) on Big Pine Key, approximately 360 hectares (890 acres) of which are within the Service's National Key Deer Refuge (NKDR). Most of the species' range falls within the NKDR, with the remainder on State, County, and private properties. It is not widely dispersed within the limited range. Occurrences are sparser in the southern portion of Big Pine Key, which contains smaller areas of NKDR lands than does the northern portion. Wedge spurge inhabits sites with low woody cover (e.g., low palm and hardwood densities) and usually, exposed rock or gravel. See description of threats above under Chamaecrista lineata var. keyensis

We maintain the previous assessment that low fire return intervals plus hurricane-related storm surges, in combination with a limited, fragmented distribution and threats from sea level rise, results in a moderate magnitude of threat, in part, because a large part of the range is on conservation lands wherein threats can be substantially controlled. The immediacy of hurricane threats is difficult to categorize. Sea level rise remains uncontrolled, but over much of the range is nonimminent compared to other prominent threats. Threats resulting from limited fire occurrences are imminent. Since major threats are ongoing, overall, the threats are imminent. Therefore, we retained an LPN of 9 for this subspecies.

Chorizanthe parryi var. fernandina (San Fernando Valley spineflower) The following summary is based on information contained in our files and the petition we received on December 14, 1999. Chorizanthe parryi var. fernandina is a low growing herbaceous annual plant in the buckwheat family. The plant currently is known from two disjunct localities in southern California: the

first is in the southeastern portion of Ventura County on a site within the Upper Las Virgenes Canyon Open Space Preserve, formerly known as Ahmanson Ranch, and the second is in an area of southwestern Los Angeles County known as Newhall Ranch. Investigations of historical locations and seemingly suitable habitat within the range of the species have not revealed any other occurrences.

The threats currently facing San Fernando Valley spineflower include threatened destruction, modification, or curtailment of its habitat or range, and other natural or manmade factors. One of the two populations (Upper Las Virgenes Canyon Open Space Preserve) is in permanent, public ownership and is being managed by an agency that is working to conserve the plant; however, the use of adjacent habitat for filming movies has recently been brought to our attention; the potential impacts to C. parryi var. fernandina have not yet been evaluated. We will be working with the landowners to manage the site for the benefit of C. parryi var. fernandina. The other population (Newhall Ranch) is under the threat of development; however, a Candidate Conservation Agreement (CCA) is being developed with the landowner, and it is possible that the remaining plants can also be conserved. Until such an agreement is finalized, the threat of development and the potential damage to the Newhall Ranch population still exists, as shown by the destruction of some plants during installation of an agave farm. Furthermore, cattle grazing on Newhall Ranch may be a current threat. Cattle grazing may harm C. parryi var. fernandina by trampling and soil compaction. Grazing activity could also alter the nutrient content of the soils through fecal inputs, which in turn may favor the growth of other plant species that would otherwise not grow so readily on the mineral-based soils. Over time, changes in species composition may render the sites less favorable for the persistence of C. parryi var. fernandina. Invasive nonnative plants, including grasses, could potentially displace it from available habitat; compete for light, water, and nutrients; and reduce survival and establishment.

Chorizanthe parryi var. fernandina is particularly vulnerable to extinction due to its concentration in two isolated areas. The existence of only two areas of occurrence, and a relatively small range, makes it highly susceptible to extinction or extirpation from a large part of its range due to possible development and/or other habitat modification, or random events such as fire, drought, erosion, or other occurrences. We retained an LPN of 6 for C. parryi var. fernandina due to a high magnitude of nonimminent threats.

Chromolaena frustrata (Cape Sable thoroughwort) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species is found most commonly in open sun to partial shade at the edges of rockland tropical hammock and in coastal rock barrens. There are nine extant occurrences located at five islands in the Florida Keys and two locations within Everglades National Park (ENP). The plant has been extirpated from half of the islands where it occurred. Prior to Hurricane Wilma in 2005, the population was estimated at roughly 5,000 individuals, with all but 500 occurring on one privately owned island. More recently, an estimate of 1,500 plants was given for areas within ENP.

This species is threatened by habitat loss and modification, even on public lands, and habitat loss and degradation due to threats from exotic plants at almost all sites. The species is vulnerable to natural disturbances, such as hurricanes, tropical storms, and storm surges. While these factors may also work to maintain coastal rock barren habitat in the long-term, Hurricane Wilma appeared to have had severe impacts, at least in the short-term. Occurrences probably declined due to inundation of its coastal barren and rockland hammock habitats in the short-term; long-term effects on this species are unknown. Sea

level rise is considered a major threat that will continue. Potential effects from other changes in fresh water deliveries and the construction of the Buttonwood Canal are unknown. Problems associated with small population size and isolation are likely major factors, as occurrences may not be large enough to be viable; this narrowly endemic plant has uncertain viability at most locations, especially following Hurricane Wilma. Thus, these factors constitute a high magnitude of threat. The threats of small population size, isolation, and uncertain viability are imminent because they are ongoing. As a result, we assigned an LPN of 2 to this species.

Consolea corallicola (Florida semaphore cactus) The following summary is based on information in our files. No new information was provided in the petition we received on May 11, 2004. The Florida semaphore cactus is endemic to the Florida Keys, and was discovered on Big Pine Key in 1919, but that population was extirpated as a result of road building and poaching. This cactus grows close to salt water on bare rock with a minimum of humus soil cover in or along the edges of hammocks near sea level. The species is known to occur naturally only in two areas, Swan Key within Biscayne National Park and Little Torch Key. Outplantings have been attempted in several locations in the upper and lower Keys; however, success has been low. Few plants remain in the population at The Nature Conservancy's Torchwood Hammock Preserve on Little Torch Key. During monitoring work conducted in 2005, a total of 655 plants were documented at the Swan Key population. The cactus does not propagate sexually, and asexual reproduction is the main life history strategy of this species. Recent genetic studies have shown no variation within populations and very limited variation between populations. Findings support the conclusion that the Swan Key (upper Keys), Little Torch Key, and Big Pine Key (outplanting; lower Keys) populations are clonally derived and genetically distinct from each other. Studies examining the reproductive biology of the species indicate that all extant wild and cultivated plants are male.

The causes for the population decline of this species include destruction or modification of habitat, predation from nonnative Cactoblastis cactorum moths and disease, poaching and vandalism, sea level rise, and hurricanes. Because of low population numbers, lack of variation between and within populations, and reproductive problems, the threats are of high magnitude. The numerous threats are ongoing and therefore, are imminent. Thus, we assigned this species an LPN of 2.

Cordia rupicola (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Cordia rupicola, a small shrub, has been described from southwestern Puerto Rico (Peñuelas and Guánica), Vieques Island, and Anegada Island (British Virgin Islands). All four sites lay within the subtropical dry forest life zone overlying a limestone substrate. Cordia rupicola has a restricted distribution in the subtropical dry forest of southwestern Puerto Rico and Vieques Island. Currently, approximately 226 individuals are known from 3 locations: Peñuelas and Guanica Commonwealth Forests and Vieques National Wildlife Refuge. Additionally, the species is reported as common on Anegada Island.

However, the species is threatened by residential and commercial development on Anegada Island and is also vulnerable to natural (e.g., hurricanes) or manmade (e.g., human-induced fires) threats throughout most of its range. All of these threats have a significant effect on the survival of the species. For these reasons, the magnitude of the current threats is high. Additionally, all sites are located in xeric environment vulnerable to human-induced fires. Only a few

individuals are located in protected lands managed for conservation by the Puerto Rico Department of Natural and Environmental Resources or the Service. The population of C. rupicola on Anegada Island is currently in good standing. The threats this species faces are ones that will arise in the future if conservation measures are not implemented and long-term impacts are not averted. For these reasons, threats to the species as a whole are nonimminent. Therefore, we assigned an LPN of 5 to this species.

Cyanea asplenifolia (Haha) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Cyanea asplenifolia is a shrub found in Acacia-Metrosideros (koa-ohia) forest on Maui, Hawaii. Currently, this species is known from eight populations totaling fewer than 145 individuals. Cyanea asplenifolia is threatened by pigs, goats, and cattle that degrade and destroy habitat and by nonnative plants, such as Australian tree fern, that outcompete and displace it. This species is likely threatened by predation by axis deer and by feral ungulates, rats, and slugs that may directly prey upon and defoliate individuals. Pig and goat exclusion fences protect individuals of two of the known populations of this species, and nonnative plants have been reduced in one fenced area; however, continued monitoring of these fences will be necessary, as feral ungulates from surrounding areas can easily access unmaintained fenced areas. This species is represented in three ex-situ collections. The threats continue to be of a high magnitude because they significantly affect the species resulting in direct mortality or reduced reproductive capacity. The threats are imminent because they are ongoing in at least two of the eight known populations. Therefore, we retained an LPN of 2 for this species.

Cyanea calycina (Haha) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Cyanea kunthiana (Haha) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Cyanea kunthiana is a shrub found in closed Metrosideros-Dicranopteris (ohia-uluhe) montane wet forest on Maui, Hawaii. The historic range of C. kunthiana was wet forest on the island of Maui. Currently, C. kunthiana is declining throughout its range, and is known from 38 populations totaling between 475 and 675 individuals. This species is threatened by pigs that directly prey upon the plants and degrade and destroy habitat, and by nonnative plants that outcompete and displace it. Potential threats to this species include rats and slugs that may directly prey upon and defoliate individuals. Predation and habitat destruction significantly affect the continued existence of the species. While large-scale fencing, ungulate removal, and invasive species control measures are underway in areas in which five of the current populations exist, these efforts have not served to completely remove these threats, and there are no efforts to control the ongoing and imminent threats to the remaining 33 populations. Therefore, the threats continue to be of a high magnitude to C. kunthiana, and are imminent for more than eighty percent of the populations. Therefore, we retained an LPN of 2 for this species.

Cyanea lanceolata (Haha) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Cyanea obtusa (Haha) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Cyanea obtusa is a shrub found in Metrosideros polymorpha (ohia) mixed mesic forest on Maui, Hawaii. This species is known from two populations with a combined total of fewer than 24 individuals. Cyanea obtusa is threatened by

feral goats, pigs, and cattle that degrade and destroy habitat, and by nonnative plants that outcompete and displace it. Potential threats include fire, and rats and slugs that may directly prey upon and defoliate individuals of C. obtusa. Feral pigs have been fenced out of one population of this species, with nonnative plant control in the fenced area. Although one population of C. obtusa has been fenced and is undergoing weed control, there are no efforts to control the ongoing and imminent threats to the other population. The threats continue to be of a high magnitude for C. obtusa because they significantly affect the species resulting in direct mortality or reduced reproductive capacity, and the threats are ongoing. Therefore, we retained an LPN of 2 for this species.

Cyanea tritomantha (Aku) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Cyanea tritomantha is a palm-like tree found in Metrosideros-Cibotium (ohia-hapuu) montane wet forest on the island of Hawaii. This species is known from 16 populations with a total of approximately 300 to 400 individuals. Cyanea tritomantha is threatened by pigs and cattle that degrade and destroy habitat, and nonnative plants that outcompete and displace it. Potential threats to this species include predation by rats and slugs that may directly prey upon and defoliate individuals, and human trampling of individuals located near trails. Feral pigs and cattle have been fenced out of three populations of C. tritomantha, and nonnative plants have been reduced in the fenced areas. Although three populations of C. tritomantha have been fenced and weeds are being controlled in these fenced areas, there are no efforts to control the ongoing and imminent threats to the other 13 populations. The threats continue to be of a high magnitude to C. tritomantha because they significantly affect the species resulting in direct mortality or reduced reproductive capacity. They are ongoing and therefore imminent for more than seventy-five percent of the population where no control measures have been implemented. Because the threats continue to be of a high magnitude and are imminent for the unmanaged populations, we retained an LPN of 2 for this species.

Cyrtandra filipes (Haiwale) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Haiwale is a shrub found in lowland to montane wet forest on Maui and Molokai, Hawaii. Historically rare, C. filipes was found in southeastern Molokai and west Maui. Currently, this species is known from 10 populations, 3 on Molokai and 7 on west Maui, totaling approximately 2,000 individuals. There is some question as to the true identity of the Maui populations, which do not fit the description of the species precisely. If, upon further taxonomic study, the Maui populations are determined not to be this species, then it is even rarer, with only the Molokai populations of a few individuals remaining. Cyrtandra filipes is threatened by pigs, goats, and deer that degrade and destroy habitat, by nonnative plants that outcompete and displace it, and potentially by rats that directly prey on it. Feral pigs have been fenced out of one of the populations of C. filipes on Maui, and strategic fencing for axis deer is under construction on west Maui, but deer are able to jump over most pig exclusion fences so they are still considered a threat. Nonnative plants are being reduced in the population that is fenced but all populations are potentially threatened by rats. The threats from pigs and nonnative plants are of a high magnitude because of their severity and the fact that they occur in eight of the 10 known populations. In addition, these threats are imminent because they are ongoing. Therefore, we retained an LPN of 2 for this species.

Cyrtandra kaulantha (Haiwale) We have not updated our assessment for this

species, as we are currently developing a proposed listing rule.

Cyrtandra oxybapha (Haiwale) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Cyrtandra oxybapha is a shrub found in Metrosideros polymorpha-Cheirodendron trigynum (ohia-olapa) montane wet forest to mesic Acacia-Metrosideros (koa-ohia) forest on Maui, Hawaii. Currently, this species is known from two populations totaling 73 to 123 individuals on west Maui. This species is threatened by pigs, goats, and cattle that degrade and destroy habitat, and by nonnative plants that outcompete and displace it. Fire is a likely threat at the Kahikinui population. The individuals within the fence at Kahikinui benefit from management actions; however, the remaining individuals there and on west Maui are threatened by pigs, goats, cattle, and likely threatened by fire. The threats are of a high magnitude because of their severity and are imminent since they are ongoing. Therefore, we retained an LPN of 2 for C. oxybapha.

Cyrtandra sessilis (Haiwale) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Dalea carthagenensis floridana (Florida prairie-clover) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Dalea carthagenensis var. floridana occurs in Big Cypress National Preserve (BCNP) in Monroe and Collier Counties, Florida. It is also known from small populations in Miami-Dade County. There are a total of nine extant occurrences, most of which are on conservation land. Existing occurrences are extremely small and may not be viable, especially those in Miami-Dade County. Remaining habitats are fragmented. This plant is threatened by habitat loss and degradation due to fire suppression, the difficulty of applying prescribed fire to pine rocklands, and threats from exotic plants. Damage to plants by off-road vehicles is a serious threat within the BCNP; the threat from illegal mountain-biking at the R. Hardy Matheson Preserve has been reduced. One location within BCNP is threatened by changes in mowing practices; this threat is considered to be low. This species is being parasitized by the introduced insect lobate lac scale at some localities (e.g., R. Hardy Matheson Preserve), but we do not know the extent of this threat. This plant is vulnerable to natural disturbances, such as hurricanes, tropical storms, and storm surges. Due to its restricted range and the small sizes of most isolated occurrences, this species is vulnerable to environmental (catastrophic hurricanes), demographic (potential episodes of poor reproduction), and genetic (potential inbreeding depression) threats. The magnitude of threats is high, and threats are imminent because of the limited number of occurrences and the small number of individual plants at each occurrence. In addition, even though many sites are on conservation lands, these plants still face significant ongoing threats. Therefore, we have assigned an LPN of 3 to this subspecies.

Dichanthelium hirstii (Hirsts' panic grass) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. D. hirstii is a perennial grass that produces erect leafy flowering stems from May to October. D. hirstii occurs in coastal plain intermittent ponds, usually in wet savanna or pine barren habitats and is found at only two sites in New Jersey, one site in Delaware, and one site in North Carolina. While all four extant D. hirstii populations are located on public land or privately owned conservation lands, natural threats to the species from encroaching vegetation and fluctuations in climatic conditions remain of concern and may be exacerbated by anthropomorphic factors occurring

adjacent to the species' wetland habitat. Given the low numbers of plants found at each site, even minor changes in the species' habitat could result in local extirpation. Loss of any known sites could result in a serious protraction of the species' range. However, the most immediate and severe of the threats to this species (i.e., ditching of the Laboundsky Pond site, and encroachment of aggressive vegetative competitors) have been curtailed or are being actively managed by The Nature Conservancy at one New Jersey site and by the Delaware Division of Fish and Wildlife and Delaware Natural Heritage Program at the Assawoman Pond, Delaware site. Based on nonimminent threats of a high magnitude, we retain an LPN of 5 for this species.

Digitaria pauciflora (Florida pineland crabgrass) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Florida pineland crabgrass occurs in the pineland/prairie ecotones and prairies in Miami-Dade and Monroe Counties, Florida. Pine rocklands in Miami-Dade County have largely been destroyed by residential, commercial, and urban development and agriculture. Most remaining habitat has been negatively altered, and this species has been extirpated from much of its historical range, including extirpation from all areas outside of National Parks. Two large occurrences remain within Everglades National Park and Big Cypress National Preserve. While privately owned pine rocklands and prairies are at risk to development, the plants on Federal lands are protected from this threat.

This species is threatened by habitat loss and degradation due to fire suppression, the difficulty of applying prescribed fire to pine rocklands, and exotic plants. Since the only remaining populations are on lands managed by the National Park Service, the threats of fire suppression and exotics are somewhat reduced. The presence of the exotic Old World climbing fern is of particular concern due to its ability to spread rapidly. In Big Cypress National Preserve, plants have been threatened by off-road vehicle use. Another threat is hydrology changes. Hydrology has been altered within Long Pine Key due to artificial drainage, which lowered ground water, and construction of roads, which either impounded or diverted water. Regional water management intended to restore the Everglades has the potential to affect the pinelands of Long Pine Key, where a large population occurs. At this time, it is not known whether Everglades restoration will have a positive or negative effect. This narrow endemic may be vulnerable to catastrophic events and natural disturbances, such as hurricanes. Sea level rise will likely be a factor over the long-term. Overall, the magnitude of threats is high because occurrence of the species within the National Park has not eliminated such threats as exotic plants and off-road vehicle use, which may negatively affect this species throughout its range. However, the majority of threats are nonimminent as they are long-term in nature (water management, hurricanes, and sea-level rise). Therefore, we assigned an LPN of 5 for this species.

Echinomastus erectocentrus var. acunensis (Acuna cactus) The following summary is based on information contained in our files and the petition we received on October 30, 2002. The Acuna cactus is known from six sites in Arizona and Mexico. It occurs on well-drained gravel ridges and knolls on granite soils in Sonoran Desert scrub association at 13002000 feet elevation.

Habitat destruction has been a threat in the past and is a potential future threat to this species. New roads and illegal activities have not yet directly affected the cactus populations at Organ Pipe Cactus National Monument, Arizona, but areas in close proximity to these known populations have been altered. Cactus populations located in the Florence area (Arizona) have not been

monitored, and these populations may be in danger of habitat loss due to recent urban growth in the area. Urban development near Ajo, Arizona, as well as that near Sonoyta, Mexico, is a significant threat to the Acuna cactus. Populations of the Acuna cactus within the Organ Pipe Cactus National Monument have shown a 50 percent mortality rate in recent years. The reason(s) for the mortality are not known, but continuing drought conditions which are prevalent throughout the range of the Acuna cactus are thought to play a role. The Arizona Plant Law and the Convention on International Trade in Endangered Species of Wild Fauna and Flora provide some protection for the Acuna cactus. However, illegal collection is a primary threat to this cactus variety, and has been documented on the Organ Pipe Cactus National Monument in the past. The threats continue to be of a high magnitude as they have a significant negative impact to the long-term viability of this cactus as demonstrated by the continued dramatic decline of the variety. The threats are imminent because habitat loss from drought and urban development are ongoing. Therefore, we assigned an LPN of 3 to the Acuna cactus.

Erigeron lemmonii (Lemmon fleabane) The following summary is based on information contained in our files and the petition we received in July 1975. The species is known from one site in a canyon in the Fort Huachuca Military Reservation of southeastern Arizona. As of 2006, approximately 950 plants were known from this site, where the occupied habitat encompasses about 1 square kilometer.

The threats to this species are from catastrophic wildfire in the canyon and ongoing drought conditions. We do not know if this species has any adaptations to fire. Due to its location on cliffs, we suspect that fires may have occurred at regular intervals and burned at low intensities, and thus may have had little to no effect on this species. It is due only to lack of fire and the accumulated fuel load that the fire intensity and associated heat may be high enough to damage or kill plants on adjacent cliffs, especially near the ground. On the other hand, plants that are much higher on the cliff face would probably not be affected. The magnitude of threats is moderate because we believe that not all of the population would be adversely affected by a wildfire or drought. The threats are imminent because the likelihood of a fire is high. The LPN for Lemmon fleabane remains an 8 due to moderate, imminent threats.

Eriogonum codium (Umtanum Desert buckwheat) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species is a long-lived, slow-growing, woody perennial plant that forms low dense mats. The species occupies a single location on the Hanford National Monument in Washington State. It is found only on an exposed basalt ridge; we do not know if this association is related to the chemical or physical characteristics of the bedrock or other factors. Individual plants may exceed 100 years of age, based on counts of annual growth rings. A count in 1997 reported 5,228 individuals; by 2005 the figure had dropped to 4,418, declining 15% over eight years. A population viability analysis in 2006 based on 9 years of demographic data estimated that that there is little or no risk of a population decline greater than 90 percent within 100 years, but there is a 72 percent chance of a decline of 50 percent.

The major threats to the species are wildfire, fire-fighting activities, trampling, and invasive weeds. However, the relationship between the decline in population numbers and the known threats is not understood at this time. With the possible exception of wildfire, the observed decline in population numbers and recruitment since 1997 is not directly attributable to the currently known threats. Because the population is small, limited to a single site, and sensitive to fire and disturbance, the species remains vulnerable to the

identified threats. The magnitude of threats is high because, given the limited range of the species and the degree of uncertainty about its habitat and the cause of its declines, any of the threats could adversely affect its continued existence. The threats are both ongoing and imminent in nature. Because the species continues to be vulnerable to these threats, we assigned an LPN of 2 to this species.

Eriogonum kelloggii (Red Mountain buckwheat) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Red Mountain buckwheat is a perennial herb endemic to serpentine habitat of lower montane forests found between 1,900 and 4,100 feet. Its distribution is limited to the Red Mountain and Little Red Mountain areas of Mendocino County, California, where it occupies a total of 50 acres and 900 square feet, respectively. Occupied habitat at Red Mountain is scattered over 4 square miles. Total population size is estimated at between 20,000 and 30,000 plants, which occur in 44 polygons. Intensive monitoring of permanent plots on three study sites in Red Mountain suggests considerable annual variation in plant density and reproduction, but no discernable population trend was evident in two of three study sites. One study site showed a 65 percent decline in plant density over 11 years.

The primary threat to this species is the potential for surface mining for chromium and nickel. Virtually the entire distribution of Red Mountain buckwheat is either owned by mining interests, or is covered by existing mining claims, none of which are currently active. Surface mining would destroy habitat suitability for this species. The species is also believed threatened by tree and shrub encroachment into its habitat, in absence of fire. The threat of surface mining is high in magnitude because it would prevent the continued existence of the species in the larger of two locations. That threat is nonimminent because none of the mining claims are active. Because of the high-magnitude, nonimminent threat to the small, scattered populations, we assigned a listing priority number of 5 to this species.

Eriogonum corymbosum var. nilesii (Las Vegas buckwheat) The following summary is based on information contained in our files and the petition we received on April 23, 2008. The Las Vegas buckwheat is a woody perennial shrub restricted to gypsum soil outcroppings in Clark and Lincoln Counties, Nevada.

Destruction and modification of habitat from development is a significant threat with over 95 percent of the historic range and potential habitat of the subspecies affected. In 2005, the Las Vegas buckwheat was known from nine locations on approximately 1,149 acres, but occupied habitat has declined since then to 892 acres due to development. In addition, OHV activity and other public land uses (casual public use, mining, and dumping) directly and indirectly threaten over half of the remaining habitat. To date, regulatory mechanisms to protect the Las Vegas buckwheat are inadequate. Its designation by the Bureau of Land Management (BLM) as a special status species has not provided adequate protection on lands managed by the BLM in large part due to limitations on resources and law enforcement personnel. The Las Vegas buckwheat is not protected by the State of Nevada or any other regulatory mechanisms on other federal lands. Conservation measures are being developed that could reduce the amount of occupied habitat at risk, but we believe it would be premature to consider these measures sufficiently complete as to remove these threats. The magnitude of threats is high, since the more significant threats (development and surface mining) would result in direct mortality of the plants in over half of its habitat. While both development and mining are very likely to occur in the future, they are not expected to happen in the immediate future, and thus,

the threats are nonimminent. Accordingly, we assigned the Las Vegas buckwheat an LPN of 6.

Festuca hawaiiensis (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species is a cespitose (growing in dense, low tufts) annual found in dry forest on the island of Hawaii. Festuca hawaiiensis is known from four populations totaling approximately 1,000 individuals in and around the Pohakuloa Training Area (PTA). Historically, this species was also found on Hualalai and Puu Huluhulu on Hawaii and possibly Ulupalakua on Maui, but it no longer occurs at these sites. Festuca hawaiiensis is threatened by pigs, goats, mouflon, and sheep that degrade and destroy habitat; fire; military training activities; and nonnative plants that outcompete and displace it. Feral pigs, goats, mouflon, and sheep have been fenced out of a portion of the populations of F. hawaiiensis, and nonnative plants have been reduced in the fenced areas but the majority of this population is still impacted by threats from fire and will require long-term monitoring and management. The threats are imminent because they are not controlled and are ongoing in the remaining, unfenced populations. Firebreaks have been established at two other populations but again fire is an imminent threat to the other two populations that have no firebreaks. The threats are of a high magnitude because they could adversely affect F. hawaiiensis resulting in direct mortality or reduced reproductive capacity. Therefore, we retained an LPN of 2 for this species.

Festuca ligulata (Guadalupe fescue) The following summary is based on information contained in our files and the petition we received in 1975. Guadalupe fescue is a member of the Poaceae (grass family). This species is currently only known from higher elevations in the Chisos Mountains in the Big Bend Area of Texas (one population) and adjacent Coahuila, Mexico (two populations). The population in Big Bend National Park is bisected by a trail and subject to occasional trampling by horses and hikers and may be impacted by the lack of proper fire management. A new Candidate Conservation Agreement between the Service and the National Park Service provides for additional conservation efforts, population monitoring, fire management, and trail operation by the National Park Service; these actions partially address threats to the species. Overall, the magnitude of the threats of trampling and lack of proper fire management is moderate to low and nonimminent because of the actions under this agreement. Thus, we assign a LPN of 11 to this species.

Gardenia remyi (Nanu) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Nanu is a tree found in mesic to wet forest on islands of Kauai, Molokai, Maui, and Hawaii, Hawaii. Gardenia remyi is known from 20 populations totaling between 77 and 104 individuals. This species is threatened by pigs, goats, and deer that degrade and destroy habitat and possibly prey upon the species, and by nonnative plants that outcompete and displace it. It is also threatened by landslides on the island of Hawaii. This species is represented in an ex-situ collection. Feral pigs have been fenced out of the west Maui populations of G. remyi, and nonnative plants have been reduced in those areas. However, these threats are not controlled and are ongoing in the remaining, unfenced populations, and are, therefore, imminent. In addition, the threat from goats and deer is ongoing and imminent throughout the range of the species, because no goat or deer control measures have been undertaken for any of the populations of G. remyi. All of the threats are of a high magnitude because habitat destruction, predation, and landslides are significant enough that they could adversely affect the species resulting in direct mortality or reduced

reproductive capacity. Therefore, we retained an LPN of 2 for this species.

Geranium hanaense (Nohoanu) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Geranium hanaense is threatened by pigs that degrade and destroy habitat, and by nonnative plants that outcompete and displace it. However, feral pigs have been fenced out of and removed from both bogs in which this species currently occurs, and a control program has reduced nonnative plants in all fenced areas. Given that the threats to the only known populations of this species are currently being managed and the populations are routinely monitored, the overall magnitude of these threats is moderate. The threats are imminent because the fences must be routinely monitored and nonnative plants must continually be controlled. Therefore, we retained an LPN of 8 for this species.

Geranium hillebrandii (Nohoanu) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Geranium hillebrandii is a decumbent subshrub found in bogs on Maui, Hawaii. It is currently known from three populations totaling approximately 10,000 individuals. Geranium hillebrandii is threatened by pigs that degrade and destroy habitat, and by nonnative plants that outcompete and displace it. Conservation measures taken to control feral pigs and nonnative plants reduce the impact of these threats to G. hillebrandii; however, continued monitoring will be necessary to keep the areas threat-free. The threats from feral pigs and nonnative plants are, therefore, of a moderate magnitude to this species; however, these threats are imminent because they are ongoing in half of the populations and require continued monitoring in the other half. Therefore, we retained an LPN of 8 for this species.

Gonocalyx concolor (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Gonocalyx concolor is a small evergreen epiphytic shrub. Currently, G. concolor is known only from the dwarf or elfin forest type in the Carite Commonwealth Forest (Cerro La Santa), located in the Sierra de Cayey in the municipalities of Guayama, Cayey, Caguas, San Lorenzo, and Patillas in southeastern Puerto Rico. The population previously reported in the Caribbean National Forest in Puerto Rico is apparently no longer extant. The entire population located at one site consists of approximately 172 individuals. Habitat destruction from construction of roads and telecommunication towers, certain forest management practices such as the development and maintenance of trails, and potential for catastrophic natural events threaten this species. Its restricted distribution renders this species highly vulnerable to natural (e.g., hurricanes, landslides) or manmade (e.g., telecommunication towers, forest management practices) threats to its habitat and population, thus making the threat magnitude high. This species is classified as critical by Puerto Rico Department of Natural and Environmental Resources (PRDNER); however, this designation does not provide any regulatory protection. The PRDNER developed a management plan for the Carite Commonwealth Forest in 1976, which includes the protection and conservation of species classified under PRDNER regulations as critical, threatened, or endangered, but it does not include specific measures for the protection of this species. Generally, PRDNER scrutinizes any actions that may affect species classified as critical, and recommends or implements measures to minimize or avoid impacts to these species if deemed appropriate. The immediacy of the threats from building roads and towers and developing and maintaining trails is thus nonimminent. Therefore, we have assigned a listing priority number of 5 for Gonocalyx concolor.

Hazardia orcuttii (Orcutt's hazardia) The following summary is based on information contained in our files and the petition we received on March 8, 2001. Hazardia orcuttii is an evergreen shrubby species in the Asteraceae (sunflower family). The only known extant native occurrence of this species in the U.S. is in the Manchester Conservation Area in northwestern San Diego County, California. This site is managed by Center for Natural Lands Management. Hazardia orcuttii also occurs at a few coastal sites in Mexico, where it has no conservation protections in Mexico. There are approximately 668 native adult plants and 50 seedlings remaining in the U.S., and the population in Mexico is estimated at approximately 1300 plants.

The occurrences in Mexico are threatened by the rapid rate of coastal development from Tijuana to Ensenada. Apparent threats to the U.S. population include ongoing pedestrian trampling, impacts from on and off-leash dogs, and creation of bicycle trails near Hazardia orcuttii plants. Competition from invasive nonnative plants may pose a threat to the reproductive potential of this species. Another significant threat is the species' apparently low reproductive output; in a recent study, 95 percent of the flowers examined were damaged by insects or fungal agents or aborted prematurely, and insects or fungal agents damaged 50 percent of the seeds produced. Overall, the threats are of a high magnitude since they have the potential to significantly reduce the reproductive potential of this species. The threats are nonimminent overall because although trampling and other recreational impacts are ongoing, the most significant threats (competition and low reproductive output) are nonimminent and long-term in nature. Thus, we assigned this species a LPN of 5.

Hedyotis fluviatilis (Kamapuaa) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Kamapuaa is a scandent shrub found in mixed shrubland to wet lowland forest on Oahu and Kauai, Hawaii. This species is known from 12 populations totaling 1,000 to 1,400 individuals. Hedyotis fluviatilis is threatened by pigs and goats that degrade and destroy habitat, and by nonnative plants that outcompete and displace it. All of the threats occur range-wide, and no efforts for their control or eradication are being undertaken. Displacement and habitat destruction have a negative impact on the continued existence of the species. We retained an LPN of 2 because the severity of the threats is high and the threats are ongoing so are imminent.

Helianthus verticillatus (Whorled sunflower) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The whorled sunflower is found in moist, prairie-like openings in woodlands and along adjacent creeks. Despite extensive surveys throughout its range, only five populations are known: two populations in Cherokee County, Alabama; one population in Floyd County, Georgia; and one each in Madison and McNairy Counties, Tennessee. This species appears to have restricted ecological requirements and is dependent upon the maintenance of prairie-like openings for its survival. Much of its habitat has been degraded or destroyed for agricultural, silvicultural, and residential purposes. Populations near roadsides or powerlines are threatened by herbicide usage in association with right-of-way maintenance. The majority of the Georgia population is protected due to their location within a conservation easement area; however, only 15 to 20 plants are estimated to occur at this site. We assigned an LPN of 5 to this species, as the magnitude of threats is high, since there are only five populations and only one of these is under any protection from threats that could eliminate the continued existence of the other populations; the threats are nonimminent, since the whorled sunflower appears to withstand some disturbance and there are no known immediate threats to the sites.

Hibiscus dasycalyx (Neches River rose-mallow) The following summary is based on information contained in our files. No new information was provided in the petition received on May 11, 2004. This mallow species, found in Cherokee, Houston, and Trinity Counties, Texas, appears to be restricted to portions of wetlands that are exposed to open sun and normally hold standing water early in the growing season, with water levels dropping during late summer and fall. Habitat has been affected by drainage or filling of floodplain depressions and oxbows, stream channelization, road construction, timber harvesting, agricultural activities (primarily mowing and grazing), and herbicide use. Threats that continue to affect the species include wetland alteration, herbicide use, grazing, mowing during the species' growing and flowering period, and genetic swamping by other Hibiscus species.

A 1995 status survey of 10 counties resulted in confirmation of the species at only three sites, but in three separate counties and three different watersheds, suggesting a relatively wide historical range. These three populations were all within highway rights-of-way and vulnerable to herbicides and adjacent agricultural activities. As of 2005, only 20 plants remained at one of these sites. Additional surveys for H. dasycalyx resulted in identifying new populations. About 300 plants were found on land owned by Temple-Inland Corporation in east Trinity County. A Candidate Conservation Agreement was developed for this site, but smaller plant numbers have been seen in recent years, possibly due to changes in the wetland's hydrology. Another site discovered on land previously owned by Champion International Corporation (near White Rock Creek in west Trinity County) once supported 300-400 plants; this site was modified in 2007, and was reassessed in 2008, but data is still being analyzed. In west Houston County, a population of 300 to 400 plants discovered on private land has been purchased by the Natural Area Preservation Association in order to protect this land in perpetuity. In east Houston County, a population discovered in Compartment 55 in Davy Crockett National Forest numbered over 1,000 in 2006. In 2000, nearly 800 plants were introduced into Compartments 16 and 20 of Davy Crockett National Forest as part of a reintroduction effort. One population retained high numbers (350 in 2006), but sustained high water in 2007, and may have been adversely affected. The second site was affected by a change in hydrology, and had declined to 50 plants in 2006. In 2004, 200 plants were placed in a wetland in Compartment 11 of Davy Crockett National Forest, but only 10 plants were seen in 2006. High water from heavy spring and summer rains prevented further assessment of these rose-mallow sites in 2007.

The threats continue to be of a high magnitude because they can severely affect the survival and reproductive capacity of the species. Overall, the threats are nonimminent since they are not currently affecting or likely to affect the majority of the populations of this species in the immediate future. Thus, we have retained an LPN of 5 for the Neches River rose-mallow.

Ivesia webberi (Webber ivesia) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Ivesia webberi is a low, spreading, perennial herb that occurs very infrequently in Lassen, Plumas, and Sierra counties in California, and in Douglas and Washoe counties, Nevada. The species is restricted to sites with sparse vegetation and shallow, rocky soils composed of volcanic ash or derived from andesitic rock. Occupied sites generally occur on mid-elevation flats, benches, or terraces on mountain slopes above large valleys along the transition zone between the eastern edge of the northern Sierra Nevada and the northwestern edge of the Great Basin Desert. Currently, the global

population is estimated at approximately 4.8 million individuals at 15 known sites. The Nevada sites support nearly 98 percent of the total number of individuals (4.7 million) on about 30 acres of occupied habitat. The California sites are larger in area, totaling about 156 acres, but support fewer individuals (approximately 115,000).

The primary threats to Webber ivesia include urban development, authorized and unauthorized roads, off-road vehicle activities and other dispersed recreation, livestock grazing and trampling, fire and fire suppression activities including fuels reduction and prescribed fires, and displacement by noxious weeds. Despite the high numbers of individuals, observations in 2002 and 2004 confirmed that direct and indirect impacts to the species and its habitat, specifically from urban development and off-highway vehicle activity, remain high and are likely to increase. Therefore, the magnitude of these threats is high. The U.S. Forest Service has committed to develop a conservation strategy and monitoring program to protect this species on National Forest lands, and the State of Nevada has listed the species as critically endangered, which provides a mechanism to track future impacts on private lands. In addition, both the Forest Service and State of Nevada have agreed to coordinate closely with the Fish and Wildlife Service on all activities that may affect this species. In light of these conservation commitments, we have determined that the threats to Webber ivesia are nonimminent and the LPN remains a 5.

Joinvillea ascendens ssp. ascendens (Ohe) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Ohe is an erect herb found in wet to mesic Metrosideros polymorpha-Acacia koa (ohia-koa) forest on the islands of Kauai, Oahu, Molokai, Maui, and Hawaii, Hawaii. Ohe is known from 38 populations totaling approximately 180 individuals throughout its range. Plants are typically found as only one or two individuals, with miles between populations. This subspecies is threatened by destruction or modification of habitat due to pigs, goats, and deer, and by nonnative plants that outcompete and displace native plants. Predation by pigs, goats, deer, and rats is a likely threat to this species. Seedlings have rarely been observed in the wild. Seeds germinate in cultivation, but most die soon thereafter. It is uncertain if this rarity of reproduction is typical of this subspecies, or if it is related to habitat disturbance. Feral pigs have been fenced out of a few of the populations of this subspecies, and nonnative plants have been reduced in a few populations that are fenced. However, these threats are not controlled and are ongoing in the many remaining, unfenced populations. The threats are of high magnitude because habitat degradation, nonnative plants and predation could affect the ability of the subspecies to survive. The threats are ongoing, and thus are imminent. Therefore, we retained an LPN of 3 for this subspecies.

Korthalsella degeneri (Hulumoa) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Leavenworthia crassa (Gladecress) The following information is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species of gladecress is a component of glade flora, occurring in association with limestone outcroppings. Leavenworthia crassa is endemic to a 13-mile radius area in Lawrence and Morgan Counties, Alabama, where only six populations of this species are documented. Glade habitats today have been reduced to remnants fragmented by agriculture and development. Populations of this species are now located in glade-like areas exhibiting various degrees of disturbance including pastureland, roadside rights-of-way, and cultivated or plowed fields. The most vigorous populations of

this species are located in areas which receive full, or near full, sunlight with limited herbaceous competition. The magnitude of threat is high because with the limited number of populations, the threats from herbicide use, and degradation of habitat by dumping, ATV use, and competition from other plants including nonnative species, could result in direct mortality or reduced reproductive capacity of the species. This species appears to be able to adjust to periodic disturbances and the potential impacts to populations from competition, exotics, and herbicide use are nonimminent. In addition, at this time, we know of no projects planned in the area that would lead to the destruction of habitat where this species is currently located. Thus, we assigned an LPN of 5 to this species.

Leavenworthia texana (Texas golden gladecress) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The gladecress occurs only on the Weches outcrops of east Texas in San Augustine and Sabine counties. The Weches geologic formation consists of a layer of calcareous sediment, lying above a layer of glauconite clay deposited up to 50 million years ago. Erosion of this complex has produced topography of steep, flat-topped hills and escarpments, as well as the unique ecology of Weches glades: islands of thin, loamy, seepy, alkaline soils that support open-sun, herbaceous, and highly diverse and specialized plant communities.

The gladecress was historically recorded at eight sites, all in a narrow region along north San Augustine and Sabine counties. All sites are on private land. The species has been extirpated from three sites due to glauconite mining. Two sites are currently closed to visitors. The Sabine County site supported 1,000 plants within 9 square meters (97 square feet) in 2007. The Tiger Creek site in San Augustine County (less than 0.1 hectare (.2 acre) in size) was found to have about 200 gladecress in 2007. The Kardell site (less than 9 square meters (97 square feet)) has supported 400-500 plants in past years, but none in 2005. An introduced population in Nacogdoches County numbered about 1,000 within an area of about 18 square meters (194 square feet) in 2007.

Historic gladecress habitat has been affected by highway construction, residential development, conversion to pasture and cropland, widespread use of herbicide, overgrazing, and glauconite mining. The primary threat to existing gladecress populations is the invasion of nonnative and weedy shrubs and vines (primarily Macartney rose (Rosa bracteata) and Japanese honeysuckle (Lonicera japonica)). All known sites are undergoing severe degradation by the incursion of nonnative shrubs and vines, which restrict both growth and reproduction of the gladecress. Brush clearing carried out in 1995 resulted in the reappearance of gladecress after a 10year absence at one site. However, nonnative shrubs have again invaded this area. More effective control measures for nonnative species, such as burning and selective herbicide use, need to be tested and monitored. The small number of known sites also makes the gladecress vulnerable to extreme natural disturbance events. A severe drought in 1999 and 2000 had a pronounced adverse effect on gladecress reproduction. Since the threat from nonnative plants severely affects all known sites, the magnitude of threats is high. The threats are imminent, since they are ongoing. Therefore, we retain an LPN of 2 for the Texas golden gladecress.

Lesquerella globosa (Desvaux) Watson (Short's bladderpod) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Short's bladderpod is a perennial member of the mustard family that occurs in Indiana (1 location), Kentucky (6 locations), and Tennessee (18 locations). It grows on steep, rocky, wooded

slopes, talus areas, along cliff tops and bases, and on cliff ledges. It is usually associated with south to west facing calcareous outcrops adjacent to rivers or streams. Road construction and road maintenance have played a significant role in the decline of L. globosa. Specific activities that have affected the species in the past and may continue to threaten it include bank stabilization, herbicide use, mowing during the growing season, grading of road shoulders, and road widening or repaving. Sediment deposition during road maintenance or from other activities also potentially threatens the species. Because the natural processes that maintained habitat suitability and competition from invasive nonnative vegetation have been interrupted at many locations, active habitat management is necessary at those sites. The threats are high in magnitude because they have the potential to significantly affect the survival and reproductive capacity of the species, in particular since many of the populations are small. Based upon the number of populations and the anticipation that most of these threats will not be realized in the next several years, the threats are nonimminent. Therefore, we assigned an LPN of 5 to this species.

Linum arenicola (Sand flax) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Sand flax is found in pine rockland and marl prairie habitats which requires periodic wildfires in order to maintain an open, shrub free subcanopy and reduce litter levels. Based upon available data, there are 11 extant occurrences of sand flax; 11 others are extirpated or destroyed. Only small and isolated occurrences remain in a restricted range of southern Florida and the Florida Keys.

Habitat loss and degradation due to development is a major threat; most of the remaining occurrences are on private land or non-conservation public land. However, much of the pine rocklands on Big Pine Key are protected from development. Nearly all remaining populations are threatened by fire suppression, difficulty in applying prescribed fire, road maintenance activities, exotic species, or illegal dumping. However, some efforts are underway to use prescribed fire and control exotics on conservation lands where this species occurs. Sand flax is vulnerable to natural disturbances, such as hurricanes, tropical storms, and storm surges. Hurricane Wilma inundated most of its habitat on Big Pine Key in 2005, and plants were not found 89 weeks post-storm; the density of sand flax declined to zero in all management units at The Nature Conservancy's preserve in 2006. We also consider sea level rise to be a substantial threat that will reduce the extent of upland habitats. Due to the small and fragmented nature of the current population, stochastic events, disease, or genetic bottlenecks may strongly affect this species. Reduced pollinator activity and suppression of pollinator populations from pesticides used in mosquito control and decreased seed production due to increased seed predation in a fragmented wildland urban interface may also affect sand flax; however, not enough information is known on this species' reproductive biology or life history to assess these potential threats. Overall, the magnitude of threats is high because they are all present habitat modifications that limit the continued existence of the species, and most threats are ongoing and thus are imminent. Therefore, we assigned an LPN of 2 to this species.

Linum carteri var. carteri (Carter's small-flowered flax) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This plant occupies open sites in pinelands of Miami-Dade County, Florida. Currently, there are 10 known occurrences. Occurrences with fewer than 100 individuals are located on three county-owned preserves. A site with more than 100 plants is owned by the U.S.

government, but the site is not managed for conservation. The 10 existing occurrences are small and vulnerable to habitat loss, which is exacerbated by habitat degradation due to fire suppression, the difficulty of applying prescribed fire to pine rocklands, and threats from exotic plants. Remaining habitats are fragmented. Non-compatible management practices are also a threat at most protected sites; several sites are mowed during the flowering and fruiting season. The species is vulnerable to natural disturbances, such as hurricanes, tropical storms, and storm surges. This species exists in such small numbers at so few sites, that it may be difficult to develop and maintain viable occurrences on the available conservation lands. Although no population viability analysis has been conducted for this plant, indications are that existing occurrences are at best marginal and it is possible that none are truly viable. As a result, the magnitude of threats is high. The threats are ongoing, and thus are imminent. Therefore, we assigned an LPN of 3 to this plant variety.

Melicope christophersenii (Alani) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Melicope hiiakae (Alani) We have not updated our assessment for this species, as we are currently developing a proposed listing rule for this species.

Melicope makahae (Alani) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Myrsine fosbergii (Kolea) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Myrsine fosbergii is a branched shrub or small tree found in cloud swept ridges and wet forest on Kauai and Oahu, Hawaii. This species is currently known from 11 populations totaling approximately 58 individuals on Kauai and from 8 populations totaling between 73 and 83 individuals in the Koolau Mountains of Oahu. Myrsine fosbergii is threatened by feral pigs and goats that degrade and destroy habitat and may prey upon the plant, and nonnative plants that compete for light and nutrients. Although there are plans to fence and remove ungulates from the Helemano area of Oahu, which may benefit this species, no conservation measures have been taken to date to alleviate these threats for this species. Feral pigs and goats are found throughout the known range of M. fosbergii, as are nonnative plants. The threats from feral pigs, goats, and nonnative plants are of a high magnitude because they pose a severe threat throughout the limited range of this species, and they are ongoing and therefore imminent. We retained an LPN of 2 for this species.

Myrsine vaccinioides (Kolea) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Myrsine vaccinioides is a small branched shrub found in shrubby bogs on Maui, Hawaii. This species is found scattered throughout the bogs of west Maui, totaling approximately 500 individuals. Myrsine vaccinioides is threatened by feral pigs that degrade and destroy habitat, and nonnative plants that compete for light and nutrients. Pig exclusion fences protect some individuals of this species, and nonnative plants have been reduced around some individuals that are fenced. However, these ongoing conservation efforts benefit only a small number of the known individuals. Further, nonnative plants will probably never be completely eradicated because new propagules are constantly being dispersed into the fenced areas from surrounding, unmanaged lands. The threats are of a high magnitude because they pose a severe threat throughout the limited range of the species and are ongoing, and thus imminent. Therefore, we retained an LPN of 2 for this species.

Narthecium americanum (Bog asphodel) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Bog asphodel is a perennial herb that is found in savannah areas, usually with water moving through the substrate, as well as in sandy bogs along streams and rivers. The historic range of bog asphodel included New York, New Jersey, Delaware, North Carolina, and South Carolina, but it is now only found within the Pine Barrens region of New Jersey.

As an obligate wetland species, N. americanum is threatened by changes in hydrology, loss of habitat due to filling or draining of wetlands, flooding as a result of reservoir construction, and conversion of natural wetlands to commercial cranberry bogs. In the Pine Barrens region, the Pinelands Commission is responsible for issuing the State-assumed Clean Water Act Section 404 permits. The Pinelands Commission grants wetland exemptions to cranberry production and other agricultural uses. However, illegal wetland filling is occurring. For example, a cranberry expansion was illegally completed without a State permit a few years ago. In addition, activities not needing State or federal permits are occurring in uplands that are indirectly affecting the wetlands. In wetlands supporting bog asphodel, natural succession of vegetation from emergent (herbaceous) to forested wetlands may also be contributing to the species' decline. Suppression of natural wildfires that would retard succession or create open wetland savannahs may be a factor in the decline of the species. Other factors adversely affecting N. americanum include trampling, erosion, and siltation caused by recreationists on foot or using off-road vehicles. Approximately 75 percent of known extant populations occur on State-owned lands. These populations are threatened by recreational use and erosion, which are moderate threat because they are localized and occasional. We are working with the New Jersey Department of Environmental Protection to abate these threats. Approximately 20 percent of the known extant sites are on privately owned lands, many of which are threatened by habitat degradation from on-site or adjacent residential or commercial development. These threats could eliminate the bog asphodel from those sites, but because they only represent 20 percent of the occurrences, the threats are moderate overall. The remaining 5 percent of known extant sites occur on federal lands. The threats are imminent because conversion to cranberry bogs, natural succession, wildfire suppression, recreational impacts, and erosion are all ongoing. Overall, based on these imminent, moderate threats, we retain a listing priority number of 8 for this species.

Nothocestrum latifolium (Aiea) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Aiea is a small tree found in dry to mesic forest and diverse mesic forests on Kauai, Oahu, Maui, Molokai, and Lanai, Hawaii. Nothocestrum latifolium is known from 20 populations totaling fewer than 1,100 individuals. This species is threatened by feral pigs, goats, and axis deer that degrade and destroy habitat and may prey upon it; by nonnative plants that compete for light and nutrients; and by the loss of pollinators that negatively affect the reproductive viability of the species. Ungulates have been fenced out of some areas where N. latifolium currently occurs, and nonnative plants have been reduced in some populations that are fenced. However, these ongoing conservation efforts for this species benefit only a few of the known populations. The threats are not controlled and are ongoing in the remaining unfenced populations. In addition, little regeneration is observed in this species. The threats are of a high magnitude, since they are severe enough to affect the continued existence of the species. The threats are imminent, since they are ongoing. Therefore, we retained an LPN of 2 for this species.

Ochrosia haleakalae (Holei) The following summary is based on information

contained in our files. No new information was provided in the petition we received on May 11, 2004. Holei is a tree found often on lava in dry to mesic forest on the islands of Hawaii and Maui, Hawaii. This species is currently known from 11 populations totaling fewer than 130 individuals. Ochrosia haleakalae is threatened by fire; by feral pigs, goats, and cattle that degrade and destroy habitat and may directly prey upon it; and by nonnative plants that compete for light and nutrients. Feral pigs, goats, and cattle have been fenced out of one wild and one outplanted population on private lands on the island of Maui and one outplanted population in Hawaii Volcanoes National Park on the island of Hawaii. Nonnative plants have been reduced in the fenced areas. No known conservation measures have been taken to date for the remaining populations on the islands of Maui and Hawaii. The threat from fire is of a high magnitude and imminent because no control measures have been undertaken to address this threat that could adversely affect O. haleakalae as a whole. The threats from feral pigs, goats, and cattle are ongoing to the unfenced populations of O. haleakalae. The threat from nonnative plants is ongoing and imminent, and of a high magnitude to the wild populations on both islands, since this threat has the potential to adversely affect the continued existence of this species. Therefore, we retained an LPN of 2 for this species.

Pediocactus peeblesianus var. fickeiseniae (Fickeisen plains cactus) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. The Fickeisen plains cactus is a small cactus known from the Gray Mountain vicinity to the Arizona strip in Coconino, Navajo, and Mohave Counties, Arizona. The cactus grows on exposed layers of Kaibab limestone on canyon margins and well-drained hills in Navajoan desert or grassland. In 1999, the Arizona Game and Fish Department noted 23 occurrences of the species, including historical ones. The species is located on Bureau of Land Management (BLM), Forest Service, tribal, and possibly State lands. Recent reports from the BLM and Navajo Nation describe populations of the species as being in decline. The main human-induced threats to this cactus are off-road vehicles and trampling associated with livestock grazing. Monitoring data has detected mortality associated with livestock grazing. Illegal collection of this species has been noted in the past, but we do not know if it is a continuing threat. The populations that have been monitored have been affected, in part, by the continuing drought. There has been very low recruitment, and rabbits and rodents have consumed adult plants, since there is reduced forage available to these animals during drought conditions. Given that there are only a few known populations, that the range of this taxon is limited, and that the majority of the known populations on BLM lands and the Navajo Nation are experiencing declines in populations as a result of the combined threats, we conclude that the threats are of a high magnitude. Since all of the locations of this variety on BLM lands are within grazing allotments and the monitoring data provide evidence that trampling of plants does occur, these threats are ongoing. Therefore, we assigned this plant variety an LPN of 3.

Penstemon debilis (Parachute beardtongue) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Penstemon scariosus var. albifluvis (White River beardtongue) - The following summary is based on information contained in our files and the petition we received on October 27, 1983. The White River beardtongue is restricted to calcareous soils derived from oil shale barrens of the Green River Formation in the Uinta Basin of northeastern Utah and adjacent Colorado. There are 14 occurrences known in Utah and 1 in Colorado. Most of the occupied habitat of the White River beardtongue is within developed and expanding oil and gas fields.

The location of the species' habitat exposes it to destruction from road, pipeline, and well-site construction in connection with oil and gas development. Recreational off-road vehicle use, heavy grazing by livestock, and wildlife and livestock trampling are additional potential threats. The threats are of high magnitude because they involve habitat destruction that could limit the continued existence of this plant variety. The threats are nonimmient because increased threats associated with oil and gas and oil shale development will probably not be increasing substantially within the next year. Oil shale development remains uncertain within the species' habitat, and is not expected to be a significant factor in the near term. Therefore, based on current information, we retained an LPN of 6.

Peperomia subpetiolata (Ala ala wai nui) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Ala ala wai nui is a short-lived perennial herb found in montane mesic forest on Maui, Hawaii. This species is known from one occurrence consisting of two subpopulations on windward east Maui, totaling 23 individuals. Further study of the occurrence indicates that the plants may actually represent clones of only six genetically distinct individuals. There is some question as to the taxonomy of these populations, as putative hybrids have been found in the same areas. Peperomia subpetiolata is threatened by feral pigs that may eat this plant and degrade and destroy habitat, and by nonnative plants that compete for light and nutrients. Individuals that occur within the Waikamoi Preserve may benefit from fencing and management actions; however, all of the threats occur range-wide. Te threats are of a high magnitude because they pose a significant threat to the species resulting in direct mortality or reduced reproductive capacity, and are ongoing and therefore imminent. Therefore, we retained an LPN of 2 for this species.

Phacelia submutica (DeBeque phacelia) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Phyllostegia bracteata (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Phyllostegia bracteata is a scandent perennial herb found in Metrosideros-Cheirodendron-Dicranopteris (ohia-olapa-uluhe) montane wet forest on the island of Maui, Hawaii. Currently this species is known from five populations totaling no more than 12 to 17 individuals on east and west Maui. Phyllostegia bracteata is threatened by feral pigs that may directly prey upon it and degrade and destroy habitat, nonnative plants that compete for light and nutrients, and reduced reproductive vigor and randomly occurring natural events. The threats to P. bracteata from pigs and nonnative plants are of a high magnitude and imminent because in light of their severity and the limited population size of the species, they pose a risk to the species range-wide, are ongoing, and are not subject to any control efforts. Therefore, we retained an LPN of 2 for this species.

Phyllostegia floribunda (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species is an erect subshrub found in mesic to wet forest on the island of Hawaii, Hawaii. This species is known from 10 locations totaling fewer than 270 naturally occurring and outplanted individuals on State, private, and Federal lands. Phyllostegia floribunda is threatened by feral pigs that degrade and destroy habitat, and nonnative plants that compete for light and nutrients. The National Park Service, The Nature Conservancy, and the State have outplanted more than 170 individuals at Olaa Forest Reserve, Kona Hema, and Waiakea Forest Reserve (greater than 50, 20

individuals, and 100 individuals, respectively). Fences protect approximately seven populations on private, State, and National Park lands. Nonnative plants have been reduced in these fenced areas. However, no conservation efforts have been implemented for the unfenced populations. Overall, the threats are moderate because the conservation efforts, for over half of the populations, reduces the severity of the threats. The threats are ongoing in the unfenced portions and must be constantly managed in the fenced portions. Therefore, the threats are imminent. We retained an LPN of 8 because the threats are of moderate magnitude and are imminent for the majority of the populations.

Physaria tuplashensis (White Bluffs bladder-pod) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. White Bluffs bladder-pod is a low-growing, herbaceous, short-lived, perennial plant in the Brassicaceae (mustard) family. Historically and currently, White Bluffs bladder-pod has only been known from a single population that occurs along the White Bluffs of the Columbia River in Franklin County, Washington. The entire range of the species is a narrow band, approximately 33 feet (10 meters) wide by 10.6 miles (17 kilometers) long, at the upper edge of the bluffs. The species occurs only on cemented, highly alkaline, calcium carbonate paleosol (a caliche soil) and is believed to be a calciphile.

Approximately 35 percent of the known range of the species has been moderately to severely affected by landslides, an apparently permanent destruction of the habitat. The entire population of the species is down-slope of irrigated agricultural land, the source of the water seepage causing the mass failures and landslides. Other significant threats include the presence of invasive plants, and some potential use of the habitat by recreational off road vehicles. While P. tuplashensis is inherently vulnerable because it is a narrow endemic, the threats are nonimminent since they are unlikely to occur in the immediate future, except the threat from invasive plants. Invasive plants are present in the vicinity, but have not yet been described as a significant problem. Currently, we know of no plans to expand or significantly modify the existing agriculture activities in areas adjacent to the population. In addition, deliberate modification of the species' immediate habitat is unlikely due to its location and 85 percent Federal ownership. However, because the threats could negatively affect the only known population of this species, the threats are high in magnitude. Therefore, we assigned an LPN of 5 to this species. We are currently reviewing information from recent site visits and the effects of a fire during the summer of 2007 to determine whether to change the LPN next year.

Platanthera integrilabia (Correll) Leur (White fringeless orchid) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Platanthera integrilabia is a perennial herb that grows in partially, but not fully, shaded, wet, boggy areas at the head of streams and on seepage slopes in Alabama, Georgia, Kentucky and Tennessee. Historically, there were at least 90 populations of P. integrilabia. Currently there are only 53 extant sites supporting the species.

Several populations have been extirpated due to road, residential, and commercial construction, and to projects that altered soil and site hydrology such that suitability for the species was reduced. Several of the known populations are in or adjacent to powerline rights-of-way. Mechanical clearing of these areas may benefit the species by maintaining adequate light levels; however, the use of herbicides in these areas could pose a significant threat to the species. All-terrain vehicles have damaged several sites and pose a threat at most sites. Most of the known sites for the species occur in areas that are

managed specifically for timber production. Timber management is not necessarily incompatible with the protection and management of the species, but care must be taken during timber management to ensure that the hydrology of the bogs that support the species is not altered. Natural succession can result in decreased light levels. Because of the species dependence upon moderate to high light levels, some type of active management to prevent complete canopy closure is required at most locations. Collecting for commercial and other purposes is a potential threat. Herbivory (primarily deer) threatens the species at several sites. Due to the alteration of habitat and changes in natural conditions, protection and recovery of this species is dependent upon active management rather than just preservation of habitat. Invasive, nonnative plants such as Japanese honeysuckle and kudzu threaten several sites. Overall, the magnitude of threats to this species is high because they result in direct mortality or significantly decrease the reproductive capacity of this species. Because we anticipate that most of these threats will not be realized in the near future, the threats are nonimminent. Therefore, we assigned an LPN of 5 to this species.

Platydesma cornuta var. cornuta (no common name) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Platydesma cornuta var. decurrens (no common name) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Platydesma remyi (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Platydesma remyi is a shrub or shrubby tree found in wet forests on old volcanic slopes on the island of Hawaii, Hawaii. This species is known from two populations totaling fewer than 50 individuals. Platydesma remyi is threatened by feral pigs and cattle that degrade and destroy habitat, nonnative plants that compete for light and nutrients, reduced reproductive vigor, and stochastic extinction due to naturally occurring events. Only one individual is included in a rare plant exclosure in the Laupahoehoe Natural Area Reserve. The threats are ongoing and therefore imminent, and of a high magnitude because of their severity; the threats cause direct mortality or significantly reduce the reproductive capacity of the species throughout its limited range. Therefore, we retained an LPN of 2 for this species.

Pleomele forbesii (Hala pepe) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Potentilla basaltica (Soldier Meadow cinquefoil or basalt cinquefoil) The following summary is based on information contained in our files; the petition we received on May 11, 2004, provided no additional information on the species. Soldier Meadow cinquefoil is a low growing, rhizomatous, herbaceous perennial that is associated with alkali meadows, seeps, and occasionally marsh habitats bordering perennial thermal springs, outflows, and meadow depressions. In Nevada, the species is known only from Soldier Meadow in Humboldt County. At Soldier Meadow, there are 10 discrete known occurrences within an area of about 70 acres that support about 130,000 individuals. In northeastern California, a single population occurs in Lassen County. The California population occupies less than one acre on private lands and supports fewer than 1,000 plants. The species and its habitat are threatened by recreational use in the areas where it occurs, and ongoing impacts of past water diversions livestock grazing, and off-highway vehicle travel. Because of several conservation measures implemented by the Bureau of Land Management, the magnitude of threat to the species is

moderate since the measures have reduced the effect of the threats on the species. All remaining threats are nonimminent and involve long-term changes to the habitat for the species resulting from past impacts. Therefore, we assigned an LPN of 11 to this species.

Pseudognaphalium (Gnaphalium) sandwicensium var. molokaiense (Enaena) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Pseudognaphalium sandwicensium var. molokaiense is a perennial herb found in strand vegetation in dry consolidated dunes on Molokai and Maui, Hawaii. This variety is known from a total of five populations totaling approximately 2,000 individuals in the Moomomi area on the island of Molokai, and from two populations of a few individuals at Waiehu dunes and at Puu Kahulianapa on west Maui. Pseudognaphalium sandwicensium var. molokaiense is threatened by axis deer and cattle that degrade and destroy habitat and possibly prey upon it, and by nonnative plants that compete for light and nutrients. Potential threats also include collection for lei and off-road vehicles that directly damage plants and degrade habitat. While ungulate exclusion fences protect one population on Molokai and nonnative plant control has been implemented in this population, no conservation efforts have been initiated to date for the other populations on Molokai or for the individuals on Maui. The ongoing threats from axis deer, cattle, nonnative plants, collection, and off-road vehicles are of a high magnitude because no control measures have been undertaken for the Maui population and the threats are significant to this plant. Therefore, we retained an LPN of 3 for this plant variety.

Psychotria hexandra ssp. oahuensis var. oahuensis (Kopiko) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Pteralyxia macrocarpa (Kaulu) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Ranunculus hawaiensis (Makou) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Ranunculus hawaiensis is an erect or ascending perennial herb found in mesic to wet forest dominated by Metrosideros polymorpha and Acacia koa with scree substrate on Maui and the island of Hawaii, Hawaii. Populations formerly within Haleakala National Park have been extirpated. This species is currently known from fewer than 12 individuals in 4 populations: three wild populations occur on Hawaii totaling 8 individuals; 1 wild population at Waikamoi (on Maui) was last observed in 1995, and the second Maui population (Kukui planeze) was not relocated on a survey conducted in 2006. Ranunculus hawaiensis is threatened by direct predation by slugs, feral pigs, goats, cattle, mouflon, and sheep; by pigs, goats, cattle, mouflon and sheep that degrade and destroy habitat; and by nonnative plants that compete for light and nutrients. Three populations have been outplanted into protected exclosures; however, feral ungulates and nonnative plants are not controlled in the remaining, unfenced populations. In addition, the threat from slugs is of a high magnitude because slugs occur throughout the limited range of this species and no effective measures have been undertaken to control them or prevent them from causing significant adverse impacts to this species. Therefore, the threats from pigs, goats, cattle, mouflon, sheep, slugs, and nonnative plants are of a high magnitude, and ongoing (imminent) for R. hawaiensis. We retained an LPN of 2 for this species.

Ranunculus mauiensis (Makou) The following summary is based on information

contained in our files. No new information was provided in the petition we received on May 11, 2004. Ranunculus mauiensis is an erect to weakly ascending perennial herb found in open sites in mesic to wet forest and along streams on the islands of Maui, Kauai, and Molokai, Hawaii. This species is currently known from 1 individual on Molokai, 60 individuals on Maui, and approximately 46 individuals on Kauai. Ranunculus mauiensis is threatened by feral pigs, goats, deer, and slugs that consume it; by habitat degradation and destruction by feral pigs, goats and deer; and by nonnative plants that compete for light and nutrients. Feral pigs have been fenced out of the Maui populations of R. mauiensis, and nonnative plants have been reduced in the fenced areas. One individual occurs in the Kamakou Preserve on Molokai, managed by The Nature Conservancy. However, ongoing conservation efforts benefit only the Maui and Molokai individuals, and absent conservation efforts for the Kauai individuals, the threats continue to be of a high magnitude on Kauai. Therefore, since half of the individuals are found on Kauai threats to the species overall are also of a high magnitude because these threats present a significant risk to the continued existence of R. mauiensis. In addition, the threats are imminent because they are ongoing in the Kauai and the majority of the Maui populations. Therefore, we retained an LPN of 2 for this species.

Rorippa subumbellata (Tahoe yellow cress) The following summary is based on information contained in our files and the petition we received on December 27, 2000. Tahoe yellow cress is a small perennial herb known only from the shores of Lake Tahoe in California and Nevada. Data collected over the last 25 years generally indicate that species occurrence fluctuates yearly as a function of both lake level and the amount of exposed habitat. Records kept since 1900 show a preponderance of years with high lake levels that isolate and reduce Tahoe yellow cress occurrences at higher beach elevations. From the standpoint of the species, less favorable peak years have occurred almost twice as often as more favorable low-level years. Annual surveys are conducted to determine population numbers, site occupancy, and general disturbance regime. During the 2003 and 2004 annual survey period, the lake level was approximately 6,224 ft (1,898 m); 2004 was the fourth consecutive year of low water. Tahoe yellow cress was present at 45 of the 72 sites surveyed (65 percent occupied), up from 15 sites (19 percent occupied) in 2000 when the lake level was high at 6,228 ft. Approximately 25,200 stems were counted or estimated in 2003, whereas during the 2000 annual survey, the estimated number of stems was 4,590. Lake levels began to rise again in 2005 and less habitat was available; intermediate lake levels were expected in 2008.

Many Tahoe yellow cress sites are intensively used for commercial and public purposes and are subject to various activities such as erosion control, marina developments, pier construction, and recreation. The U.S. Forest Service, California Tahoe Conservancy, and California Department of Parks and Recreation have management programs for Tahoe yellow cress that include monitoring, fenced enclosures, and transplanting efforts when funds and staff are available. Public agencies (including the Service), private landowners, and environmental groups collaborated to develop a conservation strategy coupled with a Memorandum of Understanding/Conservation Agreement. The conservation strategy, completed in 2003, contains goals and objectives for recovery and survival, a research and monitoring agenda, and will serve as the foundation for an adaptive management program. Because of the continued commitments to conservation demonstrated by regulatory and land management agencies participating in the conservation strategy, we have determined the threats to Tahoe yellow cress from various land uses are moderate in magnitude. In high lake level years such as 2005, however, recreational use is concentrated within Tahoe yellow cress habitat, and this threat in particular is ongoing and imminent. Therefore, we are maintaining an

LPN of 8 for this species.

Schiedea pubescens (Maolioli) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Schiedea pubescens is a reclining or weakly climbing vine found in diverse mesic to wet forest on Maui, Molokai, and Hawaii. Currently, this species is known from six populations totaling between 29 and 71 individuals on Maui, from four populations totaling 25 individuals on Molokai, and from one population of 4 to 6 individuals on the island of Hawaii. Schiedea pubescens is threatened by feral goats that consume it and degrade and destroy habitat, and by nonnative plants that compete for light and nutrients. Feral ungulates have been fenced out of the population of S. pubescens on Hawaii. Feral goats have been fenced out of a few of the west Maui populations of S. pubescens. Nonnative plants have been reduced in the populations that are fenced on Maui. However, the threats are not controlled and are ongoing in the remaining unfenced populations on Maui and the three populations on Molokai. In light of the extremely low number of individuals of this species, the threats from goats and nonnative plants are of a high magnitude because they pose a significant threat to the species, and imminent because they are ongoing with respect to most of the populations. Therefore, we retained an LPN of 2 for this species.

Schiedea salicaria (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Schiedea salicaria is an erect subshrub or shrub found on ridges and steep slopes in dry shrubland on Maui, Hawaii. Currently, this species is declining throughout its range, and is known from four populations totaling approximately 260 individuals. This species is threatened by cattle that may directly prey upon it and degrade and destroy habitat, fire, and nonnative plants that compete for light and nutrients. This species is represented in an ex-situ collection. All of the threats occur range-wide, and no efforts for their control or eradication are being undertaken. We retained an LPN of 2. The threats are imminent because they are ongoing, and they are of a high magnitude because, in light of their severity and the small size of the population, they have the potential to adversely affect the species.

Sedum eastwoodiae (Red Mountain stonecrop) The following summary is based on information contained in our files and information provided by the California Department of Fish and Game. The petition we received on May 11, 2004 provided no new information on the species. Red Mountain stonecrop is a perennial succulent which occupies relatively barren, rocky openings and cliffs in lower montane coniferous forests, between 1,900 and 4,000 feet elevation. Its distribution is limited to Red Mountain, Mendocino County, California, where it occupies 30 acres scattered over 4 square miles. Total population size is estimated at between 5,300 and 23,000 plants, contained within 27 habitat polygons. Intensive monitoring suggests considerable annual variation in plant seedling success and inflorescence production; stonecrop density has varied from year-to-year. The primary threat to the species is the potential for surface mining for chromium and nickel. The entire distribution of Red Mountain stonecrop is either owned by mining interests, or is covered by mining claims; none of the claims are currently active and therefore the primary threat from mining is nonimminent. Surface mining would destroy habitat suitability for this species. The species is also believed threatened by tree and shrub encroachment into its habitat, in absence of fire. Given the high magnitude and nonimminent threats to the small, scattered populations of this plant species, we assigned an LPN of 5 to Red Mountain stonecrop.

Sicyos macrophyllus (Anunu) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Sicyos macrophyllus is a perennial vine found in wet Metrosideros polymorpha (ohia) forest and subalpine Sophora chrysophylla-Myoporum sandwicense (mamane-naio) forest on the island of Hawaii, Hawaii. This species is known from 11 populations totaling fewer than 50 individuals in the Kohala and Mauna Kea areas and in Hawaii Volcanoes National Park (Puna area) on the island of Hawaii. It appears that a naturally occurring population at Kipuka Ki in Hawaii Volcanoes National Park is reproducing by seeds, but seeds have not been successfully germinated under nursery conditions. This species is threatened by feral pigs and sheep that degrade and destroy habitat, and nonnative plants that compete for light and nutrients. Feral pigs have been fenced out of some of the areas where S. macrophyllus currently occurs, but the fences do not exclude sheep. Nonnative plants have been reduced in the populations that are fenced. However, the threats are not controlled and are ongoing in the remaining, unfenced populations, and are, therefore, imminent. Similarly the threat from sheep is ongoing and imminent in all populations, because the current fences do not exclude sheep. In addition, all of the threats are of a high magnitude because habitat degradation and competition from nonnative plants present a risk to the species, resulting in direct mortality or significantly reducing the reproductive capacity. Therefore, we retained an LPN of 2 for this species.

Solanum nelsonii (popolo) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Solanum nelsonii is a sprawling or trailing shrub found in coral rubble or sand in coastal sites. This species is known from populations in Molokai (approximately 300 plants) and the northwestern Hawaiian Islands: Midway (approximately 260 plants), Laysan (approximately 490 plants), Pearl and Hermes (unknown number of individuals), Nihoa (8,000 to 15,000 adult plants); and from five individuals last observed on the Island of Hawaii in 1995. On Molokai, S. nelsonii is moderately threatened by ungulates which degrade and destroy habitat, and that may eat it, and on Molokai and the northwestern Hawaiian Islands by nonnative plants that outcompete and displace it. Ungulate exclusion fences, routine fence monitoring and maintenance, and weed control protect the population of S. nelsonii on Molokai. Limited weed control is conducted in the northwestern Hawaiian Islands. In addition, S. nelsonii is likely threatened by being eaten by a nonnative grasshopper, Schistocerca nitens, in the northwestern Hawaiian Islands. Currently no control measures are in place for this grasshopper. These threats are of moderate magnitude because of the relatively large number of plants, and are imminent for the majority of the populations because they are ongoing and are not being controlled. We therefore retained an LPN of 8 for this species.

Stenogyne cranwelliae (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Stenogyne cranwelliae is a creeping vine found in wet forest dominated by Metrosideros polymorpha on the island of Hawaii, Hawaii. Stenogyne cranwelliae is known from 11 populations totaling fewer than 100 individuals. This species is threatened by feral pigs that degrade and destroy habitat, and nonnative plants that compete for light and nutrients. In addition, this species is potentially threatened by rats that may directly prey upon it, and by randomly occurring natural events such as hurricanes and landslides. All of the threats occur range-wide, and no efforts for control or eradication are being undertaken for the pigs, nonnative plants, or rats. These threats are sufficient to adversely affect the species particularly in light of its small population size. We retained an LPN of 2

because the threats are of a high magnitude and are ongoing, so are imminent.

Symphyotrichum georgianum (Georgia aster) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Georgia aster is a relict species of post oak savanna/prairie communities that existed across much of the southeast prior to widespread fire suppression and extirpation of large native grazing animals. Most remaining populations survive adjacent to roads, utility rights-of-way, and other openings where current land management mimics natural disturbance regimes. Georgia aster currently occurs in the states of Alabama, Georgia, North Carolina and South Carolina. The species is presumed extant in three counties in Alabama, ten counties in Georgia, nine counties in North Carolina, and eleven counties in South Carolina. The species appears to have been eliminated from Florida. Most populations are small (10-100 stems), and, since the species' main mode of reproduction is vegetative, each isolated population may represent only a few genotypes.

Many populations are threatened by one or more of the following factors: woody succession due to fire suppression, development, highway expansion/improvement, and herbicide application. These threats are currently occurring (and are therefore imminent). These threats are expected to continue to operate throughout the range of the species; however, data on the frequency, timing, and consequences of these threats are lacking. Based upon data on other rare plant species, some of which are federally listed, occurring in similar habitats and possessing similar life histories, it is not currently expected that these threats are likely to be irreversible (e.g., to result in the extirpation of populations). Therefore, the ongoing threats are of moderate to low magnitude, and we assigned an LPN of 8 to this species.

Zanthoxylum oahuense (Ae) We have not updated our assessment for this species, as we are currently developing a proposed listing rule.

Ferns and Allies

Christella boydiae (no common name) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. This species is a small- to medium-sized fern found in mesic to wet forest along streambanks on Oahu and Maui, Hawaii. Historically, this species was also found on the island of Hawaii, but it has been extirpated there. Currently, this species is known from five populations totaling 316 individuals. This species is threatened by feral pigs which degrade and/or destroy habitat and that may eat this plant, nonnative plants that compete for light and nutrients, and stream diversion. Feral pigs have been fenced out of the largest population on Maui, and nonnative plants have been reduced in the fenced area. No conservation efforts are under way to alleviate threats to the other two populations on Maui, or for the two populations on Oahu. The magnitude of the threats acting upon the currently extant populations is moderate because the largest population is protected from pigs, and nonnative plants have been reduced in this area. The threats are ongoing and therefore imminent. Therefore, we retained an LPN of 8 for this species.

Doryopteris takeuchii (no common name) We have not updated our assessment for this species, as we are currently developing a proposed listing rule for this species.

Huperzia stemmermanniae (Waewaeiole) The following summary is based on information contained in our files. No new information was provided in the

petition we received on May 11, 2004. This species is a pendant clubmoss found in mesic to wet Metrosideros polymorpha-Acacia koa (ohia-koa) forests on the islands of Maui and Hawaii, Hawaii. Only four populations are known, totaling 19 to 29 individuals on Hawaii and Maui. Huperzia stemmermanniae is threatened by feral pigs, goats, cattle, and deer that degrade and/or destroy habitat, and by nonnative plants that compete for light, space, and nutrients. It is also threatened by randomly occurring natural events due to its small population size. One individual at Waikamoi Preserve may benefit from fencing for deer and pigs. The threats from pigs, goats, cattle, deer, and nonnative plants are of a high magnitude because they are sufficiently severe to adversely affect the species throughout its limited range, resulting in direct mortality or significantly reducing reproductive capacity. The threats are imminent because they are ongoing. Therefore, we retained an LPN of 2 for this species.

Microlepia strigosa var. mauiensis (Palapalai) The following summary is based on information contained in our files. No new information was provided in the petition we received on May 11, 2004. Palapalai is a fern found in mesic to wet forests. It is currently found on the islands of Maui, Hawaii, and Oahu, from at least 10 populations totaling at least 46 individuals. There is a possibility that the range of this plant variety could be larger and include the other main Hawaiian Islands. Microlepia strigosa var. mauiensis is threatened by feral pigs that degrade and destroy habitat, and nonnative plants that compete for light and nutrients. Pigs have been fenced out of areas on east and west Maui, and on Hawaii, where M. strigosa var. mauiensis currently occurs, and nonnative plants have been reduced in the fenced areas. However, the threats are not controlled and are ongoing in the remaining unfenced populations on Maui, Hawaii, and Oahu. Therefore, the threats from feral pigs and nonnative plants are imminent. The threats are of a high magnitude because they are sufficiently severe to adversely affect the species throughout its range, resulting in direct mortality or significantly reducing reproductive capacity. We therefore retained an LPN of 3 for M. strigosa var. mauiensis.

Petitions To Reclassify Species Already Listed

We previously made warranted-but-precluded findings on five petitions seeking to reclassify threatened species to endangered status. The taxa involved are three populations of the grizzly bear (Ursus arctos horribilis), the spikedace (Meda fulgida), and the loach minnow (Tiaroga cobitis). Because these species are already listed under the Act, they are not candidates for listing and are not included in Table 1. However, this notice and associated species assessment forms also constitute the resubmitted petition findings for these species. For the three grizzly bear populations, we have not updated our assessments through this notice as explained below. Pending the completion of an ongoing review of the status of the grizzly bear in the lower 48 States outside of the Greater Yellowstone Areas (see below), we continue to find that reclassification to endangered for each of the three populations (described below) is warranted but precluded by work indentified above (see Petition Findings for Candidate Species). For the spikedace and loach minnow, our updated assessments are provided below. We find that reclassification to endangered status for both the spikedace and loach minnow is currently warranted but precluded by work identified above (see Petition Findings for Candidate Species). One of the primary reasons that the work identified above is higher priority is that the grizzly bear populations, spikedace, and loach minnow are currently listed as threatened, and therefore already receive certain protections under the Act. The Service promulgated regulations extending take prohibitions for endangered species under section 9 to threatened species (50 CFR 17.31). Prohibited actions under section 9 include, but are not limited to, take (i.e., to harass, harm, pursue, hunt,

shoot, wound, kill, trap, capture, or collect, or attempt to engage in such activity). Other protections include those under section 7(a)(2) of the Act 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, Cabinet-Yaak, and Selkirk populations (Region 6) We have not updated our finding with regard to these grizzly bear populations in this notice. Between 1991 and 1999, we issued warranted but precluded findings to reclassify grizzly bears as endangered in the North Cascades (56 FR 33892-33894, July 24, 1991; 63 FR 30453-30454, June 4, 1998), the Cabinet-Yaak (58 FR 8250-8251, February 12, 1993; 64 FR 26725-26733, May 17, 1999), and the Selkirk Ecosystems (64 FR 26725-26733, May 17, 1999). We also made resubmitted petition findings that uplisting these three populations to endangered was warranted but precluded through previous CNORs (most recently on September 12, 2006; 71 FR 53755). However, none of the findings included a formal analysis under our 1996 Policy Regarding the Recognition of Distinct Vertebrate Population Segments (DPS) under the Endangered Species Act (61 FR 4722-4725, February 7, 1996). Under this policy a formal analysis of discreteness and significance is necessary to determine if the entity is a listable entity. While our 1999 revised 12month finding performed a preliminary DPS analysis, it appears to have incorrectly analyzed significance to the listed entity (i.e. grizzly bears in the lower 48 States) instead of significance to the taxon (Ursus arctos horribilis) as required by our DPS policy (64 FR 26725-26733, May 17, 1999; 61 FR 4722-4725, February 7, 1996; National Association of Home Builders v. Norton, 340 F. 3d 835, 852 (9th Cir. 2003)). Additionally, emerging biological information now suggests increasing levels of connectivity among some of these populations, casting doubt on their discreteness.

Also relevant is the March 16, 2007, Department of the Interior Office of the Solicitor memorandum (available at: http://www.doi.gov/solicitor/opinions/M37013.pdf) regarding the meaning of significant portion of [a species'] range. This memorandum states that whenever the Secretary concludes because of the statutory five-factor analysis that a species is ‘in danger of extinction throughout...a significant portion of its range,' it is to be listed and the protections of the ESA applied to the species in that portion of its range. The memorandum goes on to say, the Secretary has broad discretion in defining what portion of a range is ‘significant.' To date, the Service has not determined whether the North Cascade, the Cabinet-Yaak, or the Selkirk Ecosystems each constitutes a significant portion of the grizzly bear's range or whether they only represent significant portions of the species' range when combined with other units.

On April 18, 2007, the Service initiated a 5year review to evaluate the current status of grizzly bears in the lower 48-States outside of the Greater Yellowstone Area (72 FR 19549-19551). This status review will fully evaluate the status of each population and the appropriate application of the DPS policy and the Solicitor memorandum regarding recognition and listing of significant portions of range. We expect this 5year review to be completed in FY 2009. We will use information from that review to update our findings for the petitions to reclassify the three grizzly bear populations.

Spikedace (Meda fulgida) (Region 2) (see 59 FR 35303, July 11, 1994, and the species assessment form (see ADDRESSES) for additional information on why reclassification to endangered is warranted-but-precluded) The spikedace, a small fish species in a monotypic genus, is found in moderate-to-large perennial

waters, where it inhabits shallow riffles with sand, gravel, and rubble substrates, and moderate-to-swift currents and swift pools over sand or gravel substrates. This species is now relatively common only in Aravaipa Creek and portions of the upper Gila River in New Mexico. Smaller, less stable populations occur in some areas of the upper Gila, as well as in the Verde River.

The threats to this species are primarily from nonnative aquatic species and water withdrawals, including groundwater pumping. Other threats include grazing, road construction, and recreation. Spikedace occur in only 5 to 10 percent of their historical range, and threats occur over the majority of their range to varying degrees. Threats are exacerbated by ongoing drought. In addition, different threats can interact with each other to cause further decline. For example, drought and water withdrawals may decrease the amount of habitat available to all species within a given stream, forcing natives and nonnatives into closer proximity to one another. Effects from nonnative species introductions are permanent, unless streams are actively renovated and/or barriers installed to preclude further recolonization by nonnatives. Grazing pressures have eased somewhat as Federal agencies remove cattle from streams directly, but upland conditions continue to degrade watersheds in general. Groundwater withdrawals or exchanges that affect streamflow are not reversible. For these reasons, the magnitude of the threat to this species is high. In addition, most of the threats to this species are ongoing, in particular grazing, water withdrawals, nonnative stocking programs, recreational use, and drought. Because threats have gone on for many years in the past, are associated with irreversible commitments (i.e., water exchanges), or are not easily reversed (i.e., nonnative stocking and impacts from grazing), the threats to the species are imminent. Therefore, we assigned this species an LPN of 1 for uplisting to endangered.

Loach minnow (Tiaroga cobitis) (Region 2) (see 59 FR 35303, July 11, 1994, and the species assessment form (see ADDRESSES) for additional information on why reclassification to endangered is warranted-but-precluded) This small fish, the only species within the genus, is found in small-to-large perennial streams and uses shallow, turbulent riffles with primarily cobble substrate and swift currents. This species is now common only in Aravaipa Creek and the Blue River in Arizona, and limited portions of the San Francisco, upper Gila, and Tularosa rivers in New Mexico. Smaller, less stable populations occur in some areas of the upper Gila, such as the Middle Fork and in small areas of several tributary streams to Aravaipa Creek and the Blue and Tularosa rivers, such as Pace, Frieborn, Negrito, Turkey, and Deer creeks. Small populations are also present in Eagle Creek and the Black River.

The threats to this species are primarily from nonnative aquatic species and water withdrawals, including groundwater pumping. Other threats include grazing, road construction, and recreation. Loach minnow occur in only 10 to 15 percent of their historic range, and threats occur over the majority of their range, to varying degrees. Threats are exacerbated by ongoing drought. In addition, different threats can interact with each other to cause further decline. For example, drought and water withdrawals may decrease the amount of habitat available to all species within a given stream, bringing natives and nonnatives into closer contact. Effects from nonnative species introductions are permanent, unless streams are actively renovated and/or barriers installed to preclude further recolonization by nonnatives. Grazing pressures have eased somewhat as Federal agencies remove cattle from streams directly, but upland conditions continue to degrade watersheds in general. Groundwater withdrawals or exchanges that affect streamflow are not reversible. For these reasons, the magnitude of the threats to this species is high. In addition, most of the threats to this

species are ongoing, in particular grazing, water withdrawals, nonnative stocking programs, recreational use, and drought. Because threats have gone on for many years in the past, are associated with irreversible commitments (i.e., water exchanges), or are not easily reversed (i.e., nonnative stocking and impacts
from grazing), the threats to this species are imminent. Therefore, we assigned this species an LPN of 1 for uplisting to endangered.

Current Notice of Review

We gather data on plants and animals native to the U.S. that appear to merit consideration for addition to the Lists of Endangered and Threatened Wildlife and Plants. 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 list animals arranged alphabetically by common names under the major group headings, and list plants alphabetically by names of genera, species, and relevant subspecies and varieties. Animals are grouped by class or order. Plants are subdivided into two groups: (1) flowering plants and (2) ferns and their allies. Useful synonyms and subgeneric scientific names appear in parentheses with the synonyms preceded by an equals sign. Several species that have not yet been formally described in the scientific literature are included; such species are identified by a generic or specific name (in italics), followed by sp. or ssp. We incorporate standardized common names in these notices as they become available. We sorted 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 Act. We emphasize that in this notice we are not proposing to list any of the candidate species; rather, we will develop and publish proposed listing rules for these species in the future. We encourage State agencies, other Federal agencies, and other parties to give consideration to these species in environmental planning.

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

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

PT - Species proposed for listing as threatened.

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

C - Candidates: Species for which we have on file sufficient information on biological vulnerability and threats to support proposals to list them as endangered or threatened. Issuance of proposed rules for these species is

precluded at present by other higher-priority listing actions. This category includes species for which we made a 12month warranted-but-precluded finding on a petition to list. We made new findings on all petitions for which we previously made warranted-but-precluded findings. We identify the species for which we made a continued warranted-but-precluded finding on a resubmitted petition by the code C* in the category column (see Findings on Resubmitted Petitions section for additional information).

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

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

Following the scientific name (fourth column) and the family designation (fifth column) is the common name (sixth column). The seventh column provides the known historic range for the species or vertebrate population (for vertebrate populations, this is the historic range for the entire species or subspecies and not just the historic range for the distinct population segment), indicated by postal code abbreviations for States and U.S. territories. Many species no longer occur in all of the areas listed.

Species in Table 2 of this notice are those we included either as proposed species or as candidates in the previous CNOR (published December 6, 2007) that are no longer proposed species or candidates for listing. Since December 6, 2007, we removed one species from proposed status and removed three species from candidate status for the reasons indicated by the codes. The first column indicates the present status of each species, using the following codes (not all of these codes may have been used in this CNOR):

E - Species we listed as endangered.

T - Species we listed as threatened.

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

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

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

A - Species that are more abundant or widespread than previously believed and species that are not subject to the degree of threats sufficient to warrant continuing candidate status, or issuing a proposed or final listing.

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

I - Species for which we have insufficient information on biological vulnerability and threats to support issuance of a proposed rule to list.

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 Act'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 or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

X - Species we believe to be extinct.

The columns describing lead region, scientific name, family, common name, and historical range include information as previously described for Table 1.

Request for Information

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

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

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

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

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

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

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

(7) suggesting appropriate common names; and

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

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

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

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

Region 3. Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. Regional Director (TE), U.S. Fish and Wildlife Service, Bishop Henry Whipple Federal Building, One Federal Drive, Fort Snelling, MN 55111-4056 (612/713-5334).

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

Region 5. Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia. Regional Director (TE), U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035-9589 (413/253-8615).

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

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

Region 8. California and Nevada. Regional Director (TE), U.S. Fish and Wildlife Service, 2800 Cottage Way, Suite W2606, Sacramento, CA 95825 (916/414-6464)

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

Before including your address, phone number, e-mail 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. While you can ask us in your submission to withhold from public review your personal indentifying 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 (16 U.S.C. 1531 et seq.).

Dated: November 26, 2008

Rowan W. Gould

Deputy Director, Fish and Wildlife Service

<Q P="03" />

<GPOTABLE COLS="7" OPTS="L4,i1,p6,7/8" CDEF="s20,r20,r20,r50,r40,r60,r40">

Table 1. - Candidate Notice of Review (Animals and Plants)

<TDESC>Note: See end of SUPPLEMENTARY INFORMATION for an explanation of symbols used in this table.
</TDESC>

Status

Category

Priority

Lead region

Scientific name

Family

Common name

Historic range

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">MAMMALS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Emballonura semicaudata rotensis<ENT O="xl">Emballonuridae<ENT O="xl">Bat, Pacific sheath-tailed (Mariana Islands subspecies)
U.S.A. (GU, CNMI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Emballonura semicaudata semicaudata<ENT O="xl">Emballonuridae<ENT O="xl">Bat, Pacific sheath-tailed (American Samoa DPS)
U.S.A. (AS), Fiji, Independent Samoa, Tonga, Vanuatu

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R5<ENT O="xl">Sylvilagus transitionalis<ENT O="xl">Leporidae<ENT O="xl">Cottontail, New England
U.S.A. (CT, MA, ME, NH, NY, RI, VT)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">6<ENT O="xl">R8<ENT O="xl">Martes pennanti<ENT O="xl">Mustelidae<ENT O="xl">Fisher (west coast DPS)
U.S.A. (CA, CT, IA, ID, IL, IN, KY, MA, MD,ME, MI, MN, MT, ND, NH, NJ, NY, OH, OR, PA, RI, TN, UT, VA, VT, WA, WI, WV, WY), Canada

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R2<ENT O="xl">Zapus hudsonius luteus<ENT O="xl">Zapodidae<ENT O="xl">Mouse, New Mexico meadow jumping
U.S.A. (AZ, CO, NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Thomomys mazama couchi<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher, Shelton
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama douglasii<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Brush Prairie
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama glacialis<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Roy Prairie
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama louiei<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Cathlamet
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama melanops<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Olympic
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama pugetensis<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Olympia
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama tacomensis<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Tacoma
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama tumuli<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Tenino
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Thomomys mazama yelmensis<ENT O="xl">Geomyidae<ENT O="xl">Pocket gopher,
Yelm
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R6<ENT
O="xl">Cynomys gunnisoni<ENT O="xl">Sciuridae<ENT O="xl">Prairie dog, Gunnison's
(central and south-central Colorado, north-central New Mexico SPR)
U.S.A. (CO, NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R8<ENT
O="xl">Spermophilus tereticaudus chlorus<ENT O="xl">Sciuridae<ENT
O="xl">Squirrel, Palm Springs (= Coachella Valley) round-tailed ground
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R1<ENT
O="xl">Spermophilus brunneus endemicus<ENT O="xl">Sciuridae<ENT O="xl">Squirrel,
Southern Idaho ground
U.S.A. (ID)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R1<ENT

O="xl">Spermophilus washingtoni<ENT O="xl">Sciuridae<ENT O="xl">Squirrel, Washington ground
U.S.A. (WA, OR)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">BIRDS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT O="xl">Loxops caeruleirostris<ENT O="xl">Fringillidae<ENT O="xl">Akekee (honeycreeper)
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Oreomystis bairdi<ENT O="xl">Fringillidae<ENT O="xl">Akikiki (Kauai creeper)
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Porzana tabuensis<ENT O="xl">Rallidae<ENT O="xl">Crake, spotless (American Samoa DPS)
U.S.A. (AS), Australia, Fiji, Independent Samoa, Marquesas, Philippines, Society Islands, Tonga

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R8<ENT O="xl">Coccyzus americanus <ENT O="xl">Cuculidae<ENT O="xl">Cuckoo, yellow-billed (Western U.S. DPS)
U.S.A. (Lower 48 States), Canada, Mexico, Central and South America

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R1<ENT O="xl">Gallicolumba stairi<ENT O="xl">Columbidae<ENT O="xl">Ground-dove, friendly (American Samoa DPS)
U.S.A. (AS), Independent Samoa

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Eremophila alpestris strigata<ENT O="xl">Alaudidae<ENT O="xl">Horned lark, streaked
U.S.A. (OR, WA), Canada (BC)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R5<ENT O="xl">Calidris canutus rufa<ENT O="xl">Scolopacidae<ENT O="xl">Knot, red
U.S.A. (Atlantic coast), Canada, South America

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R7<ENT O="xl">Brachyramphus brevirostris<ENT O="xl">Alcidae<ENT O="xl">Murrelet, Kittlitz's
U.S.A. (AK), Russia.

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R8<ENT O="xl">Synthliboramphus hypoleucus<ENT O="xl">Alcidae<ENT O="xl">Murrelet, Xantus's
U.S.A. (CA), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Tympanuchus pallidicinctus<ENT O="xl">Phasianidae<ENT O="xl">Prairie-chicken, lesser
U.S.A. (CO, KA, NM, OK, TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">6<ENT O="xl">R1<ENT

O="xl">Centrocercus urophasianus<ENT O="xl">Phasianidae<ENT O="xl">Sage-grouse, greater (Columbia Basin DPS)
U.S.A. (AZ, CA, CO, ID, MT, ND, NE, NV, OR, SD, UT, WA, WY), Canada (AB, BC, SK)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Oceanodroma castro<ENT O="xl">Hydrobatidae<ENT O="xl">Storm-petrel, band-rumped (Hawaii DPS)
U.S.A. (HI), Atlantic Ocean, Ecuador (Galapagos Islands), Japan

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Dendroica angelae<ENT O="xl">Emberizidae<ENT O="xl">Warbler, elfin-woods
U.S.A. (PR)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">REPTILES

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R2<ENT O="xl">Thamnophis eques megalops<ENT O="xl">Colubridae<ENT O="xl">Gartersnake, northern Mexican
U.S.A. (AZ, NM, NV), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Sceloporus arenicolus<ENT O="xl">Iguanidae<ENT O="xl">Lizard, sand dune
U.S.A. (TX, NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R3<ENT O="xl">Sistrurus catenatus catenatus<ENT O="xl">Viperidae<ENT O="xl">Massasauga (=rattlesnake), eastern
U.S.A. (IA, IL, IN, MI, MO, MN, NY, OH, PA, WI), Canada

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R4<ENT O="xl">Pituophis melanoleucus lodingi<ENT O="xl">Colubridae<ENT O="xl">Snake, black pine
U.S.A. (AL, LA, MS)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pituophis ruthveni<ENT O="xl">Colubridae<ENT O="xl">Snake, Louisiana pine
U.S.A. (LA, TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R2<ENT O="xl">Kinosternon sonoriense longifemorale<ENT O="xl">Kinosternidae<ENT O="xl">Turtle, Sonoyta mud
U.S.A. (AZ), Mexico

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">AMPHIBIANS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R8<ENT O="xl">Rana luteiventris<ENT O="xl">Ranidae<ENT O="xl">Frog, Columbia spotted (Great Basin DPS)
U.S.A. (AK, ID, MT, NV, OR, UT, WA, WY), Canada (BC)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R8<ENT O="xl">Rana muscosa<ENT O="xl">Ranidae<ENT O="xl">Frog, mountain yellow-legged (Sierra Nevada DPS)
U.S.A (CA, NV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Rana pretiosa<ENT O="xl">Ranidae<ENT O="xl">Frog, Oregon spotted

U.S.A. (CA, OR, WA), Canada (BC)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R8<ENT
O="xl">Rana onca<ENT O="xl">Ranidae<ENT O="xl">Frog, relict leopard
U.S.A. (AZ, NV, UT)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R3<ENT
O="xl">Cryptobranchus alleganiensis bishopi<ENT O="xl">Crytobranchidae<ENT
O="xl">Hellbender, Ozark
U.S.A. (AR, MO)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT
O="xl">Eurycea waterlooensis<ENT O="xl">Plethodontidae<ENT O="xl">Salamander,
Austin blind
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R2<ENT
O="xl">Eurycea naufragia<ENT O="xl">Plethodontidae<ENT O="xl">Salamander,
Georgetown
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R2<ENT
O="xl">Eurycea tonkawae<ENT O="xl">Plethodontidae<ENT O="xl">Salamander,
Jollyville Plateau
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT
O="xl">Eurycea chisholmensis<ENT O="xl">Plethodontidae<ENT O="xl">Salamander,
Salado
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R8<ENT
O="xl">Bufo canorus<ENT O="xl">Bufonidae<ENT O="xl">Toad, Yosemite
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">3<ENT O="xl">R2<ENT
O="xl">Hyla wrightorum<ENT O="xl">Hylidae<ENT O="xl">Treefrog, Arizona
(Huachuca/Canelo DPS)
U.S.A. (AZ), Mexico (Sonora)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R4<ENT
O="xl">Necturus alabamensis<ENT O="xl">Proteidae<ENT O="xl">Waterdog, black
warrior (=Sipsey Fork)
U.S.A. (AL)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">FISHES

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT
O="xl">R2<ENT O="xl">Gila nigra<ENT O="xl">Cyprinidae<ENT O="xl">Chub, headwater
U.S.A. (AZ, NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Phoxinus saylori<ENT O="xl">Cyprinidae<ENT O="xl">Dace, laurel
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R6<ENT
O="xl">Etheostoma cragini<ENT O="xl">Percidae<ENT O="xl">Darter, Arkansas

U.S.A. (AR, CO, KS, MO, OK)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Etheostoma susanae<ENT O="xl">Percidae<ENT O="xl">Darter, Cumberland
U.S.A. (KY, TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Percina aurora<ENT O="xl">Percidae<ENT O="xl">Darter, Pearl
U.S.A. (LA, MS)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT O="xl">Etheostoma phytophilum<ENT O="xl">Percidae<ENT O="xl">Darter, rush
U.S.A. (AL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT O="xl">Etheostoma moorei<ENT O="xl">Percidae<ENT O="xl">Darter, yellowcheek
U.S.A (AR)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT O="xl">Noturus crypticus<ENT O="xl">Ictaluridae<ENT O="xl">Madtom, chucky
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Moxostoma sp.<ENT O="xl">Catostomidae<ENT O="xl">Redhorse, sicklefin
U.S.A. (GA, NC, TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R3<ENT O="xl">Cottus sp.<ENT O="xl">Cottidae<ENT O="xl">Sculpin, grotto
U.S.A. (MO)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R2<ENT O="xl">Notropis oxyrhynchus<ENT O="xl">Cyprinidae<ENT O="xl">Shiner, sharpnose
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R2<ENT O="xl">Notropis buccula<ENT O="xl">Cyprinidae<ENT O="xl">Shiner, smalleye
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R2<ENT O="xl">Catostomus discobolus yarrowi<ENT O="xl">Catostomidae<ENT O="xl">Sucker, Zuni bluehead
U.S.A. (AZ, NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PSAT<ENT O="xl">N/A<ENT O="xl">R1<ENT O="xl">Salvelinus malma<ENT O="xl">Salmonidae<ENT O="xl">Trout, Dolly Varden
U.S.A. (AK, WA), Canada, East Asia

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R2<ENT O="xl">Oncorhynchus clarki virginalis<ENT O="xl">Salmonidae<ENT O="xl">Trout, Rio Grande cutthroat
U.S.A. (CO, NM)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">CLAMS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Villosa choctawensis<ENT O="xl">Unionidae<ENT O="xl">Bean, Choctaw

U.S.A. (AL, FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R3<ENT
O="xl">Villosa fabalis<ENT O="xl">Unionidae<ENT O="xl">Bean, rayed
U.S.A. (IL, IN, KY, MI, NY, OH, TN, PA, VA, WV), Canada (ON)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Fusconaia rotulata<ENT O="xl">Unionidae<ENT O="xl">Ebonyshell, round
U.S.A. (AL, FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R2<ENT
O="xl">Popenaias popei<ENT O="xl">Unionidae<ENT O="xl">Hornshell, Texas
U.S.A. (NM, TX), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Ptychobranchus subtentum<ENT O="xl">Unionidae<ENT O="xl">Kidneyshell,
fluted
U.S.A. (AL, KY, TN, VA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Ptychobranchus jonesi<ENT O="xl">Unionidae<ENT O="xl">Kidneyshell,
southern
U.S.A. (AL, FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Lampsilis rafinesqueana<ENT O="xl">Unionidae<ENT O="xl">Mucket, Neosho
U.S.A. (AR, KS, MO, OK)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R3<ENT
O="xl">Plethobasus cyphyus<ENT O="xl">Unionidae<ENT O="xl">Mussel, sheepnose
U.S.A. (AL, IA, IL, IN, KY, MN, MO, MS, OH, PA, TN, VA, WI, WV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Margaritifera marrianae<ENT O="xl">Margaritiferidae<ENT
O="xl">Pearlshell, Alabama
U.S.A. (AL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Lexingtonia dolabelloides<ENT O="xl">Unionidae<ENT O="xl">Pearlymussel,
slabside
U.S.A. (AL, KY, TN, VA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Pleurobema strodeanum<ENT O="xl">Unionidae<ENT O="xl">Pigtoe, fuzzy
U.S.A. (AL, FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Pleurobema hanleyianum<ENT O="xl">Unionidae<ENT O="xl">Pigtoe, Georgia
U.S.A. (AL, GA, TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Fusconaia escambia<ENT O="xl">Unionidae<ENT O="xl">Pigtoe, narrow
U.S.A. (AL, FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">11<ENT O="xl">R4<ENT
O="xl">Fusconaia (=Quincuncina) burkei<ENT O="xl">Unionidae<ENT O="xl">Pigtoe,
tapered

U.S.A. (AL, FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Hamiota (=Lampsilis) australis<ENT O="xl">Unionidae<ENT O="xl">Sandshell,
southern
U.S.A. (AL, FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">4<ENT O="xl">R3<ENT
O="xl">Cumberlandia monodonta<ENT O="xl">Margaritiferidae<ENT
O="xl">Spectaclecase
U.S.A. (AL, AR, IA, IN, IL, KS, KY, MO, MN, NE, OH, TN, VA, WI, WV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Elliptio spinosa<ENT O="xl">Unionidae<ENT O="xl">Spinymussel, Altamaha
U.S.A. (GA)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">SNAILS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT
O="xl">R4<ENT O="xl">Pleurocera foremani<ENT O="xl">Pleuroceridae<ENT
O="xl">Hornsnail, rough
U.S.A. (AL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">8<ENT O="xl">R4<ENT
O="xl">Elimia melanoides<ENT O="xl">Pleuroceridae<ENT O="xl">Mudalia, black
U.S.A. (AL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R6<ENT
O="xl">Stagnicola bonnevillensis<ENT O="xl">Lymnaeidae<ENT O="xl">Pondsnail,
fat-whorled (=Bonneville)
U.S.A. (UT)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Leptoxis foremani (=downei)<ENT O="xl">Pleuroceridae<ENT
O="xl">Rocksnail, Interrupted (= Georgia)
U.S.A. (GA, AL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Ostodes strigatus<ENT O="xl">Potaridae<ENT O="xl">Sisi snail
U.S.A. (AS)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT
O="xl">Pseudotryonia adamantina<ENT O="xl">Hydrobiidae<ENT O="xl">Snail, Diamond
Y Spring
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Samoana fragilis<ENT O="xl">Partulidae<ENT O="xl">Snail, fragile tree
U.S.A. (GU, MP)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Partula radiolata<ENT O="xl">Partulidae<ENT O="xl">Snail, Guam tree
U.S.A. (GU)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Partula gibba<ENT O="xl">Partulidae<ENT O="xl">Snail, Humped tree
U.S.A. (GU, MP)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Partulina semicarinata<ENT O="xl">Achatinellidae<ENT O="xl">Snail, Lanai tree
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Partulina variabilis<ENT O="xl">Achatinellidae<ENT O="xl">Snail, Lanai tree
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Partula langfordi<ENT O="xl">Partulidae<ENT O="xl">Snail, Langford's tree
U.S.A. (MP)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Cochliopa texana<ENT O="xl">Hydrobiidae<ENT O="xl">Snail, Phantom cave
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Newcombia cumingi<ENT O="xl">Achatinellidae<ENT O="xl">Snail, Newcomb's tree
U.S.A. (Hl)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Eua zebrina<ENT O="xl">Partulidae<ENT O="xl">Snail, Tutuila tree
U.S.A. (AS)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Pyrgulopsis chupaderae<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, Chupadera
U.S.A. (NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R8<ENT O="xl">Pyrgulopsis notidicola<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, elongate mud meadows
U.S.A. (NV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R2<ENT O="xl">Pyrgulopsis gilae<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, Gila
U.S.A. (NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Tryonia circumstriata(=stocktonensis)<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, Gonzales
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R2<ENT O="xl">Pyrgulopsis thompsoni<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, Huachuca
U.S.A. (AZ), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R2<ENT O="xl">Pyrgulopsis thermalis<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, New Mexico
U.S.A. (NM)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Pyrgulopsis morrisoni<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, Page
U.S.A. (AZ)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Tryonia cheatumi<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail (=Tryonia), Phantom
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Pyrgulopsis bernardina<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, San Bernardino
U.S.A. (AZ), Mexico (Sonora)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT O="xl">Pyrgulopsis trivialis<ENT O="xl">Hydrobiidae<ENT O="xl">Springsnail, Three Forks
U.S.A. (AZ)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">INSECTS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT O="xl">Nysius wekiuicola<ENT O="xl">Lygaeidae<ENT O="xl">Bug, Wekiu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">3<ENT O="xl">R4<ENT O="xl">Strymon acis bartrami<ENT O="xl">Lycaenidae<ENT O="xl">Butterfly, Bartram's hairstreak
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">3<ENT O="xl">R4<ENT O="xl">Anaea troglodyta floridalis<ENT O="xl">Nymphalidae<ENT O="xl">Butterfly, Florida leafwing
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Hypolimnas octucula mariannensis<ENT O="xl">Nymphalidae<ENT O="xl">Butterfly, Mariana eight-spot
U.S.A. (GU, MP)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Vagrans egistina<ENT O="xl">Nymphalidae<ENT O="xl">Butterfly, Mariana wandering
U.S.A. (GU, MP)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">6<ENT O="xl">R4<ENT O="xl">Cyclargus thomasi bethunebakeri<ENT O="xl">Lycaenidae<ENT O="xl">Butterfly, Miami blue
U.S.A. (FL), Bahamas

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Glyphopsyche sequatchie<ENT O="xl">Limnephilidae<ENT O="xl">Caddisfly, Sequatchie
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT

O="xl">Pseudanophthalmus insularis<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Baker Station (= insular)
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus caecus<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Clifton
U.S.A. (KY)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">11<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus colemanensis<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Coleman
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus fowlerae<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Fowler's
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus frigidus<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, icebox
U.S.A. (KY)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus tiresias<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Indian Grave Point (= Soothsayer)
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus inquisitor<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, inquirer
U.S.A. (TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus troglodytes<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Louisville
U.S.A. (KY)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus paulus<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Noblett's
U.S.A. (TN).

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT O="xl">Pseudanophthalmus parvus<ENT O="xl">Carabidae<ENT O="xl">Cave beetle, Tatum
U.S.A. (KY)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Euphydryas editha taylori<ENT O="xl">Nymphalidae<ENT O="xl">Checkerspot butterfly, Taylor's (= Whulge)
U.S. A. (OR, WA), Canada (BC)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R1<ENT O="xl">Megalagrion nigrohamatum nigrolineatum<ENT O="xl">Coenagrionidae<ENT O="xl">Damselfly, blackline Hawaiian

U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Megalagrion leptodemas<ENT O="xl">Coenagrionidae<ENT O="xl">Damselfly, crimson Hawaiian
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Megalagrion nesiotes<ENT O="xl">Coenagrionidae<ENT O="xl">Damselfly, flying earwig Hawaiian
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Megalagrion oceanicum<ENT O="xl">Coenagrionidae<ENT O="xl">Damselfly, oceanic Hawaiian
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT O="xl">Megalagrion xanthomelas<ENT O="xl">Coenagrionidae<ENT O="xl">Damselfly, orangeblack Hawaiian
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Megalagrion pacificum<ENT O="xl">Coenagrionidae<ENT O="xl">Damselfly, Pacific Hawaiian
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R8<ENT O="xl">Dinacoma caseyi<ENT O="xl">Scarabidae<ENT O="xl">June beetle, Casey's
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R8<ENT O="xl">Ambrysus funebris<ENT O="xl">Naucoridae<ENT O="xl">Naucorid bug (=Furnace Creek), Nevares Spring
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Drosophila attigua<ENT O="xl">Drosophilidae<ENT O="xl">fly, Hawaiian picture-wing
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Drosophila digressa<ENT O="xl">Drosophilidae<ENT O="xl">fly, Hawaiian Picture-wing
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R2<ENT O="xl">Heterelmis stephani<ENT O="xl">Elmidae<ENT O="xl">Riffle beetle, Stephan's
U.S.A. (AZ)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R3<ENT O="xl">Hesperia dacotae<ENT O="xl">Hesperiidae<ENT O="xl">Skipper, Dakota
U.S.A. (MN, IA, SD, ND, IL), Canada

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT O="xl">Polites mardon<ENT O="xl">Hesperiidae<ENT O="xl">Skipper, Mardon

U.S.A. (CA, OR, WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R6<ENT
O="xl">Cicindela albissima<ENT O="xl">Cicindelidae<ENT O="xl">Tiger beetle,
Coral Pink Sand Dunes
U.S.A. (UT)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Cicindela highlandensis<ENT O="xl">Cicindelidae<ENT O="xl">Tiger beetle,
highlands
U.S.A. (FL)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">ARACHNIDS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT
O="xl">R2<ENT O="xl">Cicurina wartoni<ENT O="xl">Dictynidae<ENT
O="xl">Meshweaver, Warton cave
U.S.A. (TX)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">CRUSTACEANS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT
O="xl">R2<ENT O="xl">Gammarus hyalleloides<ENT O="xl">Gammaridae<ENT
O="xl">Amphipod, diminutive
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R1<ENT
O="xl">Metabetaeus lohena<ENT O="xl">Alpheidae<ENT O="xl">Shrimp, anchialine
pool
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R1<ENT
O="xl">Palaemonella burnsi<ENT O="xl">Palaemonidae<ENT O="xl">Shrimp, anchialine
pool
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R1<ENT
O="xl">Procaris hawaiana<ENT O="xl">Procarididae<ENT O="xl">Shrimp, anchialine
pool
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">4<ENT O="xl">R1<ENT
O="xl">Vetericaris chaceorum<ENT O="xl">Procaridae<ENT O="xl">Shrimp, anchialine
pool
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R4<ENT
O="xl">Typhlatya monae<ENT O="xl">Atyidae<ENT O="xl">Shrimp, troglobitic
groundwater
U.S.A. (PR), Barbuda, Dominican Republic

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">FLOWERING PLANTS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT
O="xl">R8<ENT O="xl">Abronia alpina<ENT O="xl">Nyctaginaceae<ENT O="xl">Sand-
verbena, Ramshaw Meadows
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R4<ENT
O="xl">Arabis georgiana<ENT O="xl">Brassicaceae<ENT O="xl">Rockcress, Georgia
U.S.A. (AL, GA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R4<ENT
O="xl">Argythamnia blodgettii<ENT O="xl">Euphorbiaceae<ENT O="xl">Silverbush,
Blodgett's
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Artemisia campestris var. wormskioldii<ENT O="xl">Asteraceae<ENT
O="xl">Wormwood, northern
U.S.A. (OR, WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Astelia waialealae<ENT O="xl">Liliaceae<ENT O="xl">Pa`iniu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R6<ENT
O="xl">Astragalus tortipes<ENT O="xl">Fabaceae<ENT O="xl">Milk-vetch, Sleeping
Ute
U.S.A. (CO)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Bidens amplectens<ENT O="xl">Asteraceae<ENT O="xl">Ko`oko`olau
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Bidens campylotheca pentamera<ENT O="xl">Asteraceae<ENT
O="xl">Ko`oko`olau
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Bidens campylotheca waihoiensis<ENT O="xl">Asteraceae<ENT
O="xl">Ko`oko`olau
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Bidens conjuncta<ENT O="xl">Asteraceae<ENT O="xl">Ko`oko`olau
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Bidens micrantha ctenophylla<ENT O="xl">Asteraceae<ENT O="xl">Ko`oko`olau
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R4<ENT
O="xl">Brickellia mosieri<ENT O="xl">Asteraceae<ENT O="xl">Brickell-bush,
Florida
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Calamagrostis expansa<ENT O="xl">Poaceae<ENT O="xl">Reedgrass, Maui
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Calamagrostis hillebrandii<ENT O="xl">Poaceae<ENT O="xl">Reedgrass,

Hillebrand's
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Calliandra locoensis<ENT O="xl">Mimosaceae<ENT O="xl">No common name
U.S.A. (PR)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R8<ENT
O="xl">Calochortus persistens<ENT O="xl">Liliaceae<ENT O="xl">Mariposa lily,
Siskiyou
U.S.A. (CA, OR)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Calyptranthes estremerae<ENT O="xl">Myrtaceae<ENT O="xl">No common name
U.S.A. (PR)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Canavalia napaliensis<ENT O="xl">Fabaceae<ENT O="xl">`Awikiwiki
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Canavalia pubescens<ENT O="xl">Fabaceae<ENT O="xl">`Awikiwiki
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Castilleja christii<ENT O="xl">Scrophulariaceae<ENT O="xl">Paintbrush,
Christ's
U.S.A. (ID)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R4<ENT
O="xl">Chamaecrista lineata var. keyensis<ENT O="xl">Fabaceae<ENT O="xl">Pea,
Big Pine partridge
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">12<ENT O="xl">R4<ENT
O="xl">Chamaesyce deltoidea pinetorum<ENT O="xl">Euphorbiaceae<ENT
O="xl">Sandmat, pineland
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">9<ENT O="xl">R4<ENT
O="xl">Chamaesyce deltoidea serpyllum<ENT O="xl">Euphorbiaceae<ENT
O="xl">Spurge, wedge
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Chamaesyce eleanoriae<ENT O="xl">Euphorbiaceae<ENT O="xl">`Akoko
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Chamaesyce remyi var. kauaiensis<ENT O="xl">Euphorbiaceae<ENT
O="xl">`Akoko
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Chamaesyce remyi var. remyi<ENT O="xl">Euphorbiaceae<ENT O="xl">`Akoko
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Charpentiera densiflora<ENT O="xl">Amaranthaceae<ENT O="xl">Papala
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">6<ENT O="xl">R8<ENT
O="xl">Chorizanthe parryi var. fernandina<ENT O="xl">Polygonaceae<ENT
O="xl">Spineflower, San Fernando Valley
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Chromolaena frustrata<ENT O="xl">Asteraceae<ENT O="xl">Thoroughwort, Cape
Sable
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Consolea corallicola<ENT O="xl">Cactaceae<ENT O="xl">Cactus, Florida
semaphore
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Cordia rupicola<ENT O="xl">Boraginaceae<ENT O="xl">No common name
U.S.A. (PR), Anegada

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea asplenifolia<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea calycina<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Cyanea dolichopoda<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea eleeleensis<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Cyanea kolekoleensis<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea kuhihewa<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea kunthiana<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea lanceolata<ENT O="xl">Campanulaceae<ENT O="xl">Haha
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea obtusa<ENT O="xl">Campanulaceae<ENT O="xl">Haha

U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyanea tritomantha<ENT O="xl">Campanulaceae<ENT O="xl">`aku `aku
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyrtandra filipes<ENT O="xl">Gesneriaceae<ENT O="xl">Ha`iwale
U.S.A. (HI).

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyrtandra kaulantha<ENT O="xl">Gesneriaceae<ENT O="xl">Ha`iwale
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyrtandra oenobarba<ENT O="xl">Gesneriaceae<ENT O="xl">Ha`iwale
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyrtandra oxybapha<ENT O="xl">Gesneriaceae<ENT O="xl">Ha`iwale
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Cyrtandra paliku<ENT O="xl">Gesneriaceae<ENT O="xl">Ha`iwale
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Cyrtandra sessilis<ENT O="xl">Gesneriaceae<ENT O="xl">Ha`iwale
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R4<ENT
O="xl">Dalea carthagenensis var. floridana<ENT O="xl">Fabaceae<ENT
O="xl">Prairie-clover, Florida
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R5<ENT
O="xl">Dichanthelium hirstii<ENT O="xl">Poaceae<ENT O="xl">Panic grass, Hirsts'
U.S.A. (DE, GA, NC, NJ)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Digitaria pauciflora<ENT O="xl">Poaceae<ENT O="xl">Crabgrass, Florida
pineland
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Dubautia imbricata imbricata<ENT O="xl">Asteraceae<ENT O="xl">Na`ena`e
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Dubautia kalalauensis<ENT O="xl">Asteraceae<ENT O="xl">Na`ena`e
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Dubautia kenwoodii<ENT O="xl">Asteraceae<ENT O="xl">Na`ena`e
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">3<ENT O="xl">R1<ENT

O="xl">Dubautia plantaginea magnifolia<ENT O="xl">Asteraceae<ENT O="xl">Na`ena`e
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Dubautia waialealae<ENT O="xl">Asteraceae<ENT O="xl">Na`ena`e
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R2<ENT
O="xl">Echinomastus erectocentrus var. acunensis<ENT O="xl">Cactaceae<ENT
O="xl">Cactus, Acuna
U.S.A. (AZ), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R2<ENT
O="xl">Erigeron lemmonii<ENT O="xl">Asteraceae<ENT O="xl">Fleabane, Lemmon
U.S.A. (AZ)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Eriogonum codium<ENT O="xl">Polygonaceae<ENT O="xl">Buckwheat, Umtanum
Desert
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">6<ENT O="xl">R8<ENT
O="xl">Eriogonum corymbosum var. nilesii<ENT O="xl">Polygonaceae<ENT
O="xl">Buckwheat, Las Vegas
U.S.A. (NV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R8<ENT
O="xl">Eriogonum diatomaceum<ENT O="xl">Polygonaceae<ENT O="xl">Buckwheat,
Churchill Narrows
U.S.A (NV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R8<ENT
O="xl">Eriogonum kelloggii<ENT O="xl">Polygonaceae<ENT O="xl">Buckwheat, Red
Mountain
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Festuca hawaiiensis<ENT O="xl">Poaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R2<ENT
O="xl">Festuca ligulata<ENT O="xl">Poaceae<ENT O="xl">Fescue, Guadalupe
U.S.A. (TX), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Gardenia remyi<ENT O="xl">Rubiaceae<ENT O="xl">Nanu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Geranium hanaense<ENT O="xl">Geraniaceae<ENT O="xl">Nohoanu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Geranium hillebrandii<ENT O="xl">Geraniaceae<ENT O="xl">Nohoanu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">5<ENT O="xl">R1<ENT

O="xl">Geranium kauaiense<ENT O="xl">Geraniaceae<ENT O="xl">Nohoanu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Gonocalyx concolor<ENT O="xl">Ericaceae<ENT O="xl">No common name
U.S.A. (PR)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Harrisia aboriginum<ENT O="xl">Cactaceae<ENT O="xl">Pricklyapple,
aboriginal (shellmound applecactus)
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R8<ENT
O="xl">Hazardia orcuttii<ENT O="xl">Asteraceae<ENT O="xl">Orcutt's hazardia
U.S.A. (CA), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Hedyotis fluviatilis<ENT O="xl">Rubiaceae<ENT O="xl">Kampua`a
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Helianthus verticillatus<ENT O="xl">Asteraceae<ENT O="xl">Sunflower,
whorled
U.S.A. (AL, GA, TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R2<ENT
O="xl">Hibiscus dasycalyx<ENT O="xl">Malvaceae<ENT O="xl">Rose-mallow, Neches
River
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R6<ENT
O="xl">Ipomopsis polyantha<ENT O="xl">Polemoniaceae<ENT O="xl">Skyrocket, Pagosa
U.S.A. (CO)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R8<ENT
O="xl">Ivesia webberi<ENT O="xl">Rosaceae<ENT O="xl">Ivesia, Webber
U.S.A. (CA, NV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Joinvillea ascendens ascendens<ENT O="xl">Joinvilleaceae<ENT O="xl">`Ohe
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Keysseria erici<ENT O="xl">Asteraceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Keysseria helenae<ENT O="xl">Asteraceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Korthalsella degeneri<ENT O="xl">Viscaceae<ENT O="xl">Hulumoa
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Labordia helleri<ENT O="xl">Loganiaceae<ENT O="xl">Kamakahala
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Labordia pumila<ENT O="xl">Loganiaceae<ENT O="xl">Kamakahala
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Leavenworthia crassa<ENT O="xl">Brassicaceae<ENT O="xl">Gladecress,
unnamed
U.S.A. (AL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R2<ENT
O="xl">Leavenworthia texana<ENT O="xl">Brassicaceae<ENT O="xl">Gladecress, Texas
golden
U.S.A. (TX)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Lesquerella globosa<ENT O="xl">Brassicaceae<ENT O="xl">Bladderpod,
Short's
U.S.A. (IN, KY, TN)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R4<ENT
O="xl">Linum arenicola<ENT O="xl">Linaceae<ENT O="xl">Flax, sand
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R4<ENT
O="xl">Linum carteri var. carteri<ENT O="xl">Linaceae<ENT O="xl">Flax, Carter's
small-flowered
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Lysimachia daphnoides<ENT O="xl">Myrsinaceae<ENT O="xl">Lehua makanoe
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Lysimachia iniki<ENT O="xl">Myrsinaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Lysimachia pendens<ENT O="xl">Myrsinaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Lysimachia scopulensis<ENT O="xl">Myrsinaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Lysimachia venosa<ENT O="xl">Myrsinaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Melicope christophersenii<ENT O="xl">Rutaceae<ENT O="xl">Alani
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Melicope degeneri<ENT O="xl">Rutaceae<ENT O="xl">Alani
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Melicope hiiakae<ENT O="xl">Rutaceae<ENT O="xl">Alani
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Melicope makahae<ENT O="xl">Rutaceae<ENT O="xl">Alani
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Melicope paniculata<ENT O="xl">Rutaceae<ENT O="xl">Alani
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Melicope puberula<ENT O="xl">Rutaceae<ENT O="xl">Alani
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Myrsine fosbergii<ENT O="xl">Myrsinaceae<ENT O="xl">Kolea
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Myrsine knudsenii<ENT O="xl">Myrsinaceae<ENT O="xl">Kolea
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Myrsine mezii<ENT O="xl">Myrsinaceae<ENT O="xl">Kolea
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Myrsine vaccinioides<ENT O="xl">Myrsinaceae<ENT O="xl">Kolea
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R5<ENT
O="xl">Narthecium americanum<ENT O="xl">Liliaceae<ENT O="xl">Asphodel, bog
U.S.A. (DE, NC, NJ, NY, SC)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Nothocestrum latifolium<ENT O="xl">Solanaceae<ENT O="xl">`Aiea
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Ochrosia haleakalae<ENT O="xl">Apocynaceae<ENT O="xl">Holei
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R2<ENT
O="xl">Pediocactus peeblesianus var. fickeiseniae<ENT O="xl">Cactaceae<ENT
O="xl">Cactus, Fickeisen plains
U.S.A. (AZ)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R6<ENT
O="xl">Penstemon debilis<ENT O="xl">Scrophulariaceae<ENT O="xl">Beardtongue,
Parachute
U.S.A. (CO)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">6<ENT O="xl">R6<ENT
O="xl">Penstemon scariosus var. albifluvis<ENT O="xl">Scrophulariaceae<ENT
O="xl">Beardtongue, White River

U.S.A. (CO, UT)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Peperomia subpetiolata<ENT O="xl">Piperaceae<ENT O="xl">`Ala `ala wai nui
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">5<ENT O="xl">R8<ENT
O="xl">Phacelia stellaris<ENT O="xl">Hydrophyllaceae<ENT O="xl">Phacelia,
Brand's
U.S.A. (CA), Mexico

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R6<ENT
O="xl">Phacelia submutica<ENT O="xl">Hydrophyllaceae<ENT O="xl">Phacelia,
DeBeque
U.S.A. (CO)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Phyllostegia bracteata<ENT O="xl">Lamiaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Phyllostegia floribunda<ENT O="xl">Lamiaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Phyllostegia hispida<ENT O="xl">Lamiaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Phyllostegia renovans<ENT O="xl">Lamiaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R1<ENT
O="xl">Physaria tuplashensis<ENT O="xl">Brassicaceae<ENT O="xl">Bladderpod,
White Bluffs
U.S.A. (WA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Pittosporum napaliense<ENT O="xl">Pittosporaceae<ENT O="xl">Ho`awa
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R4<ENT
O="xl">Platanthera integrilabia<ENT O="xl">Orchidaceae<ENT O="xl">Orchid, white
fringeless
U.S.A. (AL, GA, KY, MS, NC, SC, TN, VA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Platydesma cornuta var. cornuta<ENT O="xl">Rutaceae<ENT O="xl">No common
name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Platydesma cornuta var. decurrens<ENT O="xl">Rutaceae<ENT O="xl">No
common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT

O="xl">Platydesma remyi<ENT O="xl">Rutaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Platydesma rostrata<ENT O="xl">Rutaceae<ENT O="xl">Pilo kea lau li`i
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Pleomele fernaldii<ENT O="xl">Agavaceae<ENT O="xl">Hala pepe
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Pleomele forbesii<ENT O="xl">Agavaceae<ENT O="xl">Hala pepe
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">11<ENT O="xl">R8<ENT
O="xl">Potentilla basaltica<ENT O="xl">Rosaceae<ENT O="xl">Cinquefoil, Soldier
Meadow
U.S.A. (NV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Pritchardia hardyi<ENT O="xl">Asteraceae<ENT O="xl">Lo`ulu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Pseudognaphalium (=Gnaphalium) sandwicensium var. molokaiense<ENT
O="xl">Asteraceae<ENT O="xl">`Ena`ena
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Psychotria grandiflora<ENT O="xl">Rubiaceae<ENT O="xl">Kopiko
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT
O="xl">Psychotria hexandra ssp. oahuensis var. oahuensis<ENT
O="xl">Rubiaceae<ENT O="xl">Kopiko
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Psychotria hobdyi<ENT O="xl">Rubiaceae<ENT O="xl">Kopiko
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Pteralyxia macrocarpa<ENT O="xl">Apocynaceae<ENT O="xl">Kaulu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Ranunculus hawaiensis<ENT O="xl">Ranunculaceae<ENT O="xl">Makou
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Ranunculus mauiensis<ENT O="xl">Ranunculaceae<ENT O="xl">Makou
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R8<ENT
O="xl">Rorippa subumbellata<ENT O="xl">Brassicaceae<ENT O="xl">Cress, Tahoe
yellow

U.S.A. (CA, NV)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Schiedea attenuata<ENT O="xl">Caryophyllaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Schiedea pubescens<ENT O="xl">Caryophyllaceae<ENT O="xl">Ma`oli`oli
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Schiedea salicaria<ENT O="xl">Caryophyllaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">5<ENT O="xl">R8<ENT
O="xl">Sedum eastwoodiae<ENT O="xl">Crassulaceae<ENT O="xl">Stonecrop, Red
Mountain
U.S.A. (CA)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Sicyos macrophyllus<ENT O="xl">Cucurbitaceae<ENT O="xl">`Anunu
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">12<ENT O="xl">R4<ENT
O="xl">Sideroxylon reclinatum ssp. austrofloridense<ENT O="xl">Sapotaceae<ENT
O="xl">Bully, Everglades
U.S.A. (FL)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT
O="xl">Solanum nelsonii<ENT O="xl">Solanaceae<ENT O="xl">Popolo
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">8<ENT O="xl">R4<ENT
O="xl">Solidago plumosa<ENT O="xl">Asteraceae<ENT O="xl">Goldenrod, Yadkin River
U.S.A. (NC)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C<ENT O="xl">2<ENT O="xl">R2<ENT
O="xl">Sphaeralcea gierischii<ENT O="xl">Malvaceae<ENT O="xl">Mallow, Gierisch
U.S.A. (AZ, UT)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Stenogyne cranwelliae<ENT O="xl">Lamiaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">2<ENT O="xl">R1<ENT
O="xl">Stenogyne kealiae<ENT O="xl">Lamiaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R4<ENT
O="xl">Symphyotrichum georgianum<ENT O="xl">Asteraceae<ENT O="xl">Aster, Georgia
U.S.A. (AL, FL, GA, NC, SC)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT
O="xl">Tetraplasandra bisattenuata<ENT O="xl">Araliaceae<ENT O="xl">No common
name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT O="xl">Tetraplasandra flynnii<ENT O="xl">Araliaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Zanthoxylum oahuense<ENT O="xl">Rutaceae<ENT O="xl">A`e
U.S.A. (HI)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">FERNS AND ALLIES

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">8<ENT O="xl">R1<ENT O="xl">Christella boydiae (=Cyclosorus boydiae var. boydiae + Cyclosorus boydiae kipahuluensis)<ENT O="xl">Thelypteridaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT O="xl">Diellia mannii<ENT O="xl">Aspleniaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT O="xl">Doryopteris angelica<ENT O="xl">Pteridaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Doryopteris takeuchii<ENT O="xl">Pteridaceae<ENT O="xl">No common name
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">PE<ENT O="xl">-<ENT O="xl">R1<ENT O="xl">Dryopteris crinalis var. podosorus<ENT O="xl">Dryopteridaceae<ENT O="xl">Palapalai aumakua
U.S.A. (HI)

<ROW RUL="s&qdrt"><ENT I="01" O="xl">C*<ENT O="xl">2<ENT O="xl">R1<ENT O="xl">Huperzia (= Phlegmariurus) stemmermanniae<ENT O="xl">Lycopodiaceae<ENT O="xl">Wawae`iole
U.S.A. (HI)

<ENT I="01" O="xl">C*<ENT O="xl">3<ENT O="xl">R1<ENT O="xl">Microlepia strigosa var. mauiensis (=Microlepia mauiensis)<ENT O="xl">Dennstaedtiaceae<ENT O="xl">Palapalai
U.S.A. (HI)

<GPOTABLE COLS="7" OPTS="L4,i1" CDEF="s20,r20,r20,r50,r40,r60,r40">

Table 2. Animals and Plants Formerly Candidates or Formerly Proposed for Listing

<TDESC>Note: See end of SUPPLEMENTARY INFORMATION for an explanation of symbols used in this table.
</TDESC>

Status

Code

Expl.

Lead region

Scientific name

Family

Common name

Historical range

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">MAMMALS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">T<ENT O="xl">L<ENT O="xl">R7<ENT O="xl">Ursus maritimus<ENT O="xl">Ursidae<ENT O="xl">Bear, polar U.S.A. (AK), Canada, Russia, Denmark (Greenland), Norway

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">SNAILS

<ROW EXPSTB="00" RUL="s&qdrt"><ENT I="01" O="xl">Rc<ENT O="xl">A<ENT O="xl">R6<ENT O="xl">Oreohelix peripherica wasatchensis<ENT O="xl">Oreohelicidae<ENT O="xl">Mountainsnail, Ogden U.S.A. (UT)

<ROW EXPSTB="06" RUL="s&qdrt"><ENT I="01" O="oi0">FLOWERING PLANTS

<ROW EXPSTB="00"><ENT I="01" O="xl">Rc<ENT O="xl">A<ENT O="xl">R4<ENT O="xl">Indigofera trita subsp. scabra (formerly Indigofera mucronata var. keyensis)<ENT O="xl">Fabaceae<ENT O="xl">Indigo, Florida U.S.A. (FL); Belize, Brazil, Columbia, Costa Rica, Cuba, Ecuador, El Salvador, Ethiopia, Guatemala, Honduras, India, Jamaica, Laos, Madagascar, Mexico, Pakistan, Panama, Peru, Sierra Leone, Somalia, Sri Lanka, Tanzania, Zaire, and the islands of Hispaniola and New Guinea

[FR Doc. 08?????? Filed ????08; 8:45 am]BILLING CODE 4310-55-S

[FR Doc. 2008-28986 Filed 12/09/2008 at 8:45 am; Publication Date: 12/10/2008]