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50 CFR Part 17
Endangered and Threatened Wildlife and Plants; Annual Notice of Findings on Resubmitted Petitions for Foreign Species; Annual Description of Progress on Listing Actions; Proposed Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R9–ES–2010–0053; MO 92210–0–0010 B6]

Endangered and Threatened Wildlife and Plants; Annual Notice of Findings on Resubmitted Petitions for Foreign Species; Annual Description of Progress on Listing Actions

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of review.

SUMMARY: In this notice of review, we announce our annual petition findings for foreign species, as required under section 4(b)(3)(C)(i) of the Endangered Species Act of 1973, as amended. When, in response to a petition, we find that listing a species is warranted but precluded by higher priority listing actions, we must review the status of the species each year until we publish a proposed rule or make a determination that listing is not warranted. These subsequent status reviews and the accompanying 12-month findings are referred to as "resubmitted" petition findings.

Information contained in this notice describes our status review of 20 foreign taxa that were the subject of previous warranted-but-precluded findings, most recently summarized in our 2009 Notice of Review published on August 12, 2009 (74 FR 40540). Based on our current review, we find that 20 species continue to warrant listing, but their listing remains precluded by higher priority listing actions.

With this annual notice of review (ANOR), we are requesting additional information for the 20 taxa whose listings that remain warranted but precluded by higher priority listing actions. We will consider this information in preparing listing documents and future resubmitted petition findings for these 20 taxa. This information will also help us to monitor the status of the taxa and conserve them.

DATES: We will accept information on these resubmitted petition findings at any time.

ADDRESSES: This notice is available on the Internet at *http://www.regulations.gov,* and *http://endangered.fws.gov/.* Supporting information used in preparing this notice is available for public inspection, by appointment, during normal business hours at the Branch of Foreign Species, 4401 N. Fairfax Drive, Room 420, Arlington, Virginia 22203. Please submit any new information, materials, comments, or questions concerning this notice to the above street address.

FOR FURTHER INFORMATION CONTACT: Chief, Branch of Foreign Species, Endangered Species Program, (*see* **ADDRESSES**); by telephone at 703–358–2171; or by facsimile at 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:

Background

The Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), provides two mechanisms for considering species for listing. First, we can identify and propose for listing those species that are endangered or threatened based on the factors contained in section 4(a)(1) of the Act. We implement this mechanism through the candidate program. Candidate taxa are those taxa for which we have sufficient information on file relating to biological vulnerability and threats to support a proposal to list the taxa as endangered or threatened, but for which preparation and publication of a proposed rule is precluded by higher priority listing actions. The second mechanism for considering species for listing is when the public petitions us to add species to the Lists of Endangered and Threatened Wildlife and Plants (Lists). The species covered by this notice were assessed through the petition process.

Under section 4(b)(3)(A) of the Act, when we receive a listing petition, we must determine within 90 days, to the maximum extent practicable, whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted (90-day finding). If we make a positive 90-day finding, we are required to promptly commence a review of the status of the species. Using the information from the status review, in accordance with section 4(b)(3)(B) of the Act, we must make one of three findings within 12 months of the receipt of the petition (12-month finding). The first possible 12-month finding is that listing is not warranted, in which case we need not take any further action on the petition. The second possibility is that we may find that listing is warranted, in which case we must promptly publish a proposed rule to list the species. Once we publish a proposed rule for a species, sections 4(b)(5) and 4(b)(6) of the Act govern further procedures, regardless of whether or not we issued the proposal in response to the petition. The third possibility is that we may find that listing is warranted but precluded. A warranted but-precluded finding on a petition to list means that listing is warranted, but that the immediate proposal and timely promulgation of a final regulation is precluded by higher priority listing actions. In making a warranted-but-precluded finding under the Act, the Service must demonstrate that expeditious progress is being made to add and remove species from the Lists.

Pursuant to section 4(b)(3)(C)(i) of the Act, when, in response to a petition, we find that listing a species is warranted but precluded, we must make a new 12-month finding annually until we publish a proposed rule or make a determination that listing is not warranted. These subsequent 12-month findings are referred to as "resubmitted" petition findings. This notice contains our resubmitted petition findings for foreign species previously described in the 2009 Notice of Review (August 12, 2009, 74 FR 40540).

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; 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 request 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 request necessary information for setting priorities for preparing listing proposals.

On September 21, 1983, we published guidance for assigning a listing priority number (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). Guidelines for such a priority-ranking guidance system are 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), the life-history characteristics of the species and its current abundance and distribution; and whether the threats affect the species in only a portion of its range. We also consider 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." It 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 genera that have more than one species); and subspecies and distinct population segments of vertebrate species (DPS).

The result of the ranking system entails assigning each candidate a listing priority number of 1 to 12. For example, if the threat(s) is/are of high magnitude, with immediacy classified as imminent, the listable entity is assigned an LPN of 1, 2, or 3 based on its taxonomic status (i.e., a species that is the only member of its genus would be assigned to the LPN 1 category, a full species would be assigned to LPN 2, and a subspecies, DPS, or a species that is endangered or threatened in only 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. Each species included in this notice is one for which we have sufficient information to prepare a proposed rule to list, 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 Web site at: *http://www.fws.gov/endangered/esa-library/pdf/48fr43098-43105.pdf.* For more information on the LPN assigned to a particular species, the species assessment for each candidate contains the LPN and a rationale for the determination of the magnitude and imminence of threat(s) and assignment of the LPN; that information is presented in this ANOR.

Previous Notices

This revised notice supersedes all previous annual notices of review for foreign species. The species discussed in this notice were the result of three separate petitions submitted to the U.S. Fish and Wildlife Service (Service) to list a number of foreign bird and butterfly species as endangered or threatened under the Act. We received petitions to list foreign bird species on November 24, 1980, and May 6, 1991 (46 FR 26464, May 12, 1981; and 56 FR 65207, December 16, 1991, respectively). On January 10, 1994, we received a petition to list seven butterfly species as endangered or threatened (59 FR 24117; May 10, 1994).

We took several actions on these petitions. Our most recent review of petition findings was published on August 12, 2009 (74 FR 40540). Previously published petition findings, listing rules, status reviews, and petition finding reviews that included foreign species are also listed in the 2009 ANOR.

Summary of This ANOR

Since publication of the previous ANOR on August 12, 2009 (74 FR 40540), we reviewed the available information on candidate species to ensure that listing is warranted 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 listing priority numbers (i.e., species with LPNs of 1, 2, or 3). This review ensures that we focus conservation efforts on those species at greatest risk first. In addition to reviewing foreign candidate species since publication of the last ANOR, 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 Preclusion and Expeditious Progress,* below, for details).

Based on our review of the best available scientific and commercial information, with this ANOR, we have changed the LPN for several candidates. The review of these 20 species is summarized in Table 1.

Findings on Resubmitted Petitions

This notice describes our resubmitted petition findings for 20 foreign species for which we had previously found proposed listing to be warranted but precluded. We have considered all of the new information that we have obtained since the previous finding, and we have reviewed in accordance with our Listing Priority Guidance the listing priority number (LPN) of each taxon for which proposed listing continues to be warranted but precluded.

As a result of our review, we find that warranted-but-precluded findings remain appropriate for these 20 species. We emphasize that we are not proposing these species for listing by this notice, but we do anticipate developing and publishing proposed listing rules for these species in the future, with an objective of making expeditious progress in addressing all 20 of these foreign species within a reasonable timeframe.

Table 1 provides a summary of all updated determinations of the 20 taxa in our review. All taxa in Table 1 of this notice are ones for which we find that listing is warranted but precluded and are referred to as "candidates" under the Act. The column labeled "Priority" indicates the LPN. Following the scientific name of each taxon (third column) is the family designation (fourth column) and the common name, if one exists (fifth column). The sixth column provides the known historic range for the taxon. The avian species in Table 1 are listed taxonomically.

TABLE 1—ANNUAL NOTICE OF REVIEW

[C = listing warranted-but-precluded]

Status		Scientific name	Family	Common name	Historic range
Category	Priority				
Birds					
C	2	*Pauxi unicornis*	Craciidae	southern helmeted curassow.	Bolivia, Peru.
C	2	*Rallus semiplumbeus*	Rallidae	Bogota rail	Colombia.
C	8	*Porphyrio hochstetteri*	Rallidae	takahe	New Zealand.
C	8	*Haematopus chathamensis*	Haematopodidae	Chatham oystercatcher	Chatham Islands, New Zealand.
C	8	*Cyanoramphus malherbi*	Psittacidae	orange-fronted parakeet	New Zealand.
C	2	*Eunymphicus uvaeensis*	Psittacidae	Uvea parakeet	Uvea, New Caledonia.
C	2	*Ara glaucogularis*	Psittacidae	blue-throated macaw	Bolivia.
C	8	*Dryocopus galeatus*	Picidae	helmeted woodpecker	Argentina, Brazil, Paraguay.
C	2	*Dendrocopus noguchii*	Picidae	Okinawa woodpecker	Okinawa Island, Japan.
C	2	*Aulacorhynchus huallagae*	Ramphastidae	yellow-browed toucanet	Peru.
C	8	*Scytalopus novacapitalis*	Conopophagidae	Brasilia tapaculo	Brazil.
C	12	*Bowdleria punctata wilsoni*	Sylviidae	Codfish Island fernbird	Codfish Island, New Zealand.
C	2	*Zosterops luteirostris*	Zosteropidae	Ghizo white-eye	Solomon Islands.
C	8	*Tangara peruviana*	Thraupidae	black-backed tanager	Brazil.
C	6	*Strepera graculina crissalis*	Cracticidae	Lord Howe pied currawong	Lord Howe Islands, New South Wales.
Invertebrates					
C	6	*Eurytides (= Graphium or Mimoides) lysithous harrisianus.*	Paplionidae	Harris' mimic swallowtail	Brazil.
C	2	*Eurytides (= Graphium or Neographium or Protographium or Protesilaus) marcellinus.*	Paplionidae	Jamaican kite swallowtail	Jamaica.
C	5	*Parides ascanius*	Paplionidae	Fluminense swallowtail	Brazil.
C	2	*Parides hahneli*	Paplionidae	Hahnel's Amazonian swallowtail.	Brazil.
C	8	*Teinopalpus imperialis*	Paplionidae	Kaiser-I-Hind swallowtail	Bhutan, China, India, Laos, Myanmar, Nepal, Thailand, Vietnam.

Findings on Species for Which Listing Is Warranted but Precluded

We have found that, for the 20 taxa discussed below, publication of proposed listing rules continues to be warranted but precluded due to the need to complete pending, higher priority listing actions. We will continue to monitor the status of these species as new information becomes available (*see* Monitoring, below). Our review of new information will determine if a change in status is warranted, including the need to emergency list any species or change the LPN of any of the species. In the following section, we describe the status of and threats to the individual species.

Birds

A. Southern Helmeted Curassow (*Pauxi unicornis*), LPN = 2

The southern helmeted curassow, also known as the horned curassow, is one of the least frequently encountered South American bird species. This may be due to the inaccessibility of its preferred habitat and its apparent intolerance of human disturbance (Herzog and Kessler 1998; Macleod *et al.* 2009, p. 15). The southern helmeted curassow is only known to occur in central Bolivia and central Peru (BirdLife International (BLI) 2010a). The Bolivian population of the nominate (a subspecies with the same name as the species) species (*Pauxi unicornis unicornis*) remained unknown to science until 1937 (Cordier 1971). The Peruvian population is known as *Pauxi unicornis koepckeae.*

What is now recognized as the southern helmeted curassow may in fact comprise two separate species that are currently recognized as two subspecies (*Pauxi unicornis unicornis, and Pauxi unicornis koepckeae).* It has been proposed that these populations of *Pauxi unicornis* that are currently treated as subspecies may represent two different species because they are separated by more than 1,000 km (621 mi), and have a multitude of distinct characteristics (Gastañaga in prep. in BLI 2010a). Currently, both BLI and the International Union for Conservation of Nature (IUCN) recognize the southern helmeted curassow as *Pauxi unicornis* and do not specifically address either subspecies. The Integrated Taxonomic Information System (ITIS) recognizes *Pauxi unicornis* as a full species as well as both subspecies (ITIS 2010, accessed July 16, 2010). For the purpose of this ANOR, we are reviewing the petitioned entity, *Pauxi unicornis,* which includes all subspecies.

In many cases, taxonomy of species can be unclear. There is substantial discussion in scientific literature that debates the classification of species and whether various entities deserve species status rather than subspecies status (Phillimore 2010, pp. 42–53; James 2010, pp. 1–5; Pratt 2010, pp. 79–89). This is sometimes significant with respect to conservation measures,

particularly when considering the criteria used by organizations such as the IUCN. These two subspecies may in fact be species, but for the purpose of this review, these two subspecies essentially face the same threats, are generally in the same region of South America, and they both have quite small populations. Absent peer-reviewed information to the contrary and based on the best available information, we recognize both subspecies as being valid. For the purpose of this review, we are reviewing the petitioned entity, *Pauxi unicornis,* which includes all subspecies. We welcome comments on the classification of the southern helmeted curassow.

The southern helmeted curassow inhabits dense, humid, lower montane forest and adjacent evergreen forest at 450 to 1,200 meters (m) (1,476 to 3,937 feet) (Cordier 1971; Herzog and Kessler 1998). It prefers eating nuts of the almendrillo tree (*Byrsonima wadsworthii* (Cordier 1971)), but also consumes other nuts, seeds, fruit, soft plants, larvae, and insects (BLI 2008). Clutch size of the southern helmeted curassow is probably two, as in other *Cracidae.* However, the only nest found contained only one egg (Banks 1998; Cox *et al.* 1997; Renjifo and Renjifo 1997 as cited in BLI 2010a). The southern helmeted curassow typically occurs at densities up to 20 individuals per square kilometer (km^2) (Macleod 2007 as cited in BLI 2008).

In Amboró National Park (Yungas Inferiores de Amboró), the southern helmeted curassow was regularly sighted on the upper Saguayo river (Saguayo Río; Wege and Long 1995). Subsequently, it has been observed in the adjacent Amboró and Carrasco National Parks (Herzog and Kessler 1998; Brooks 2006). It was also found in Isiboro-Secure Indigenous Territory and National Park (TIPNIS), and along the western edge of the Cordillera Mosetenes (Mosetenes Mountains), Cochabamba, Bolivia. A recent survey located a few southern helmeted curassows across the northern boundary of Carrasco National Park (Yungas Inferiores de Carrasco), where it was historically found (MacLeod 2007 as cited in BLI 2009a). Surveys conducted between 2004 and 2005 found no evidence of the species anywhere north or east of Amboro, Carrasco, and Isiboro-Secure National Parks in central Bolivia (Macleod *et al.* 2009, p. 16). It was found only in five locations during the survey period. Extensive surveys over the last several years have failed to locate the species in Madidi National Park, La Paz, on the eastern edge of the Mosetenes Mountains in Cochabamba, or in the Río Tambopata area near the Bolivia-Peru border (MacLeod in litt. 2003 as cited in BLI 2010a; Hennessey 2004a as cited in BLI 2009a; Maccormack in litt. 2004 as cited in BLI 2008).

In Peru, *Pauxi unicornis koepckeae* is known only from the Sira Mountains (known as the Reserva Comunal El Sira), in Huanuco (Tobias and del Hoyo 2006). In 2005, a team from the Armonia Association (BirdLife in Bolivia) saw one and heard three southern helmeted curassow in the Sira Mountains: The first sighting of the distinctive endemic Peruvian subspecies since 1969 (BLI 2008). Limited reports suggest that the southern helmeted curassow is rare here (Mee *et al.* 2002; MacLeod in litt. 2004 as cited in BLI 2008; Maccormack in litt. 2004 as cited in BLI 2009a; Gastañaga and Hennessey 2005 as cited in BLI 2009a).

The total population of southern helmeted curassow is estimated to be between 1,000 and 4,999 individuals (BLI 2010a). The population in Peru is estimated to have fewer than 400 individuals (Gastañaga in litt. 2007, as cited in BLI 2010a). The estimated decline in the overall population over 10 years has been 50 to 79 percent (BLI 2009b).

Southern helmeted curassow populations are estimated to be declining very rapidly due to uncontrolled hunting and habitat destruction. This species has a small range and is known only from a few locations, which continue to be subject to habitat loss and hunting pressure. Hunting was indicated to be the biggest threat to southern helmeted curassow in all parts of its range (Gastañaga 2006). The species was often hunted for meat due to its large size and for its unique blue casque, or horn, which the local people used to make cigarette lighters (Cordier 1971; Collar *et al.* 1992). In the Amboró region of Bolivia, the bird's head was purportedly used in folk dances (Hardy 1984 as cited in Collar 1992). It is unclear whether this practice still occurs.

The Río Leche area in Peru experienced a 100 percent population decline in less than 5 years likely due to hunting or other pressures (Macleod *et al.* 2009, p. 16). In Carrasco National Park, the species had been abundant during surveys in 2001 but in 2004 there were no visual or auditory sightings (Macleod *et al.* 2009, p. 16). This may be due to illegal human encroachment. Similar human pressures are ongoing throughout the species' range. The observed decline infers that a 50-percent population loss likely occurred between 1995 and 2005. Unless threats are mitigated, this trend will probably continue for the next several years (Macleod in litt. 2005).

In Bolivia, forests within the range of the southern helmeted curassow are being cleared for crop cultivation by colonists from the altiplano (Maillard 2006, pp. 95–98). Rural development, including road building, inhibits its dispersal (Herzog and Kessler 1998; Fjeldså in litt. 1999 as cited in BLI 2010). In Peru, southern helmeted curassow habitat is threatened by subsistence agriculture (MacLeod in litt. 2000 as cited in BLI 2010a), forest clearing by colonists, illegal logging, mining, and oil exploration (BLI 2010a).

Conservation Status. According to IUCN's Species Survival Commission (SSC) Cracid Specialist Group, the southern helmeted curassow is critically endangered and should be given immediate conservation attention (Brooks and Strahl 2000). The southern helmeted curassow was previously classified as "Vulnerable" on the IUCN Red List. In 2005, it was uplisted to its current status as "Endangered" (BLI 2009a). It is not listed in any appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; www.cites.org), which regulates international trade in animals and plants of conservation concern.

The southern helmeted curassow is dependent upon pristine habitat. In Bolivia, large parts of southern helmeted curassow habitat are ostensibly protected by inclusion in the Amboro and Carrasco National Parks and in the Isiboro-Secure Indigenous Territory and National Park. However, pressures on the species' populations continue (BLI 2010a). In recent years, extensive field surveys of southern helmeted curassow habitat have resulted in little success in locating the species (Mee *et al.* 2002; Hennessey 2004a; MacLeod in litt. 2004 as cited in BLI 2009a; Maccormack in litt. 2004 as cited in BLI 2010a; MacLeod in litt. 2003 as cited in BLI 2010a). The Armonia Association has been attempting to estimate southern helmeted curassow population numbers to identify its most important populations, and is evaluating human impact on the species' natural habitat. In addition, Armonia is carrying out an environmental awareness project to inform local people about the threats to southern helmeted curassow (Asociación Armonía 2010) and is conducting training workshops with park guards to help improve chances for its survival.

In our 2009 ANOR, the southern helmeted curassow received an LPN of 8. After reevaluating the threats to the

species, we have determined that a change in the listing priority number representing the magnitude of threats to the species is warranted. The southern helmeted curassow does not represent a monotypic genus. It faces threats that are high in magnitude based on its small, limited range; and these few locations where it is believed to exist continue to be subject to habitat destruction and loss from agricultural development, road building, and hunting. Although the population is estimated to be between 1,000 and 4,999 individuals, the population trend is believed to be rapidly declining. In the past ten years, the species' population is believed to have declined between 50 and 79 percent (BLI 2009b). The best scientific information available suggests that these significant declines will continue in the future. The threats to the species are occurring now and are ongoing, and are therefore imminent. Because the species is experiencing such a significant population decline, we have changed the LPN from an 8 to a 2 to reflect imminent threats of high magnitude.

B. Bogota Rail (*Rallus semiplumbeus*), LPN = 2

The Bogota rail is found in the East Andes of Colombia on the Ubaté-Bogotá Plateau in Cundinamarca and Boyacá. It occurs in the temperate zone, at 2,500–4,000 m (occasionally as low as 2,100 m) (6,890 ft) in savanna and páramo marshes (BLI 2010b). Bogota rail inhabit wetland habitats with vegetation-rich shallows that are surrounded by tall, dense reeds and bulrushes (Stiles in litt. 1999 as cited in BLI 2010b). It inhabits the water's edge, in flooded pasture and along small overgrown dykes and ponds (Varty *et al.* 1986 as cited in BLI 2010b; Fjeldså 1990 as cited in BLI 2010b; Fjeldså and Krabbe 1990 as cited in BLI 2010b; Salaman in litt. 1999 as cited in BLI 2010b). Nests have been recorded adjoining shallow water in beds of *Scirpus* (bulrush or sedge) and *Typha* (cat tail) species. (Stiles in litt. 1999 as cited in BLI 2010b). The Bogota rail is omnivorous, consuming a diet that includes aquatic invertebrates, insect larvae, worms, mollusks, dead fish, frogs, tadpoles, and plant material (BLI 2010b; Varty *et al.* 1986 as cited in BLI 2010b).

The current population is estimated to range between 1,000 and 2,499 individuals, although numbers are expected to decline over the next 10 years by 10 to 19 percent (BLI 2009). Although the Bogota rail has been observed in at least 21 locations in Cundinamarca, the Bogota rail population is thought to be declining. It is still uncommon to fairly common, with a few notable populations, including nearly 400 birds at Laguna de Tota, approximately 50 bird territories at Laguna de la Herrera, approximately 100 birds at Parque La Florida, and populations at La Conejera marsh and Laguna de Fuquene (BLI 2010b).

Its suitable habitat has become widely fragmented (BLI 2010b). Wetland drainage, pollution, and siltation on the Ubaté-Bogotá plateau have resulted in major habitat loss and few suitably vegetated marshes remain. All major savanna wetlands are threatened, predominately due to draining, but also due to agricultural runoff, erosion, dyking, eutrophication caused by untreated sewage effluent, insecticides, tourism, hunting, burning, reed harvesting, fluctuating water levels, and increasing water demand. Additionally, road construction may result in colonization and human interference, including introduction of exotic species in previously stable wetland environments (Cortes in litt. 2007 as cited in BLI 2010b).

Conservation Status. The Bogota rail is listed as "Endangered" by IUCN primarily because its range is very small and is contracting due to widespread habitat loss and degradation. It is not listed in any appendices of CITES. Some Bogota rails occur in protected areas such as Chingaza National Park and Carpanta Biological Reserve. However, most savanna wetlands are virtually unprotected (BLI 2009).

In our 2009 ANOR, the Bogota rail received an LPN of 8. After reevaluating the threats to this species, we have determined that a change in the listing priority number for the species is appropriate. The Bogota rail does not represent a monotypic genus. It faces threats that are high in magnitude due to the pressures on the population's habitat. Its range is very small and is rapidly contracting because of widespread habitat loss and degradation (agricultural encroachment, erosion, dyking, and eutrophication). The population is believed to be between 1,000 and 2,499 individuals, and the population trend is believed to be rapidly declining. Based on new information regarding threats to this species, we find that the threats to the species are occurring now, are ongoing, and are therefore imminent. Thus, we have changed the LPN from an 8 to a 2 to reflect imminent threats of high magnitude.

C. Takahe (*Porphyrio hochstetteri,* Previously Known as *P. mantelli*), LPN = 8

The takahe, a flightless rail endemic to New Zealand, is the world's largest extant (living) member of the rail family (del Hoyo *et al.* 1996). The species, *Porphyrio mantelli,* was split into *P. mantelli* (extinct) and *P. hochstetteri* (extant) (Trewick 1996). BLI (2000) incorrectly assigned the name *P. mantelli* to the extant form, while the name *P. hochstetteri* was incorrectly assigned to the extinct form. Fossils indicate that this species was once widespread throughout New Zealand's North and South Islands. The takahe was thought to be extinct by the 1930s until its rediscovery in 1948 in the Murchison Mountains, Fiordland (South Island) (Bunin and Jamieson 1996; New Zealand Department of Conservation (NZDOC) 2009b). Soon after its rediscovery, a takahe Special Area of 500 km^2 (193 mi^2) was set aside in the Murchison Mountains of Fiordland National Park for the conservation of the takahe (Crouchley 1994; NZDOC 2009c). Today, the species is present in the Murchison and Stuart Mountains and was introduced to five island reserves (Kapiti, Mana, Tiritiri, Mantangi, Maud) and one privately owned island (Collar *et al.* 1994; NZDOC 2009d, p. 10). The population in the Murchison Mountains is important because it is the only mainland population and has the potential for sustaining a large, viable population (NZDOC 1997).

When rediscovered in 1948, it was estimated that the takahe population was about 260 pairs (del Hoyo 1996; Heather and Robertson 1997). By the 1970s, takahe populations had declined dramatically, and it appeared that the species was at risk of extinction. In 1981, the population reached a low at an estimated 120 birds. Since then, the population has fluctuated between 100 and 160 birds (Crouchley 1994; Maxwell 2001). At first, translocated populations increased only slowly, possibly in part due to young pair-bonds and the quality of the founding population (Bunin *et al.* 1997). In recent years, the total takahe population has experienced significant growth; in 2004, there was a 13.6 percent increase in the number of adult birds, with the number of breeding pairs up 7.9 percent (BLI 2005). As of June 2008, the estimated population of takahe was approximately 93 in the Core Census Area; 91 on islands and at Maungatautari (the mainland sanctuary); 36 at the Burwood Breeding Center; and 5 birds on public display at Wildlife Centers. The Core Census Area consists of suitable habitat east of the

Esk Burn and Woodrow Burn streams in the Murchison Mountains (NZDOC 2009d, pp. 9–10).

This species experienced a loss of fitness as a result of recent inbreeding. Relative to other species, it has low genetic diversity (Grueber *et al.* 2010, pp. 7–9). Research reported in 2010 that the true level of inbreeding may be underestimated for this species (Grueber *et al.* 2010, pp. 7–9). Failure to address these concerns could result in reduced fitness potential and much higher susceptibility to biotic and abiotic disturbances in the short term, and an inability to adapt to environmental change in the long term. There is growing evidence that inbreeding can negatively affect small, isolated populations. Jamieson *et al.* (2006) suggested that limiting the potential effects of inbreeding and loss of genetic variation should be integral to any management plan for a small, isolated, inbred island species such as the takahe.

As of 2009, the current total population estimate is 227 adults (NZDOC 2009d, p. 11; NZDOC 2009e). Birds under 1 year of age were not counted in these totals. As of 2007, the mainland population, as well as island reserves, were thought to be at carrying capacity (Greaves 2007, p. 17), (NZDOC 2009, p. 29), however a Recovery Plan is underway to address conservation priorities and needs for this species (NZDOC 2009d, entire). Overall, population numbers are slowly increasing due to intensive management of the island reserve populations, but fluctuations in the remnant mainland population continue to occur (NZDOC 2009d; BLI 2010c).

Takahe territories historically have been large; they have been known to be between several hectares (ha) to more than 100 ha (247 acres (ac)) depending on the availability of their preferred food sources (Lee and Jamieson 2001, p. 57). Takahe defend them aggressively against other takahe, which means that they will not form dense colonies even in very good habitat. They are long-lived birds, probably living between 14 and 20 years (Heather and Robertson 1997) and have a low reproductive rate, with clutches consisting of 1 to 3 eggs. They form life-long pair bonds and generally occupy the same territory throughout life (Reid 1967). Generally pairs in the wild only rear one chick. Only a few pairs manage to consistently rear more than one chick each year. Although under normal conditions this is generally sufficient to maintain the population, populations recover slowly from catastrophic events (Crouchley 1994); and this is a concern because this species has such a small population size. To increase the population, NZDOC has been removing some eggs from the wild, captive rearing them, and reintroducing them back into the wild (NZDOC 2009, p. 26).

Originally, the species occurred throughout forest and grass ecosystems. Now takahe occupy alpine grasslands (BLI 2010c). They feed on tussock grasses during much of the year; snow tussocks (*Chionochloa pallens, Chionochloa conspicua, Chionochloa flavescens,* and *Chionochloa crassiuscula*) are their preferred food (Mills and Mark 1977, p. 951; Mills *et al.,* 1980, Crouchley 1994, NZDOC 2009, pp. 39–40). These grasses are high in nutritional content. *C. flavescens* is high in phosphorus; *C. pallens* is high in starch; and *C. crassiuscula* is high in sulphur, starch, and sodium (Mills and Mark 1977, pp. 951, 953). takahe also forage on *Carex coriacea,* which is also high in nutrients. During some seasons, takahe prefer plants with high phosphorus content; for example, during spring and autumn, they prefer *C. crassiuscula.* From October to December, when they lay eggs, they prefer mountain daisy (*Celmisia petriei),* which has high levels of calcium and sugar (Mills and Mark 1977, pp. 952–953). By June, the snow cover usually prevents feeding above tree line, and birds move into forested valleys in the winter and feed mainly on the rhizome of a fern (*Hypolepis millefolium*) which has a high carbohydrate content (Mills *et al.* 1980, p. 136).

Research by Mills *et al.* (1980) suggested that takahe require the high-carbohydrate concentrations in the rhizomes of the fern to meet the metabolic requirement of thermoregulation in the mid-winter subfreezing temperatures. *Chionochloa conspicua* (bush snow-grass) is the takahe's preferred winter food in the Murchison Mountains, although new information indicates that it is currently uncommon due to overgrazing by deer (NZDOC 2009d, pp. 39–40). *C. conspicua* has higher levels of phosphorus, potassium and magnesium (Mills *et al.* 1980, p. 136) than *Hypolepis spp.,* which is currently the primary plant in the winter takahe diet.

Although *Hypolepis* rhizomes may not be sufficient for a balanced winter diet, they are a valuable source of starch, nitrogen and phosphorus (Mills *et al.* 1980, p. 136). Because foraging on *Hypolepis* is a learned behavior, it is being taught at the Burwood Captive Rearing Center to chicks by adult birds (NZDOC 2009d, p. 27).

Rareness of *C. conspicua* may be a contributing factor to the lack of viability of the takahe population (NZDOC 2009d, pp. 39–40). There are no known diseases that pose threats to the takahe. *C. conspicua* is less common in the forest understory in the takahe Special Area than it previously was, in part due to overgrazing by deer. NZDOC is conducting research and trying to reintroduce and increase the prevalence of this plant species in the Murchison Mountains Reserve (NZDOC 2009d, pp. 39–40). The island populations now primarily consume introduced grasses (BLI 2010c). Some researchers have theorized that consumption of these nonnative species may contribute to inadequate nutrition and subsequently nest failure (Jamieson 2003, p. 708); however this has not been confirmed.

Several factors have led to the decline in the species' population. The main cause of the species' historical decline was competition for tussock grasses by grazing red deer (*Cervus elaphus*), which were introduced after the 1940s (Mills and Mark 1977). The red deer overgrazed the takahe's habitat, eliminating nutritious plants and preventing some grasses from seeding (del Hoyo *et al.* 1996; NZDOC 2009, p. 39). The NZDOC has controlled red deer through an intensive hunting program in the Murchison Mountains since the 1960s. Predation by introduced stoats (*Mustela erminea*) is still a threat to the species (Crouchley 1994; Bunin and Jamieson 1995; Bunin and Jamieson 1996; NZDOC 2009, pp. 34–36). The NZDOC is running a trial stoat control program in a portion of the takahe Special Area to measure the effect on takahe survival and productivity. Initial assessment indicates that the control program has had a positive influence (NZDOC 2009, pp. 35–36).

Other potential threats include a competitor, the introduced brush-tailed possum (*Trichosurus vulpecula*) and the predator, the threatened weka (*Gallirallus australis*), a flightless woodhen endemic to New Zealand (BLI 2010c). Severe weather may also be a limiting factor to this species (Bunin and Jamieson 1995; BLI 2010c). Weather patterns in the Murchison Mountains vary from year to year. High chick and adult mortality may occur during extraordinarily severe winters, and poor breeding may result from severe stormy weather during spring breeding season (Crouchley 1994). Research has confirmed that severity of winter conditions adversely affects survivorship of takahe in the wild, particularly of young birds (Maxwell and Jamieson 1997).

Lead exposure may affect this species on some of the islands (Youl 2009, pp. 79–83). Lead levels in the island populations were found to be higher

than those on the mainland. Older buildings on some of the island contain lead paint. One or more takahe breeding pairs were located near buildings containing lead-based paint. A family group on one island that was close to a building containing lead paint was found to have significantly higher lead levels than a family group located away from buildings (Youl 2009, p. 80). Lead has been found to affect the learning capacity of avian species (Youl 2009, pp. 11–13). This exposure to lead may lead to decreased fitness of takahe.

Conservation Status. The takahe is listed as "Endangered" on the IUCN Red List because it has an extremely small population (BLI 2010c). It is not listed in any appendices of CITES. New Zealand considers the takahe to be an endangered species and it is classified as "Nationally Critical" under the New Zealand Threat Classification System. The NZDOC, through its 2007–2012 takahe Recovery Plan, is managing the populations of the species through various conservation efforts such as captive breeding, population management, eradication of predators, and management of grasslands.

Since 1983, the NZDOC has been involved in managing a captive-breeding and release program to boost takahe recovery (NZDOC 2009, p. 29). Excess eggs from wild nests are managed to produce birds suitable for releasing back into the wild population in the Murchison Mountains. Some of these captive-reared birds were used to establish five predator-free, offshore island reserves. These captive-breeding efforts have increased the rate of survival of chicks reaching one year of age from 50 to 90 percent (NZDOC 1997; NZDOC 2009d). Takahe that have been translocated to the islands have higher rates of egg infertility and low hatching success when they breed (Jamieson & Ryan 2000). Researchers postulated that the difference in vegetation between the native mainland grassland tussocks and the grasses found on the islands might affect reproductive success. After testing nutrients from available food sources, it remains unclear whether the islands contain adequate nutrients in the available food sources (James *et al.* 2004, pp. 342–344). Research on takahe that are established on Tiritiri Matangi Island estimated that the island can currently support up to 8 breeding pairs, but suggested that the ability of the island to support takahe is likely to decrease as the grass and shrub ecosystem reverts to forest. The researchers concluded that, although the four island populations fulfilled their role as insurance against extinction on the mainland at the time of the study, given impending habitat changes on the islands, it is unclear whether these island populations will continue to be viable in the future without an active management plan (Baber and Craig 2003a; Baber and Craig 2003b). Maxwell and Jamieson (1997) studied survival and recruitment of captive-reared and wild-reared takahe on Fiordland. They concluded that captive rearing of takahe for release into the wild increases recruitment of juveniles into the population.

In our 2009 ANOR, the takahe received an LPN of 8. After reevaluating the threats to the takahe, we have determined that no change in the classification of the magnitude and imminence of threats to the species is warranted at this time. The takahe does not represent a monotypic genus. The current population is small (between 150–220 individuals), and the species' distribution is extremely limited. It faces threats that are moderate in magnitude (extremely small population, limited suitable habitat, inbreeding depression, and to some extent predation) because the NZDOC has taken measures to aid the recovery of the species (NZDOC 2009d, 58 pp.; NZDOC 2009e, 3 pp.) and is active in the species conservation and recovery. The NZDOC has implemented a successful deer control program, implemented a captive-breeding and release program to augment the mainland population, and established four offshore island reserves. However, we find that the threats are on-going and therefore, imminent. Predation by introduced species and reduced survivorship resulting from severe winters, combined with the takahe's small population size and naturally low reproductive rate are threats to this species that are moderate in magnitude. Thus, the LPN remains at 8 to reflect imminent threats of moderate magnitude.

D. Chatham Oystercatcher (*Haematopus chathamensis*), LPN = 8

The Chatham oystercatcher is the most rare oystercatcher species in the world (NZDOC 2001). It is endemic to the Chatham Island group (Marchant and Higgins 1993; Schmechel and Paterson 2005), which lies 860 km (534 mi) east of mainland New Zealand. The Chatham Island group consists of two large, inhabited islands (Chatham and Pitt) and numerous smaller islands. Two of the smaller islands (Rangatira and Mangere) are nature reserves, which provide vitally needed habitat for the Chatham oystercatcher. The Chatham Island group has a biota quite different from the mainland. The remote marine setting, distinct climate, and physical makeup have led to a high degree of endemism (Aikman *et al.* 2001). The southern part of the Chatham oystercatcher range is dominated by rocky habitats with extensive rocky platforms. The northern part of the range is a mix of sandy beach and rock platforms (Aikman *et al.* 2001).

Pairs of Chatham oystercatchers occupy their territory all year, while juveniles and subadults form small flocks or occur alone on vacant sections of the coast. Their scrape nests (shallow-rimmed depressions in soil or vegetation) are usually on sandy beaches just above spring-tide and storm surge level or among rocks above the shoreline and are often under the cover of small bushes or rock overhangs (Heather and Robertson 1997).

In the early 1970s, the Chatham oystercatcher population was approximately 50 birds (del Hoyo 1996). The population increased by 30 percent overall between 1987 and 1999, except trends varied in different areas of the Chatham Islands (Moore *et al.* 2001). Surveys taken over a 6-year period recorded an increase in Chatham oystercatchers from approximately 100 individuals in 1998 to 320 individuals (including 88 breeding pairs) in 2005 (Moore 2005a; Moore 2009b, p. 32). Although the overall population has significantly increased over the last 20 years, the population on South East Island (Rangatira), an island free of mammalian predators, has gradually declined since the 1970s. The reason for the decline is unknown (Schmechel and O'Connor 1999) but is likely due to large waves during sea storms which destroy the nests (Moore 2009a, p. 9).

Predation, nest disturbance, invasive plants, and spring tides and storm surges are factors threatening the Chatham oystercatcher population (NZDOC 2001, Moore 2005; Moore 2009a, pp. 8–9). Feral cats (*Felis catus*) have become established on two of the Chatham Islands after being introduced as pets. Severe reduction in Chatham oystercatcher numbers is attributed in part to heavy cat predation. Video cameras placed to observe nests indicated that feral cats are a major nest predator. After three summers of video recording, 13 of the 19 nests recorded were predated by cats. When a cat was present eggs usually lasted only 1 or 2 days.

Another predator, the weka (*Gallirallus australis*), an endemic New Zealand rail was introduced to the Chatham Islands in the early 1900s. Weka was observed preying upon this species three times through camera trapping between 1999 and 2001 (Moore

2009a, p. 8). It is not considered as severe a threat to the Chatham oystercatcher as feral cats because weka only prey on eggs when adult oystercatchers are not present.

Other potential predators include the Norway rat (*Rattus norvegicus*), ship rat (*R. rattus*), Australian brush-tailed possum (*Trichsurus vulpeculs*), and hedgehog (*Erinaceus europaeus*). However, these predators are not considered serious threats because of the large size of the oystercatcher eggs. Native predators include the red-billed gull (*Larus scopulinus*), and southern black-backed gull (*L. dominicanus*) (Moore 2005b). Nest destruction and disturbance is caused by people fishing, walking, or driving on or near nests. When a nesting area is disturbed, adult Chatham oystercatchers often abandon their eggs for up to an hour or more, leaving the eggs vulnerable to opportunistic predators. Eggs are also trampled by livestock (Moore 2005a). In one case, a sheep was observed to lie on a nest (Moore 2009b, p. 21).

Another obstacle to Chatham oystercatcher populations is marram grass (*Ammophila arenaria*), introduced to New Zealand from Europe to protect farmland from sand encroachment. Marram grass has spread to the Chatham Islands where it binds beach sands forming tall dunes with steep fronts. In many marram-infested areas, the strip between the high tide mark and the fore dunes narrows as the marram advances seaward. Consequently, the Chatham oystercatcher is forced to nest closer to shore where nests are vulnerable to tides and storm surges. The dense marram grass is unsuitable for nesting (Moore and Davis 2005). In a study done by Moore and Williams (2005), the authors found that, along the narrow shoreline, many eggs were washed away and the adults would not successfully breed without human intervention. Oystercatcher eggs could easily be moved away from the shoreline by fieldworkers and placed in hand-dug scrapes surrounded by tidal debris and kelp. After three summers of video recording, 13 of the 19 nests recorded were predated by cats, but of the remaining six nest failures, weka were responsible for three; red-billed gull, one; sheep-trampling, one; and sea wash, one (Moore 2005b).

Conservation Status. Chatham oystercatcher is listed as critically endangered by the NZDOC (2010d), making it a high priority for conservation management (NZDOC 2007). It is classified as "Endangered" on the IUCN Red List because it has an extremely small population (BLI 2010d). It is not listed in any appendices of CITES.

The birds of the Chatham Island group are protected. The NZDOC focused conservation efforts in the early 1990s on predator trapping and fencing to limit domestic stock access to nesting areas. In 2001, the NZDOC published the Chatham Island Oystercatcher Recovery Plan 2001–2011 (NZDOC 2001, 24 pp.), which outlines actions such as translocation of nests away from the high tide mark and nest manipulation to further the conservation of this species. These actions may have helped to increase hatching success (NZDOC 2008b). Artificial incubation has been attempted but has not increased productivity. Additionally, livestock have been fenced and signs erected to reduce human and dog disturbance. Marram grass control has been successful in some areas. Intensive predator control combined with nest manipulation has resulted in a high number of fledglings (BLI 2009).

In our 2009 ANOR, the Chatham oystercatcher received an LPN of 8. After reevaluating the threats to this species, we have determined that no change in the classification of the magnitude and imminence of threats to the species is warranted at this time. The Chatham oystercatcher does not represent a monotypic genus. The current population estimate is very small—between 50 and 300 individuals—and the species only occurs in a small area. Although it faces threats that are moderate in magnitude (predation, low population numbers, and potential loss due to storm surges); the NZDOC has taken measures to aid the recovery of the species that appear to be effective (the species' population is increasing), However, we find that the threats are still on-going and therefore, imminent. The LPN remains an 8 to reflect imminent threats of moderate magnitude.

E. Orange-Fronted Parakeet (*Cyanoramphus malherbi*), LPN = 8

The orange-fronted parakeet, also known as Malherbe's parakeet is endemic to New Zealand. It was treated as an individual species until it was proposed to be a color morph of the yellow-crowned parakeet, *C. auriceps,* in 1974 (Holyoak 1974). Further taxonomic analysis suggested that it should once again be considered a distinct species (Kearvell *et al.* 2003). ITIS recognizes *Cyanoramphus malherbi* as a full species (ITIS 2010, accessed July 16, 2010). Absent peer-reviewed information to the contrary, we consider the orange-fronted parakeet to be a valid species.

At one time, the orange-fronted parakeet was scattered throughout most of New Zealand (Harrison 1970). This species has been described as never being common (Mills and Williams 1979). During the 19th century, the species' distribution included South Island, Stewart Island, and a few other offshore islands of New Zealand (NZDOC 2009a). Currently, there are three known remaining populations. The South Island populations are managed and located within a 30-km (18.6-mi) radius in beech (*Nothofagus* spp.) forests of upland valleys (Hawdon and Poulter valleys). These valleys are within Arthur's Pass National Park and the Hurunui South Branch in Lake Sumner Forest Park in Canterbury, South Island (NZDOC 2009a). Two populations of this species have also been established on Chalky and Maud Islands (Elliott and Suggate 2007; Ortiz-Catedral and Brunton 2009, p. 385). Between 2007 and 2009, 62 birds were introduced to Maud Island.

This species inhabits southern beech forests, with a preference for locales bordering stands of *N. solandri* (mountain beech) (del Hoyo 1997; Snyder *et al.* 2000; Kearvell 2002). The species is reliant on old mature beech trees with natural cavities or hollows for nesting. Breeding is linked with the irregular seed production by *Nothofagus;* in mast years (years yielding a high abundance of seeds), parakeet numbers can increase substantially. On South Island, *Nothofagus* species were observed to be a major component of its diet (Kearvall *et al.* 2002, pp. 140–145). On Maud Island, a primary component of its diet was *Melicytus ramiflorus* (mahoe) (Ortiz-Catedral and Brunton 2009, p. 385). In addition to eating seeds, the orange-fronted parakeet feeds on fruits, leaves, flowers, buds, and small invertebrates (BLI 2009).

The orange-fronted parakeet has an extremely small, fragmented population and limited range, and its population has declined during the past 10 years (BLI 2010e). Currently, BLI estimates its population in the wild to be between 50 and 249 individuals (BLI 2010e, p. 1). NZDOC's population estimate is between 100 to 200 individuals in the wild and they also believe the population is declining (NZDOC 2009a).

There are several reasons for the species' continuing decline; one of the most prominent risks to the species is believed to be predation by introduced species, such as stoats (*Mustela erminea*) and rats (*Rattus* spp.) (BLI 2009). Large numbers of stoats and rats

in beech forests cause large losses of parakeets (NZDOC 2009c). Stoats and rats are excellent hunters on the ground and in trees. They are able to exploit parakeet nests and roosts in tree holes, which impacts primarily females, chicks, and eggs (NZDOC 2009c).

In 2007, habitat loss and degradation were considered threats to the orange-fronted parakeet (BLI 2007b). Large areas of native forest have been felled or burnt, decreasing the habitat available for parakeets (NZDOC 2009c). Silviculture of beech forests aims to harvest trees at an age when few will become mature enough to develop suitable cavities for orange-fronted parakeets (Kearvell 2002). The habitat is also degraded by brush-tailed possum (*Trichosurus vulpecula*), cattle, and deer, which browse on plants, changing the forest structure (NZDOC 2009c). This is problematic for the orange-fronted parakeet, which utilizes the ground and low-growing shrubs while feeding (Kearvell *et al.* 2002).

Other risks to this species' viability exist. Some of these other potential threats include increased competition between the orange-fronted parakeet and the yellow-crowned parakeet for nest sites and food in a habitat substantially modified by humans; competition with introduced finch species; and competition with introduced wasps (*Vespula vulgaris* and *V. germanica*) which compete with parakeets for invertebrates as a dietary source (Kearvell *et al.* 2002). Hybridization is also a concern. The orange-fronted parakeet may hybridize with other species. Snyder *et al.* reported that hybridization with yellow-crowned parakeets (*C. auriceps*) had been observed at Lake Sumner (2000). In some cases, we are not able to distinguish between hybridized birds and full species due to similarities in color (Chan 2006, p. 5).

Conservation Status. The NZDOC (2009b) considers the orange-fronted parakeet, or käkäriki, to be the rarest parakeet in New Zealand. Because it is classified as "Nationally Critical" with a high risk of extinction, the NZDOC has been working intensively on the species to ensure its survival. The species is listed as "Critically Endangered" on the IUCN Red List, "because it underwent a population crash following rat invasions between 1990–2000." It is listed in Appendix II of CITES as part of a general listing for all parrots (CITES 2010).

The NZDOC closely monitors all known populations of the orange-fronted parakeet. Nest searches are conducted, nest holes are inspected, and surveys are carried out in other areas to look for evidence of other populations. For example, the surveys successfully located another orange-fronted parakeet population in May 2003 (NZDOC 2009d). A new population was established in 2006 on the predator-free Chalky Island. Eggs were removed from nests in the wild, and foster parakeet parents incubated the eggs and cared for the hatchlings until they fledged and were transferred to the island. Monitoring later in the year (2006) indicated that the birds had successfully nested and reared chicks. Additional birds will be added to the Chalky Island population in an effort to increase the genetic diversity of the population (NZDOC 2009d). A second self-sustaining population has been established on Maud Island (NZDOC 2008).

Because the NZDOC determined that the species' largest threat is predation, they initiated a program to remove predators in some parts of the species' range. "Operation ARK" is their initiative to respond to predator problems in beech forests to prevent species' extinctions, including orange-fronted parakeets. Predators are methodically controlled with traps, toxins in bait stations, bait bags, and aerial spraying, when necessary (NZDOC 2009d). The NZDOC also implemented a captive-breeding program for the orange-fronted parakeet. Using captive-bred birds from the program, NZDOC established two self-sustaining populations of the orange-fronted parakeet on predator-free islands. The NZDOC monitors wild nest sites and is actively managing the conservation of the species, as evidenced by the 2003 discovery of a new population. Despite these controls, predation by introduced species is still a threat because predators have not been eradicated from this species' range.

In our 2009 ANOR, the orange-fronted parakeet received an LPN of 8. After reevaluating the threats to the orange-fronted parakeet, we have determined that no change in the classification of the magnitude of threats to the species is warranted because NZDOC is actively managing the species. The orange-fronted parakeet does not represent a monotypic genus. Although the species' available suitable nesting habitat in beech forests is extremely restricted, translocations have taken place and seem to be successful (BLI 2010e, p. 2). Although the current population is small and declining (between 50 and 249 individuals), and the species' distribution is extremely limited, threats are being mitigated. It has a very small and severely fragmented population that has declined over the past 10 years (BLI 2010e) but it is being closely monitored and may slowly be increasing (van Hal *in litt,* in BLI 2010e). The species faces threats that are moderate in magnitude (competition for food and suitable nesting habitat within highly altered habitat, predation, and habitat degradation) because the NZDOC has taken measures to aid the recovery of the species. However, because the threats are on-going, we find that the threats to this species are still imminent. Thus, the LPN remains at 8 to reflect imminent threats of moderate magnitude.

F. Uvea Parakeet (*Eunymphicus uvaeensis*), LPN = 2

The Uvea parakeet, previously known as *Eunymphicus cornutus,* is currently known as both *E. uvaeensis* and *E. c. cornutus* (Boon *et al.* 2008, p 251; BLI 2010f). BLI recognizes the Uvea parakeet as *E. uvaeensis.* ITIS considers the Uvea parakeet to be a subspecies, *Eunymphicus cornutus uvaeensis* (ITIS 2010, accessed July 16, 2010). Research presented in 2008 indicates that the Uvea parakeet, based on genetic, ecological, behavioral, and biogeographical evidence, is so markedly distinct that it warrants status as its own species (Boon 2008 *et al.,* p. 259). Thus, in this ANOR, based on the best scientific and commercial data available, we consider the Uvea parakeet to be the species *E. uvaeensis.* We are evaluating the threats to the Uvea parakeet at the taxonomic level of a species.

The Uvea parakeet is found only on the small island of Uvea (also known as both Ouvéa Island and Wallis Island) in the Loyalty Archipelago, New Caledonia (a territory of France) in the South Pacific Ocean. The island is approximately 1,500 km (932 mi) east of Australia. Uvea Island is 110 km² (42 mi²) in size (Juniper and Parr 1998). The Uvea parakeet is found primarily in old-growth forests, specifically those dominated by the pine tree *Agathis australis* (del Hoyo *et al.* 1997). The island is predominantly limestone and lacks deep soil layers (Boon *et al.* 2008, p. 257). Most birds occur in about 20 km² (7.7 mi²) of forest in the north, although some individuals are found in strips of forest on the northwest isthmus and in the southern part of the island, with a total area of potential habitat of approximately 66 km² (25.5 mi²) (BLI 2010f).

Uvea parakeets feed on fruit, the berries of vines, and the flowers and seeds of native trees and shrubs (del Hoyo *et al.* 1997; Robinet and Salas 2003, p. 71). They also feed on a few types of crops in cultivated land

adjacent to their habitat. The greatest number of birds occurs close to gardens with papayas (BLI 2010f). A significant characteristic is that Uvea parakeet nest in cavities of native trees; the absence of suitable trees and nesting cavities may be a limiting factor (Robinet and Salas 2003, p. 71). Their clutch size is generally 2 to 3 eggs; and they are known to have another clutch if the first set of eggs is destroyed (termed "double-clutch") (BLI 2010f).

One survey of Uvea parakeet in the early 1990s estimated that the population was between 70 and 90 individuals (Hahn 1993). However, another survey in 1993 (Robinet *et al.* 1996) yielded an estimate of between 270 and 617 individuals. In 1999, it was believed that 742 individuals lived in northern Uvea, and 82 in the south (Primot 1999 as cited in BLI 2010f). Six surveys conducted between 1993 and 2007 indicated a steady increase in population numbers in both areas (Verfaille in litt. 2007 as cited in BLI 2010f). The current population estimate is 750 individuals (BLI 2010f).

Various threats to this species exist. The Uvea parakeet is primarily threatened by lack of nesting sites due to competition from bees and historic habitat loss, and to lesser extents predation and possibly capture of juveniles for the pet trade (Robinet *et al.* 2003, pp. 73, 78; BLI 2010f, p. 2). Although the forest habitat of the Uvea parakeet has been threatened by clearance for agriculture and logging in the past, the primary threats now appear to be competition by bees for nests and predation by goshawk (*Accipiter fasciatus*) (Robinet *et al.* 2003, p. 73). The invasion of bees into Uvea in 1996 resulted in competition with Uvea parakeet over nesting sites. This decreased known Uvea parakeet nesting sites by 10 percent between 2000 and 2002 (Barré in litt. 2003 as cited in BLI 2010f). Studies by Robinet *et al.* (2003) indicate the density of breeding Uvea parakeet is positively related to the distribution of suitable trees. Consequently, the limited number of suitable trees limits the number of breeding pairs. In two other cases, Robinet *et al.* (2003) observed successful nesting after human restoration of former nest sites that had been destroyed by illegal collectors. This further indicates the deleterious effect of nest-site limitation. Another limiting factor is forest fragmentation as a result of increased numbers of coconut plantations which acts as a barrier to dispersal. This could possibly explain the lack of recolonization in southern Uvea (Robinet *et al.* 2003).

It is unknown if capture of young Uvea parakeets for the pet trade is still occurring, and if so, to what extent. Capture of juvenile parakeets involves cutting open nesting cavities to extract nestlings, which renders the holes unsuitable for future nesting. Robinet *et al.* (1996) suggested that the impact of capture of juveniles on the viability of populations is not obvious in long-lived species that are capable of re-nesting, such as Uvea parakeet.

In 1999, a study of the reproductive biology of Uvea parakeet found that the main cause of chick death was starvation of the third chick within the first week after hatching (Robinet and Salas). However, the reason underlying the starvation is unknown.

Norway rats are prolific invaders of islands and can rapidly establish large populations (Russell 2007). Additionally, impacts of the rat appear to be more severe on smaller islands (Martin *et al.* 2000). In one study, it was determined that the low rate of predation on nest sites of Uvea parakeet was related to the absence of the ship rat and Norway rat. However, these rat species are present on the other nearby Loyalty Islands and on Grande Terre (Robinet and Salas 1996); precautions need to be taken to ensure that rats do not reach Uvea Island. Egg predation rates were four times higher on Lifou (also known as Lifu Island) where *R. rattus* occurs (Robinet *et al.* 1998).

In 30 years, approximately 30 to 50 percent of primary forest was removed (Robinet *et al.* 1996). The island has a young and increasing human population. A 2000 population estimate was 4,000 inhabitants; and the 2008 population census for Wallis (Uvea) was 9,731 (*www.insee.gov.fr*, accessed March 19, 2011). The increase in human population may lead to more destruction of forest for housing, cultivated fields, and plantations. As of 2000, coconut palms plantations were the island's main source of income (CITES 2000a). As indicated earlier, the lack of nesting sites is believed to be the most significant limiting factor for the species (Robinet *et al.* 2003, pp. 73, 78; BLI 2010, p. 2).

Conservation Status. Various conservation measures are in place for this species. This species is listed as "Endangered" on the 2010 IUCN Red List (BLI 2010f). It was uplisted from Appendix II to Appendix I of CITES in July 2000, due to its small population size, restricted area of distribution, loss of suitable habitat, and the illegal pet trade (CITES 2000b). A recovery plan for the Uvea parakeet was prepared for the period 1997–2002, which included strong local participation in population and habitat monitoring (Robinet in litt. 1997 as cited in Snyder *et al.* 2000). A second recovery plan was initiated in 2003. The species increased in popularity and is celebrated as an island emblem (Robinet and Salas 1997; Primot in litt. 1999 as cited in BLI 2009). Conservation actions, including in situ management (habitat protection and restoration), recovery efforts (providing nest boxes and food), and public education on the protection of Uvea parakeet and its habitat have occurred (Robinet *et al.* 1996), however the success of current conservation efforts is unknown. Increased awareness of the plight of the Uvea parakeet and improvements in law enforcement capability are helping to address illegal trade of the species.

Preventive measures have been taken at the port and airport to prevent introduction of invasive rats and should continue to be reinforced, but there is concern that these rats may be introduced in the future (BLI 2010, p. 3). As of 2007, the island remained rat-free (Verfaille in litt. 2007 as cited in BLI 2010). Introductions of Uvea parakeets to the adjacent island of Lifou (to establish a second population) in 1925 and 1963 failed (Robinet *et al.* 1995 as cited in BLI 2009), possibly because of the presence of ship rats and Norway rats (Robinet in litt. 1997 as cited in Snyder *et al.* 2000). Robinet *et al.* (1998) studied the impact of rats in Uvea and Lifou on the Uvea parakeet and concluded that Lifou is not a suitable place for translocating Uvea parakeet unless active habitat management is carried out to protect it from invasive rats. As a preventative measure in case rats reach the island, they also suggested it would be valuable to implement low-intensity rat control of the Polynesian rat (*R. exulans*) in Uvea immediately before the parakeet breeding season. Lifou may also lack suitable nesting sites (Robinet *et al.* 2003, pp. 73, 78).

A captive-breeding program has been discussed but not begun (BLI 2010f). A translocation program to restock this species into the southern portion of Uvea was cancelled under the new recovery plan (2003) because the population was considered viable and was expected to increase naturally (Barré in litt. 2003; Anon 2004 as cited in BLI 2010f). Measures are being taken to control predators and prevent colonization by rats (BLI 2010f). Current Uvea parakeet numbers appear to be slowly increasing, but any relaxation of conservation efforts or introduction of nonnative rats or other predators could lead to a rapid decline (BLI 2010f). The Société Calédonienne d'Ornithologie (SCO) received funding to test artificial

nests, and BirdLife Suisse (ASPO) is continuing to destroy invasive bees' nests and is placing hives in forested areas to attract bees for removal (Verfaille in litt. 2007 as cited in BLI 2010f).

Even though populations appear to be currently increasing, any reduction in conservation efforts or introduction of invasive species (particularly cavity-nesting bees, the ship rat, and the Norway rat) could lead to rapid declines (Robinet *et al.* 1998; BLI 2010f). Although the Uvea parakeet is affected by other threats, the absence of the ship rat and Norway rat on Uvea is a major factor contributing to its survival.

In our 2009 ANOR, the Uvea parakeet received an LPN of 8. We reevaluated the threats to the Uvea parakeet and determined that a change in the LPN for the species is warranted. The Uvea parakeet does not represent a monotypic genus. Its population is estimated to be approximately 750 individuals, and it is an island endemic in limited locations with restricted and declining habitat. The Uvea parakeet faces threats that are high in magnitude primarily due to nest competition by bees, predation by goshawk, and the lack of the old-growth forest, on which the birds depend for nesting holes. The birds only occur in an area about 20 km^2 (7.7 mi^2) of forest with a total area of potential habitat of approximately 66 km^2 (25.5 mi^2) (BLI 2010f). Because the human population on the island is increasing, there is likely an increase occurring in the magnitude of threats to this species. Management efforts have been put in place to aid in the recovery of the species, however, the threats to the species identified here continue. Based on new information, we find that the threats to this species are occurring now, ongoing, and are imminent. Thus, we have changed the LPN from an 8 to a 2 to reflect imminent threats of high magnitude.

G. Blue-Throated Macaw (*Ara glaucogularis*), LPN = 2

The blue-throated macaw is endemic to forest islands in the seasonally flooded Beni Lowlands (Lanos de Mojos, also known as Lanos de Moxos) of central Bolivia (Jordan and Munn 1993; Yamashita and de Barros 1997; BLI 2010g). The taxonomic status of this species was long disputed, primarily because the species was unknown in the wild to biologists until fairly recently. Previously, it was considered an aberrant form of the blue-and-yellow macaw (*A. ararauna*), but the two species are now known to occur sympatrically without interbreeding (del Hoyo *et al.* 1997).

The species inhabits a mosaic of seasonally inundated savanna, palm groves, forest islands, and humid lowlands. This macaw species is found in areas where palm-fruit food and suitable nesting cavities are available (Herrera *et al.* 2007, pp. 18–24). They particularly like fruit mesocarp of palm trees (Jordan and Munn 1993; Yamashita and de Barros 1997; Bueno 2000; Herrera 2007, p. 20) such as *Attalea phalerata* (motacu palm), *Mauritia flexuosa* (common names: aguaje, it palm, buriti palm, moriche palm), and *Acrocomia aculeata* (common names include: coyoli palm, gru-gru palm, macaw palm, Paraguay palm, acrocome, gru-gru, noix de Coyol, Coyolipalme, amankayo, corojo, corozo, coyol, baboso, tucuma, and totai) (*http://www.ars-grin.gov, http://www.pacsoa.org.au*).

The blue-throated macaw also depends on motacu palms for nesting (BLI 2008d). In 2005, this species was found nesting in an area dominated by the Curupau tree (*Anadenanthera colubrina)* (also known as Vilca, Huilco, Wilco, Cebil, or Angico) (Kyle 2005, p. 7). The species inhabits elevations between 200 and 300 m (656 and 984 ft) (Brace *et al.* 1995; Yamashita and de Barros 1997; BLI 2008c). These macaws are seen most commonly traveling in pairs, and have been seen in flocks of 7 to 9 birds, and on rare occasions may be found in small flocks (Macleod *et al.* 2009, p. 15). One flock of 70 birds was found in 2007 near the Rio Mamoré by the Armonia Association (Waugh 2007a, p. 53). The blue-throated macaw nests between November and March in large tree cavities where one to three young are raised (BLI 2010g).

BLI (2010g) estimates the total wild population to be between 50 and 300 birds and noted the population has some fragmentation. Surveys indicate the population may have slowly increased following dramatic declines in the 1970s and 1980s, but now the population is believed to be decreasing (BLI 2010g). Biologists surveying for this species in 2004 found more birds than in previous surveys by searching specific habitat types (palm groves and forested islands) (Herrera *et al.* 2007). A population viability analysis (PVA) of this species found that it had a low probability of extinction over the next 50 years (Strem 2008). However, its small population size and its low population growth rate makes this species very vulnerable to any threat. The low probability of extinction may be reasonable given that the blue-throated macaw is a long-lived species, and the 50-year simulation timeframe is relatively short for such species. However, Strem found that impacts such as habitat destruction and harvesting had significantly increased the probability of extinction, which reemphasizes the importance of addressing these threats for this species (2008).

The blue-throated macaw was historically at risk from trapping for the national and international bird trade, and some illegal trade may still be occurring. Between the early 1980s and early 1990s, an estimated 1,200 or more wild-caught individuals were exported from Bolivia, and many are now in captivity in the European Union and in North America (World Parrot Trust 2003; BLI 2008b). Although Bolivia outlawed the export of live parrots in 1984 (Brace *et al.* 1995), illegal trade did occur after that. In 1993, investigators reported that an Argentinean bird dealer was offering illegal Bolivian dealers a "high price" for blue-throated macaws (Jordan and Munn 1993, p. 695).

Armonia Association (a nonprofit organization in Bolivia) monitored the wild birds that passed through a pet market in Santa Cruz, Bolivia, from August 2004 to July 2005. Although nearly 7,300 parrots were recorded in trade, the blue-throated macaw was absent in the market during the monitoring period, which may point to the effectiveness of the ongoing conservation programs in Bolivia (BLI 2007), or it may be indicative of the scarcity of blue-throated macaws in the wild. There are a number of blue-throated macaws in captivity, with over 1,000 registered in the North American studbook (Waugh 2007c). Because these birds are not difficult to breed, the supply of captive-bred birds has increased (Waugh 2007a), helping to alleviate pressure on, but not completely eliminating illegal collection of wild birds. However, United Nations Environment Programme—World Conservation Monitoring Center (UNEP–WCMC) trade data indicates that no birds of wild origin of this species have been exported from Bolivia since 1993 (UNEP–WCMC, accessed September 3, 2010). A current internet search indicated that captive-bred specimens of this species sell for between $1,500 and $3,000 in the United States (*www.hoobly.com*, accessed September 13, 2010). One search advertised that this is a "very rare species and there are only 300 left in the wild." The high value of this species could lead to continued illegal trade.

Other threats to the blue-throated macaw include habitat loss, botfly parasites, and competition from other birds, such as other macaws, toucans, and large woodpeckers (Kyle 2005, pp.

6–10; World Parrot Trust 2008; BLI 2010g). An early researcher noted that all known sites of the blue-throated macaw were on private cattle ranches, where local ranchers typically burn the pasture annually (del Hoyo 1997). This type of burning resulted in almost no recruitment of native palm trees, which are vital to the ecological needs of the blue-throated macaw (Yamashita and de Barros 1977). The blue-throated macaw requires suitable nesting cavities for raising their young. The loss of suitable trees has resulted in increased competition from other species for these nesting cavities as well. In fact, recent research found that some parrot species have been using termite mounds as nesting cavities (Sanchez-Martinez and Renton 2009). In Beni, many palms are cut down by the local people for firewood (Brace *et al.* 1995). Although palm groves are more than 500 years old, Yamashita and de Barros (1977) concluded that the palm population structure suggests long-term decline. In 2004–2005, of 13 potential blue-throated macaw nests, researchers observed several of the threats identified above over the course of the survey. At the end of the survey, only two chicks had fledged (Kyle 2005, p. 9).

Conservation Status. This species is listed in Appendix I of CITES (CITES 2010) and is legally protected in Bolivia (Juniper and Parr 1998). Although conservation of this species is occurring, this species remains categorized as "Critically Endangered" on the 2010 IUCN Red List (BLI 2010g). The Eco Bolivia Foundation patrols existing macaw habitat by foot and motorbike, and the Armonia Association monitors the Beni lowlands for additional populations (Snyder *et al.* 2000). Additionally, the Armonia Association is building an awareness campaign aimed at the cattlemen's association to ensure that the protection and conservation of these birds is at a local level (*e.g.,* protection of macaws from trappers and the sensible management of key habitats, such as palm groves and forest islands, on their property) (Snyder *et al.* 2000; Llampa 2007; BLI 2008a).

In October 2008, Armonia Association announced it had purchased a large, 3,555-ha (8,785-ac) reserve for the purpose of establishing a protected area for the blue-throated macaw (BLI 2008d; Worldland Trust 2010, accessed July 16, 2010). The Barba Azul Nature Reserve protects savanna habitat, and 20 blue-throated macaws have been observed to nest here. The organization has also been experimenting with artificial nest boxes; the macaws have been using these, and this promises to be a way to boost breeding success while habitat restoration is under way in the new reserve. Despite these efforts, only between 50 and 300 remain in the wild.

In our 2009 ANOR, the blue-throated macaw received an LPN of 8. After reevaluating the available information, we find that a change in the LPN is warranted for this species. The blue-throated macaw does not represent a monotypic genus. It faces threats that are high in magnitude such as limited and decreasing habitat suitability (nesting cavities), competition for nesting cavities from other species (toucans in particular and other more aggressive macaws), and parasitism by botflies. Wildlife managers in Bolivia are actively protecting the species and searching for additional populations, and the species is now protected in one nature reserve. Although wild birds may no longer be imported for commercial purposes as a result of the species' CITES listing, and it is legally protected in Bolivia, there are only between 50 and 300 of these birds left in the wild, and the population is decreasing rapidly, despite conservation efforts. The threats to the species identified are of high magnitude, ongoing, and imminent. Based on the rapidly declining population, we have changed the LPN from an 8 to a 2 to reflect imminent threats of high magnitude.

H. Helmeted Woodpecker (Dryocopus galeatus), LPN = 8

The helmeted woodpecker is endemic to the southern Atlantic forest region of southeastern Brazil, eastern Paraguay, and northeastern Argentina (BLI 2010h). Its estimated range spans 24,000 km^2 (9,266 mi^2). It is found in tall lowland Atlantic and primary and mature montane forest, and has been recorded in degraded and small forest patches. However, it is usually found near large forest tracts (Chebez 1995b as cited in BLI 2010h; Clay in litt. 2000 as cited in BLI 2010h). Helmeted woodpeckers forage primarily in the middle story of the forest interior (Brooks *et al.* 1993 cited in BLI 2010h; Clay in litt. 2000 as cited in BLI 2010h).

Field work on the helmeted woodpecker indicated that the species is less rare than once thought (BLI 2010h), although its range is restricted (Mattsson *et al.* 2008) by its habitat requirements. Numerous sightings since the mid-1980s include one pair in the Brazilian State of Santa Catarina in 1998, where the species had not been seen since 1946 (del Hoyo *et al.* 2002).

The most recent population estimate is between 10,000 and 19,999 individuals and decreasing (BLI 2010h); however it is unclear when the last census of this species was conducted. Because the helmeted woodpecker is difficult to locate except when vocalizing and it is silent most of the year, its numbers may be underestimated. Between 1997 and 2006, it was observed in the San Rafael National Park, Paraguay, although infrequently (Esquivel *et al.* 2007, p. 310). The overall conservation status of the helmeted woodpecker's population is unclear; however, it is not common anywhere it is known to exist (BLI 2010h).

The greatest threat to the helmeted woodpecker is widespread deforestation (Cockle 2008 as cited in BLI 2009; BLI 2010h). Other threats may be competition from other species, particularly more competitive woodpeckers, which may use fragmented and "edge" habitat more effectively (BLI 2010h).

The Atlantic Forest, habitat in which the helmeted woodpecker resides, extends along the Atlantic coast of Brazil from Rio Grande do Norte in the north to Rio Grande do Sul in the south, and inland as far as Paraguay and Misiones Province of northeastern Argentina (Morellato and Haddad 2000, pp. 786–787; Conservation International 2007a, p. 1; Höfling 2007, p. 1). The Atlantic Forest extends up to 600 km (373 mi) west of the Atlantic Ocean. It consists of tropical and subtropical moist forests, tropical dry forests, and mangrove forests at mostly low-to-medium elevations less than 1,000 m (3,281 ft); however, altitude can reach as high as 2,000 m (6,562 ft) above sea level. It is likely that only between 7 and 10 percent of this habitat remains intact (Morellato and Haddad 2000, p. 786; Oliveira-Filho and Fontes 2000, p. 794). Between 92 to 95 percent of the area historically covered by tropical forests within the Atlantic Forest biome has been converted or severely degraded as a result of various human activities (Morellato and Haddad 2000, p. 786; Myers *et al.* 2000, pp. 853–854; Saatchi *et al.* 2001, p. 868; Butler 2007, p. 2; Conservation International 2007a, p. 1; Höfling 2007, p. 1; The Nature Conservancy (TNC) 2007, p. 1; World Wildlife Fund (WWF) 2007, pp. 2–41). In addition to the overall loss and degradation of native habitats within this biome, the remaining tracts of habitat are severely fragmented. The current rate of habitat decline is unknown.

A significant portion of Atlantic Forest habitat has been, and continues to be, lost and degraded by various ongoing human activities, including logging, establishment and expansion of plantations and livestock pastures,

urban and industrial developments (including many new hydroelectric dams), slash-and-burn clearing, and intentional and accidental ignition of fires (Critical Ecosystem Partnership Fund (CEPF) 2001, pp. 9–15). Even with the passage of a national forest policy and in light of many other legal protections in Brazil, the rate of habitat loss throughout the Atlantic Forest biome has increased since the mid-1990s (Hodge *et al.* 1997, p. 1; CEPF 2001, p. 10; Rocha *et al.* 2005, p. 270). Native habitats at many of the remaining sites where the helmeted woodpecker currently exists may be lost over the next several years (Rocha *et al.* 2005, p. 263). Furthermore, the helmeted woodpecker's population is already highly fragmented, and its population believed to be declining (BLI 2010h). Any further loss or degradation of its remaining suitable habitat represents a significant threat to the species. Further studies are needed to clarify this species' distribution and status.

In Paraguay, some viable, although fragmented habitat for this species remains in San Rafael National Park (Esquivel *et al.* 2007, pp. 301–302). The park has undergone logging and clearance, and is extremely isolated from other mature forested areas that might be suitable for the helmeted woodpecker (Esquivel *et al.* 2007, p. 302).

Conservation Status. The helmeted woodpecker is listed as "Vulnerable" by the IUCN (IUCN 2010). It is not listed in any appendices of CITES (CITES 2010). In one of the few remaining large fragments of Atlantic Forest in Paraguay, it is considered to be near threatened (Esquivel *et al.* 2007, p. 301). It is protected by Brazilian law, and populations occur in numerous protected areas throughout its range (Lowen *et al.* 1996 as cited in BLI 2009; Chebez *et al.* 1998 as cited in BLI 2009).

In our 2009 ANOR, the helmeted woodpecker received an LPN of 8. After reevaluating the available information, we find that a change in the LPN for the helmeted woodpecker is not warranted. The helmeted woodpecker does not represent a monotypic genus. The magnitude of threat to the species is moderate because the species' range (24,000 km^2 (9,266 mi^2)) and population (between 10,000 and 19,999 individuals) is believed to be much larger than previously thought. The threats are imminent because the forest habitat upon which the species depends is constantly being altered and destroyed by humans. We will continue to monitor the status of this species, however, a priority rank of 8 remains valid for this species.

I. Okinawa Woodpecker (Dendrocopos noguchii), LPN = 2

The Okinawa woodpecker (also known as Pryer's woodpecker) (*Dendrocopos noguchii,* synonym *Sapheopipo noguchii*) is endemic to Okinawa Island, Japan. ITIS recognizes the Okinawa woodpecker as belonging to the monotypic genus *Sapheopipo* (ITIS 2010i, accessed September 7, 2010). Winkler *et al.* (2005, pp. 103–109) analyzed partial nucleotide sequences of mitochondrial genes and concluded that this woodpecker belongs in the genus *Dendrocopos.* IUCN and BLI both recognize this species as *Dendrocopos noguchii.* Japan references it as *Sapheopipo noguchii* (*http://www.env.go.jp/en/nature/biodiv/reddata.html,* accessed September 30, 2010). For the purpose of this finding and absent peer-reviewed information to the contrary, we recognize it as *Dendrocopos noguchii.* We welcome comments on the classification of this species.

Okinawa is the largest of the Ryukyu Islands, a small island chain located between Japan and Taiwan (Brazil 1991; Stattersfield *et al.* 1998; Winkler *et al.* 2005). Okinawa is approximately 646 km (401 mi) from Taiwan and 1,539 km (956 mi) from Tokyo, Japan. The island is 108 km (67 miles) in length and its width varies between 3 and 27 km (2 to 17 mi). Okinawa's highest point is Mt. Yonaha at 455 m (1,494 ft). The Okinawa woodpecker is confined to forested areas in the northern part of the island, generally in the Yambaru (also known as Yanbaru) area, particularly in the Yonaha-dake Prefecture Protection Area. Yambaru refers to the mountainous areas of Kunigami County in northern Okinawa.

This species of woodpecker prefers undisturbed, mature, subtropical evergreen broadleaf forests, with tall trees greater than 20 cm (7.9 in) in diameter (Short 1982; del Hoyo 2002). Trees of this size are generally more than 30 years old and as of 1991 were confined to hilltops (Brazil 1991). The species' main breeding areas are located along the mountain ridges between Mt. Nishime-take and Mt. Iyu-take, although it has been observed nesting in well-forested coastal areas (Research Center, Wild Bird Society of Japan 1993, as cited in BLI 2001). The majority of the broadleaf trees in the Yanbaru area are oak and chinquapin (*Distylium racemosum* and *Schefflera octophylla*) (Ito *et al.* 2000, p. 305). Areas with conifers (*Coniferae,* cone-bearing trees such as pines and firs) appear to be avoided (Short 1973; Winkler *et al.* 1995). The Okinawa woodpecker was also observed just south of the Mt. Tanodake in an area of entirely secondary forest that was too immature for use by woodpeckers to excavate nest cavities, but these may have involved birds displaced by the clearing of mature forests (Brazil 1991).

The Okinawa woodpecker feeds on large arthropods, notably beetle larvae, spiders, moths, and centipedes, fruit, berries, seeds, acorns, and other nuts (Short 1982; del Hoyo 2002; Winkler *et al.* 2005). They forage in old-growth forests with large, often moribund trees, accumulated fallen trees, rotting stumps, debris, and undergrowth (Short 1973; Brazil 1991). This species has been observed to nest in holes excavated in large, old growth trees such as *Castanopsis cuspidate* (Japanese chinquapin) and *Machilus thunbergii* (Tabu-no-ki tree) (Ogasawara and Ikehara 1977; Short 1982; del Hoyo 2002). Both of these tree species grow to approximately 20 meters (66 ft) in height. It is thought that *Castanopsis* is the preferred tree species for nesting because it tends to be hollow with hard wood, so that the nesting cavities are more secure (Kiyosu 1965 in BLI 2001, p. 1880). The number of fledglings per season range between one and three birds (BLI 2001, p. 1880).

This species is considered one of the world's most rare extant woodpecker species (Winkler *et al.* 2005). During the 1930s, the Okinawa woodpecker was considered nearly extinct. In the early 1970s, it was observed to be scattered among small colonies and isolated pairs (Short 1973). By the early 1990s, the breeding population was estimated to be about 75 birds (BLI 2008a). In 2008, its projected 10-year decline was between 30 to 49 percent (BLI 2008b). The current population estimate ranges between 146 and 584 individuals (BLI 2010i).

Deforestation and the fragmented nature of its habitat due to logging, dam construction, road-building, agricultural development, and golf course construction are cited to be the main causes of its small population size (BLI 2010i). Between 1979 and 1991, 2,443 ha (6,037 ac) of forest were destroyed in the Yanbaru area (Department of Agriculture, Okinawa Prefectural Government 1992, in Ito *et al.* 2000, p. 311). As of 2001, there was only 40 km^2 (15 mi^2) of suitable habitat available for this species (BLI 2001, p. 1882).

The limited range and tiny population make this species vulnerable to extinction from disease and natural disasters such as typhoons (BLI 2008). Feral dogs and cats, the introduced Javan mongoose (*Herpestes javanicus*), and weasel (*Mustela itatsi*) are possible

predators of the woodpecker. Additionally, feral pigs damage potential ground-foraging sites (BLI 2003).

Conservation Status. Various protections and conservation measures are in place for this species. The species is categorized on the IUCN Red List as "Critically Endangered" because it consists of a small, declining population estimated to be between 150 and 584 individuals (BLI 2010i). The species is legally protected in Japan and it occurs in small protected areas on Mt. Ibu and Mt. Nishime (BLI 2008a). The Yambaru, a forested area in the Okinawa Prefecture, was designated as a national park in 1996 (BLI 2010i). Additionally, conservation organizations have purchased sites where the woodpecker occurred in order to establish private wildlife preserves (del Hoyo *et al.* 2002; BLI 2008). It is not listed in any appendices of CITES.

In our 2009 ANOR, the Okinawa woodpecker received an LPN of 8. After reevaluating the available information, we find that a change in the LPN for the Okinawa woodpecker is warranted. The Okinawa woodpecker does not represent a monotypic genus. It is considered one of the world's most rare extant woodpecker species and faces threats that are high in magnitude even though the species is legally protected in Japan. The best available information does not indicate that this species is being actively managed. The threats to the species are of high magnitude due to the scarcity of old-growth habitat (only 40 km^2 (15 mi^2)) upon which the species is dependent. Its very small population is believed to be continually declining; and species with fragmented habitat in combination with small population sizes may be at greater risk of extinction due to synergistic effects (Davies *et al.* 2004, pp. 265–271). Although it exists in areas with protected status, the best available information indicates that the threats to the species are ongoing and imminent. Because its projected 10-year decline was between 30 to 49 percent in 2008, (BLI 2008b), and because the current population estimate ranges between 146 and 584 individuals, we have changed the LPN for this species from an 8 to a 2 to reflect imminent threats of high magnitude.

J. Yellow-Browed Toucanet (*Aulacorhynchus huallagae*), LPN = 2

There is very little information available regarding the yellow-browed toucanet. This species is endemic to Peru and is known from only two localities in north-central Peru—La Libertad, where it is uncommon, and Rio Abiseo National Park, San Martin, where it is thought to be very rare (Wege and Long 1995; del Hoyo *et al.* 2002; BLI 2009). There was also a report of yellow-browed toucanets seen in the Leymebamba area (Mark in litt. 2003, as cited in BLI 2010j) of Peru, although there are no available photos of this species. The current population size is believed to be between 1,000 and 2,499 with a decreasing population trend (BLI 2010j).

The yellow-browed toucanet's estimated range is 450 km^2 (174 mi^2) (BLI 2010j). The species inhabits a narrow altitudinal range between 2,125 and 2,510 m (6,970 and 8,232 ft). It prefers the canopy of humid, epiphyte-laden montane cloud forests, particularly areas that support *Clusia* trees (sometimes known as autograph trees) (Fjeldså and Krabbe 1990; Schulenberg and Parker 1997, pp. 717–718; del Hoyo *et al.* 2002). Within the Clusia genus, there are about 20 species. The yellow-browed toucanet does not appear to occupy all potentially suitable forest available within its range (Schulenberg and Parker 1997). Its restricted range remains unexplained.

The narrow distributional band in which yellow-browed toucanets are found may be related to the occurrence of other avian species that may out-compete the yellow-browed toucanet. Recent information indicates that both of the suggested competitors have wider altitudinal ranges that completely encompass that of the yellow-browed toucanet (Collar *et al.* 1992; Hornbuckle in litt. 1999, as cited in BLI 2009; Clements and Shany 2001, as cited in BLI 2008; del Hoyo *et al.* 2002). The larger grey-breasted mountain toucan (*Andigena hypoglauca*) occurs above 2,300 m (7,544 ft), and the emerald toucanet (*Aulacorhynchus prasinus*) occurs below 2,100 m (6,888 ft) (Schulenberg and Parker 1997). The yellow-browed toucanet may occur to the north and south of its known range, but the area between the Cordillera de Colán, Amazonas, and the Carpish region, Huánuco, is inaccessible, and its existence in other areas has not been confirmed.

Distinguishing features of the yellow-browed toucanet include a bright yellow vent or cloaca, a blackish bill, and a generally green face, (Schulenberg and Parker 1997, p. 719). Its call has been described as a series of 20 to 30 frog-like "krik" notes, delivered at a rate of slightly more than one note per second (recordings housed in Cornell Laboratory of Ornithology, Schulenberg and Parker 1997, p. 717).

Human-related threats to the species include deforestation, mining, and secondary impacts associated with those activities. Deforestation has been widespread in this region, but has largely occurred at lower elevations than habitat occupied by the yellow-browed toucanet (Barnes *et al.* 1995; BLI 2009). However, coca growers have taken over forests within its altitudinal range, probably resulting in some reductions in this species' range and population (BLI 2009; Plenge in litt. 1993, as cited in BLI 2009). Most of the area in 1997 was described as being only lightly settled by humans (Schulenberg and Parker 1997). However, the human population surrounding the Rio Abiseo Park was steadily increasing during the 15 years prior to 2002, primarily because of the advent of mining operations in the area (Obenson 2002). Pressures in and around the park exist due to mining and those secondary impacts associated with mining (Vehkamäki and Bäckman, 2006, pp. 1–2).

Conservation Status. Protections for this species are minimal. The yellow-browed toucanet is listed as "Endangered" on the IUCN Red List due to its very small range and population records from only two locations (BLI 2010j). It occurs in at least one protected area, the Rio Abiseo National Park, a World Heritage Site which was established to protect fauna (UNEP–WCMC 2008, p. 1). It is not listed in any appendices of CITES (CITES 2010).

In our 2009 ANOR, the yellow-browed toucanet received an LPN of 11. After reevaluating the available information, we find that a change in the LPN for the yellow-browed toucanet is warranted. The yellow-browed toucanet does not represent a monotypic genus. Although the species is believed to exist in the protected Rio Abiseo National Park, there have been no documented sightings since 2003. As of 2010, BLI reported that coca-growers have taken over forest within its altitudinal range (BLI 2010j). The magnitude of threats to the species is high given that the species has a small range and rapidly declining population; and may be in competition for habitat with more competitive avian species. Further, pressures in and around the park exist due to mining and secondary impacts associated with mining. Additionally, the only records of this species are from two small locations and they have not been verified in several years. Based on these factors, we find that the threats are imminent and of high magnitude. Thus, we have reassessed and changed the LPN for this species from an 11 to a 2 to reflect imminent threats of high magnitude.

K. Brasilia Tapaculo (*Scytalopus novacapitalis*), LPN = 8

The Brasilia tapaculo is a small bird endemic to Brazil, specifically in the central to southern-central region of the country. It is found in swampy gallery forests, which are forests that grow along streams and rivers in regions otherwise devoid of trees, within disturbed areas of thick streamside vegetation and dense secondary growth of *Pteridium aquilinum* (bracken fern). The Brasilia tapaculo is also strongly associated with two other plant species: *Blechnum* ferns and *Euterpe* palms (del Hoyo *et al.* 2003, in BLI 2010k).

The species has been documented in Goiás and Serra da Canastra National Park, Minas Gerais (Negret and Cavalcanti 1985, as cited in Collar *et al.* 1992; Collar *et al.* 1992; BLI 2008). In Serra do Cipó and Caraça, which are in the hills and plateaus of central Brazil, this species was located at low densities (Collar *et al.* 1992). In and around the Serra da Canastra National Park, this species was reported to be very common (Silveira 1998, p. 3). Again in the Minas Gerais area, the species was located at low densities at Serra Negra (on the upper Dourados River) and the headwaters of the São Francisco river, in the early 1990s (Collar *et al.* 1992).

Although the species was once considered rare (Sick and Texeira 1979, as cited in Collar *et al.* 1992), it has been found in reasonable numbers in areas of Brasilia noted above (D. M. Teixeira in litt. 1987, as cited in Collar *et al.* 1992). There is no current population estimate other than that the population is decreasing (BLI 2010j). However, in 2008 the population was estimated at approximately 10,000 birds, with a decreasing population trend (BLI 2008).

The species occupies a limited area within a range of 109,000 km² (42,085 mi²) and is likely losing habitat (BLI 2010j). Its distribution now appears larger than initially estimated, and the swampy gallery forests where it is found are not conducive to forest clearing, leaving the species' habitat less vulnerable to this threat than previously thought. The majority of locations where this species is found are within established protected nature reserves. Both fire risk and drainage impacts are reduced in these areas (Antas 2007). However, dam building for irrigation on rivers that normally flood gallery forests was identified as an emerging threat (Teixeira *in litt.* 1987, as cited in Collar *et al.* 1992; Antas 2007). Further, annual burning of adjacent grasslands limits the extent and availability of suitable habitat, as does wetland drainage and the sequestration of water for irrigation (Machado *et al.* 1998, as cited in BLI 2008).

Conservation Status. The IUCN categorizes the Brasilia tapaculo as "Near Threatened" (BLI 2010j). It is not listed in any appendices of CITES (CITES 2010). The Brasilia tapaculo is protected by Brazilian law (Bernardes *et al.* 1990, as cited in Collar *et al.* 1992), and some of the areas where this species occurs are protected. Three Important Bird Areas (IBAs) have been identified for this species: Parque Nacional de Brasília, Cerrados ao Sul de Brasília, and the Serra da Canastra National Park. A site is recognized as an IBA when it meets criteria " * * * based on the occurrence of key bird species that are vulnerable to global extinction or whose populations are otherwise irreplaceable." These key sites for conservation are small enough to be conserved in their entirety, but large enough to support self-sustaining populations of the key bird species. IBAs are a way to identify conservation priorities (BLI 2010).

In our 2009 ANOR, the Brasilia tapaculo received an LPN of 8. After reevaluating the available information, we find that a change in the LPN for the Brasilia tapaculo is not warranted. The Brasilia tapaculo does not represent a monotypic genus. The magnitude of threat to the species is moderate because in 2008, their population was estimated at approximately 10,000 birds; at least two of the populations are in protected habitat; and their preferred habitat is swampy and difficult to clear. Threats are imminent, because habitat is still being drained or dammed for agricultural irrigation, and grassland burning limits the extent of suitable habitat. Therefore, a priority rank of 8 remains valid for this species.

L. Codfish Island Fernbird (*Bowdleria punctata wilsoni*), LPN = 12

The Codfish Island fernbird is found only on Codfish Island, New Zealand. Codfish Island is a nature reserve of 1,396 ha (3,448 ac) located 3 km (1.8 mi) off the northwest coast of Stewart Island (IUCN 1979; McClelland 2007). There are five subspecies of *Bowdleria punctata,* each restricted to a single island and its outlying islets. The North and South Islands' subspecies are widespread and locally common. The Stewart Island and the Snares' subspecies are moderately abundant (Heather and Robertson 1997). In 1966, the status of the Codfish Island subspecies (*B. punctata wilsoni*) was considered relatively safe (Blackburn 1967), but estimates dating from 1975 indicated a gradually declining population to approximately 100 individuals (Bell 1975 as cited in IUCN 1979). McClelland (2007) indicated that in the past, the Codfish Island fernbird was restricted to low shrubland in the higher areas of Codfish Island. Few individuals were seen around the coastal shrubland; and a significant predator was the Polynesian rat (*Rattus exulans*) (McClelland 2007). In 1979, the IUCN (1979) concluded that the absence of the fernbird from formerly occupied areas of Codfish Island evidenced a decline.

Although there is no accurate estimate of the current size of the Codfish Island fernbird population (estimates are based on incidental encounter rates in the various habitat types on the island), the population as of 2007 was believed to be several hundred. McClelland (2007) concluded that is it likely that the population peaked and is stable.

Fernbirds are sedentary and are not strong fliers. They are secretive and reluctant to leave cover. They feed in low vegetation or on the ground, eating mainly caterpillars, spiders, grubs, beetles, flies, and moths (Heather and Robertson 1997). Codfish Island's native vegetation has been modified by the introduced Australian brush-tailed possum (*Trichosurus vulpecula*). Codfish Island fernbird populations have also been reduced due to predation by weka (*Gallirallus australis scotti*) and Polynesian rats (Merton 1974, pers. comm., as cited in IUCN 1979; McClelland 2002, pp. 1–9).

IUCN and BLI only recognize the species *Bowdleria punctata;* it is not addressed at subspecies levels. Neither the species nor the subspecies is addressed by ITIS (*www.itis.gov/,* accessed September 9, 2010). The New Zealand Department of Conservation (NZDOC) recognizes the Codfish Island fernbird as a valid subspecies, however. Because New Zealand recognizes the subspecies, and absent peer-reviewed information to the contrary, we currently consider *Bowdleria punctata wilsoni* to be a valid subspecies within a multi-species genus.

Conservation Status. Varying levels of conservation status and protections are in place for this species. IUCN categorizes *Bowdleria punctata* as "Least concern" (BLI 2010k). The 2008 New Zealand Threat Classification System manual indicates that the two "at risk" categories, "range restricted" and "sparse," have been replaced by a single category called "naturally uncommon" (p. 10). The NZDOC categorizes this subspecies as "naturally uncommon." It is not listed in any appendices of CITES (CITES 2010).

Several specific conservation measures have been undertaken by the

NZ DOC with respect to *Bowdleria punctata wilsoni* as well as *Bowdleria punctata;* however the current population size of the subspecies is unclear. The weka and possum were eradicated from Codfish Island in 1984 and 1987, respectively (McClelland 2007). The Polynesian rat was believed to have been eradicated in 1997 (Conservation News 2002; McClelland 2007). The Codfish Island fernbird population was reported to have rebounded strongly with the removal of invasive predator species. Additionally, it successfully colonized the forest habitat, which greatly expanded its range. However, because there is always the chance that rats could reestablish a population on the island, the island is being monitored for rats.

To safeguard the Codfish Island fernbird, the NZ DOC established a second population on Putauhinu Island, a small 144-ha (356-ac), privately owned island located approximately 40 km (25 mi) south of Codfish Island. The Putauhinu population established rapidly, and McClelland (2007) reported that it is also believed to be stable. While there are no accurate data on the population size or trends on Putauhinu, as of 2007, the numbers were estimated to be 200 to 300 birds spread over the island (McClelland 2007). Even with a second population, the Codfish Island fernbird still remains vulnerable to naturally occurring storm events due to its restricted range and small population size.

In our 2009 ANOR, the Codfish Island fernbird received an LPN of 12. After reevaluating the available information, we find that a change in the LPN for this subspecies is not warranted. The information available indicates that the subspecies faces threats that are low to moderate in magnitude because: (1) It exists on an island that is a nature reserve and (2) the removal of invasive predator species and the establishment of a second population have allowed for a rebound in the subspecies' population. Although the actual population numbers for this subspecies are unknown (possibly around 500 individuals), threats are nonimminent because the conservation measures to prevent the invasion of predatory invasive species indicate that they have been successful; the subspecies is being actively managed. Therefore, a priority rank of 12 remains valid for this subspecies. However, we will continue to monitor the status of this subspecies.

M. Ghizo White-Eye (*Zosterops luteirostris*), LPN = 2

The Ghizo white-eye (also known as the splendid white-eye) is endemic to the island of Ghizo. Ghizo is a very densely populated island in the Solomon Islands in the South Pacific ocean, east of Papua New Guinea (BLI 2010m). The Ghizo white-eye is described as a "warbler-like" bird. The island of Ghizo is 11 km long and 5 km wide (7 by 3 mi), and the human population is estimated to be approximately 6,670 as of 2005 (*http://www.adb.org,* accessed September 9, 2010.)

This species was characterized as being locally common in the 1990s in the remaining tall or old-growth forest, which is very fragmented and is now less than 1 km^2 (0.39 mi^2). It has been reported to be less common in scrub close to large trees and in plantations (Buckingham *et al.* 1995 and Gibbs 1996, as cited in BLI 2008). It is unclear whether these remaining habitats can support sustainable breeding populations (Buckingham *et al.* 1995, as cited in BLI 2008).

The most recent population estimate for this species is 250 to 999 birds (BLI 2010m). Biologists have recommended that systematic surveys be conducted for this species to verify its conservation status (Sherley 2001). While there are no data on population trends, the species is very likely declining due to habitat loss and degradation (BLI 2010m).

The very tall old-growth forest on Ghizo is still under threat from clearance for local use as timber, firewood, and gardens, as are the areas of other secondary growth, which are suboptimal habitats for this species. The species is also under considerable threat from deforestation for agricultural land (BLI 2008).

Conservation Status. Few, if any, protections are in place for this species. The IUCN Red List classifies this species as "Endangered," because of its very small population that is considered to be declining due to habitat loss (BLI 2010m). It is not listed in any appendices of CITES (CITES 2010).

In our 2009 ANOR, the Ghizo white-eye received an LPN of 8. After reevaluating the available information, we find that a change in the LPN for this species is warranted. The Ghizo white-eye does not represent a monotypic genus. It faces threats that are high in magnitude due to declining suitable habitat; its range is estimated to be less than 35 km^2 (13.5 mi^2); of which less than 1 km^2 (0.39 mi^2) is old growth forest. The best available information indicates that forest clearing is proceeding at a pace that is rapidly denuding the habitat; secondary growth is being converted for agricultural purposes. Further, the human population on the small island is increasing, which is likely contributing to the reduction in old-growth forest for local uses such as gardens and timber. Additionally, the last estimate of the Ghizo white-eye population was believed to be between 250 and 999 individuals, but its population trend is believed to be declining. These threats to the species are ongoing, of high magnitude, and imminent. Thus, based on the best available scientific and commercial information, we have changed the LPN from an 8 to a 2.

N. Black-Backed Tanager (*Tangara peruviana*), LPN = 8

The black-backed tanager is endemic to the coastal Atlantic forest region of southeastern Brazil. The species has been documented in Rio de Janeiro, Sao Paulo, Parana, Santa Catarina, Rio Grande do Sul, and Espirito Santo (Argel-de-Oliveira in litt. 2000, as cited in BLI 2008; BLI 2010n). The species is generally restricted to coastal sand-plain forest and restinga, but has also been located in secondary forests (BLI 2008). Restinga is a Brazilian term that describes white sand forest habitat consisting of a patchwork of vegetation types, such as beach vegetation; open shrubby vegetation; herbaceous, shrubby coastal sand dune habitat; and dry and swamp forests distributed over coastal plains from northeastern to southeastern Brazil (Rocha *et al.* 2005, p. 263; McGinley 2007, pp. 1–2).

The Atlantic Forest, on which this species depends, extends up to 600 km (373 mi) west of the Atlantic Ocean. It consists of tropical and subtropical moist forests, tropical dry forests, and mangrove forests at mostly low-to-medium elevations less than 1,000 m (3,281 ft); however, altitude can reach as high as 2,000 m (6,562 ft) above sea level. Between 7 and 10 percent of this habitat remains intact (Morellato and Haddad 2000, p. 786; Oliveira-Filho and Fontes 2000, p. 794). Based on a number of other estimates, 92 to 95 percent of the area historically covered by tropical forests within the Atlantic Forest biome has been converted or severely degraded as a result of various human activities (Morellato and Haddad 2000, p. 786; Myers *et al.* 2000, pp. 853–854; Saatchi *et al.* 2001, p. 868; Butler 2007, p. 2; Conservation International 2007a, p. 1; Höfling 2007, p. 1; TNC 2007, p. 1; WWF 2007, pp. 2–41). In addition to the overall loss and degradation of habitat, the remaining tracts of habitat are severely fragmented.

This species' physical characteristics include an underbody color of blue-turquoise and a pale red-brown vent or cloaca. The male has a chestnut colored head and black back. The female is

duller and greener. It has a complex distribution with seasonal fluctuations in response to the ripening of areoira *Schinus* fruit, at least in Rio de Janeiro and Sao Paulo (BLI 2010n). It has been observed visiting gardens and orchards of houses close to forested areas. Its diet consists primarily of fruit, and to a smaller extent, insects (Moraes and Krul 1997).

The black-backed tanager is generally not considered rare within suitable habitat (BLI 2010n). This species is more common in Sao Paulo during the winter, and records from Espirito Santo are only from the winter season. Clarification of the species' seasonal movements would provide an improved understanding of the species' population status and distribution, but currently populations appear small and fragmented and are declining rapidly; likely in response to extensive habitat loss (BLI 2010n). Population estimates range from 2,500 to 10,000 individuals (BLI 2010n).

The primary threat impacting this species is the rapid and widespread loss of habitat for beachfront development. A minor threat may be that it occasionally appears in the illegal bird trade (BLI 2010n). The remaining tracts of suitable habitat in Rio de Janeiro and São Paulo are threatened by ongoing development of coastal areas, primarily for tourism enterprises (*e.g.,* large hotel complexes, beachside housing) and associated infrastructure support (del Hoyo 2003, p. 616; WWF 2007, pp. 7 and 36–37). These activities have drastically reduced the species' abundance and extent of its occupied range. These activities are currently a risk to the species' continued existence because populations are being limited to highly fragmented patches of habitat (BLI 2010n). Although this species seems to tolerate some environmental degradation if there are well preserved stretches in its territory in which the birds can seek shelter, we expect the degree of these threats will continue and likely increase within the foreseeable future.

Because this species inhabits coastal areas, sea level rise may also affect this species (Alfredini *et al.* 2008, pp. 377–379). In Santos Bay on the coast, sea level rise scenarios were conducted based on predictions of increases between 0.5 and 1.5 m (1.6 and 4.9 ft) by the year 2100 (Alfredini *et al.* 2008, pp. 378). Even small increases in sea level could cause flooding, cause erosion, and change salt marsh zones (Alfredini *et al.* 2008, pp. 377–379) within this species' habitat. As sea level rises, habitat will be less available for this species, compounded by an increased demand by humans to utilize land for housing. The black-backed tanager may attempt to move inland in search of new suitable habitat as its current habitat disappears, however, there may not be suitable habitat remaining for the species. Although Brazil has several laws requiring resource protection for species such as the black-backed tanager, its habitat is under pressure from the intense development that occurs in coastal areas, particularly south of Rio de Janeiro. Threats to the black-backed tanager's remaining habitat are ongoing due to the challenges that Brazil faces to balance its competing development and environmental priorities.

Conservation Status. The species is considered "Vulnerable" by the IUCN (BLI 2010n). The black-backed tanager is not listed in any appendices of CITES (CITES 2010). Portions of the tanager's range are in six protected areas, although the protections are not always effective (BLI 2010n).

In our 2009 ANOR, the black-backed tanager received an LPN of 8. After reevaluating the available information, we find that a change in the LPN for this species is not warranted at this time. The black-backed tanager does not represent a monotypic genus. Threats (primarily habitat loss) to the species are moderate in magnitude due to the species' fairly large range, population size, and apparent flexibility in diet and habitat suitability. Threats are however, imminent because the species is at risk by ongoing and widespread loss of habitat due to beachfront and related development. Therefore, a priority rank of 8 remains valid for this species.

O. Lord Howe Pied Currawong (*Strepera graculina crissalis*), LPN = 6

The Lord Howe pied currawong is a subspecies separate from the five mainland pied currawongs (*Strepera graculina* spp.). In 2004, it was suggested that its taxonomy be reviewed to determine if it warrants recognition as a distinct species (McAllan *et al.* 2004). ITIS recognizes the species as *S. graculina* (ITIS 2010, accessed September 13, 2010). Because Australia recognizes the subspecies, and absent peer-reviewed information to the contrary, we consider *S. graculina crissalis* to be a valid subspecies within a multi-species genus.

This subspecies is endemic to Lord Howe Island, New South Wales, Australia. Lord Howe Island is 600 km (373 mi) northeast of Sydney, Australia. This is also the distance to the subspecies' closest relative, the mainland Pied Currawong (*S. graculina*). The Lord Howe pied currawong is limited to a 12-km^2 (4.6 mi^2) area on the 20-km^2 (7.7-mi^2) island (Hutton 1991; Garnett and Crowley 2000). It has been recorded to a limited extent on small nearby islets of the Admiralty group (Garnett and Crowley 2000; New South Wales Department of Environment & Climate Change (NSW DECC) 2010). Lord Howe Island is unique among inhabited Pacific Islands in that less than 10 percent of the island has been cleared (WWF 2001) and less than 24 percent has been disturbed (NSW Department of Environment and Conservation (DEC) 2007a). In 1982, the island was added to the World Heritage List (NSW Department of the Environment and Water Resources 2007).

The Lord Howe pied currawong breeds in rainforests and palm forests, particularly along streams. Its territories include sections of streams or gullies that are lined by tall timber (Garnett and Crowley 2000). The highest densities of Lord Howe pied currawong nests have been located on the slopes of Mount Gower and in the Erskine Valley, with smaller numbers on the lower land to the north (Knight 1987, as cited in Garnett and Crowley 2000). The nests are typically situated high in trees and are made in a cup shape with sticks and lined with grass and palm thatch (NSW DECC 2005). As of 2001, most of Lord Howe Island was still forested, and the removal of feral animals resulted in the recovery of the forest understory (WWF 2001).

The Lord Howe pied currawong is omnivorous and eats a wide variety of food, including native fruits and seeds (Hutton 1991). It is the only remaining native island vertebrate predator (NSW DECC 2010). It has been recorded eating seabird chicks, poultry, and chicks of the Lord Howe woodhen (*Tricholimnas sylvestris*) and white tern (*Gygis alba*). It also feeds on both live and dead rats (Hutton 1991). Food brought to Lord Howe pied currawong nestlings was observed to be, in decreasing order: Invertebrates, fruits, reptiles, and nestlings of other bird species (Lord Howe Island Board (LHIB) 2006).

In the 2000 Action Plan for Australian Birds (Garnett and Crowley 2000), the Lord Howe pied currawong population was estimated at approximately 80 mature individuals. In 2007, the Foundation for National Parks & Wildlife (FNPW 2007) estimated the breeding population of the Lord Howe pied currawong was 80 to 100 pairs, with a nesting territory in the tall forest areas of about 5 ha (12 ac) per pair. The population size is limited by the amount of available habitat and the lack of food during the winter (FNPW 2007). The

most recent population estimate is 100 to 200 individuals (from surveys in 2005–2006) (NSW DECC 2010, p. 3).

The main threat identified for the Lord Howe pied currawong is habitat clearing and modification. Other threats include non-target poisoning, and effects associated with extremely small population sizes (NSW DECC 2010). A lesser threat to the Lord Howe pied currawong is human interaction with the species. Prior to the 1970s, locals would shoot this currawong because it preys on nestling birds (Hutton 1991). The Lord Howe pied currawong remains unpopular with some residents, likely because of its predatory nature on nestlings. It is unclear what effect this localized killing has on the overall population size and distribution of the species (Garnett and Crowley 2000). Also, because the Lord Howe pied currawong often preys on ship (black) rats, it may be subject to nontarget poisoning during rat-baiting programs (DEC 2007b). Close monitoring of the population is needed because this small, endemic population is highly susceptible to catastrophic events, such as disease or introduction of a new predator (Garnett and Crowley 2000).

Conservation Status. Various levels of conservation and protections exist for this species. The Lord Howe Island Biodiversity Management Plan was finalized in 2007, and is the formal National and NSW Recovery Plan for threatened species and communities of the Lord Howe Island Group (DEC 2007a). The NSW Threatened Species Conservation Act of 1995 lists the Lord Howe pied currawong as "Vulnerable" because it has a limited range, only occurring on Lord Howe Island (NSW DECC 2010). It also is listed as vulnerable under the Australian Commonwealth Environment Protection and Biodiversity Conservation Act of 1999. These laws provide a legislative framework to protect and encourage the recovery of vulnerable species (NSW DEC 2006a). The Lord Howe Island Act of 1953, as amended, established the Lord Howe Island Board (LHIB), made provisions for the LHIB to care, control, and manage the island; and established 75 percent of the land area as a permanent park preserve (NSW DEC 2007). Although the subspecies is not specifically addressed by BLI or IUCN, the species is considered "Least Concern" by the IUCN (BLI 2010o). It is not listed in any appendices of CITES.

In our 2009 ANOR, the Lord Howe pied currawong received an LPN of 12. After re-evaluating the threats to the Lord Howe pied currawong, we have determined that a change in the LPN representing the magnitude and imminence of threats to the subspecies is warranted. The Lord Howe pied currawong does not represent a monotypic genus. It faces threats that are high in magnitude due to its extremely small population size, non-target poisoning, and habitat clearing and modification. Despite conservation efforts, the population of the Lord Howe pied currawong has remained around 100 to 200 individuals. Species with small, declining population sizes such as these may be at greater risk of extinction due to synergistic effects (Davies *et al.* 2004, pp. 265–271). Because conservation efforts for the species have been implemented, we find that the threats are non-imminent. Thus, based on the best available information, the LPN has been changed from 12 to 6 to reflect non-imminent threats of high magnitude.

Invertebrates

P. Harris' Mimic Swallowtail (*Mimoides* (*syn. Eurytides*) *lysithous harrisianus*), LPN = 6

Harris' mimic swallowtail butterfly is a subspecies endemic to Brazil (Collins and Morris 1985). Although the species' range includes Paraguay, the subspecies has not been confirmed in Paraguay (Collins and Morris 1985; Finnish University and Research Network 2004). Occupying the lowland swamps and sandy flats above the tidal margins of the coastal Atlantic Forest, the subspecies prefers alternating patches of strong sun and deep shade (Collins and Morris 1985; Brown 1996). This subspecies is polyphagous, meaning that its larvae feed on more than one plant species (Kotiaho *et al.* 2005). Information on its preferred host plants and adult nectar-sources was published in the status review (also known as a 12-month finding) on December 7, 2004 (69 FR 70580). The Harris' mimic swallowtail butterfly mimics at least three butterfly species in the *Parides* genus, including the fluminense swallowtail (described below). This mimicry system may cause problems in distinguishing this subspecies from the species that it mimics (Brown in litt. 2004; Monteiro *et al.* 2004).

The Harris' mimic swallowtail was previously known in Espirito Santo, however, there are no recent confirmations of its occurrence there (Collins and Morris 1985; New and Collins 1991). In Rio de Janeiro, Harris' mimic swallowtail has been confirmed in three localities. Two colonies were identified on the east coast of Rio de Janeiro, at Barra de São João and Macaé, and the other in Poço das Antas Biological Reserve, farther inland. The Barra de São João colony is the best-studied. Between 1984 and 2004, it maintained a stable size, varying between 50 to 250 individuals (Brown 1996; Collins and Morris 1985; Brown in litt. 2004), and was reported to be viable, vigorous, and stable in 2004 (Brown, Jr. in litt. 2004). There are no estimates of the size of the colony in Poço das Antas Biological Reserve where it had not been seen for 30 years prior to its rediscovery there in 1997 (Brown, Jr. in litt. 2004). Population estimates are lacking for the colony at Macaé, where the subspecies was netted in Jurubatiba National Park in the year 2000, after having not been seen in the area for 16 years (Monteiro *et al.* 2004).

Both Barra de São João and the Poço das Antas Biological Reserve lie within the São João River Basin. Conditions at Barra de São João appear to be suitable for long-term survival of this subspecies. The Barra de São João River Basin encompasses a 216,605-ha (535,240-ac) area, 150,700 ha (372,286 ac) of which is managed as protected area. The Harris' mimic swallowtail's preferred environment of open and shady areas continues to be present in the region, with approximately 541 forest patches averaging 127 ha (314 ac) in size, covering nearly 68,873 ha (170,188 ac), and a minimum distance between forest patches of 276 meters (m) (0.17 mi) (Teixeira 2007). In studies between 1984 and 1991, Brown (1996) determined that Harris' mimic swallowtails in Barra de São João flew a maximum distance of 1000 m (0.62 mi). It follows that the average flying distance would be less than this figure. Thus, the average 276 m (0.17 mi) distance between forest patches in the Barra de São João River Basin is clearly within the flying distance of this subspecies. Because the colony at Barra de São João has maintained a stable population for 20 years, it is probable that the conditions available there remain suitable.

Habitat destruction has been the main threat to this subspecies (Collins and Morris 1985; Brown 1996), especially urbanization in Barra de São João, industrialization in Macaé (Jurubatiba National Park), and previous fires that occurred in the Poço das Antas Biological Reserve. As described in detail for the fluminense swallowtail (below), Atlantic Forest habitat has been reduced to 5 to 10 percent of its original cover. More than 70 percent of the Brazilian population lives in the Atlantic forest, and coastal development is ongoing throughout the Atlantic Forest region (Hughes *et al.* 2006; Butler 2007; Conservation International 2007; CEPF 2007a; Höfling 2007; Peixoto and

Silva 2007; Pivello 2007; World Food Prize 2007; WWF 2007; TNC 2009).

Another factor affecting many butterfly species is illegal collection. The wildlife trade is extremely lucrative and as wildlife becomes rarer; it is worth more. Although there are laws on illegal wildlife trade, in some countries, many times laws are rarely enforced due to inadequate resources; and only a fraction of smuggled wildlife is caught (*http://www.traffic.org*). For example, in 1998, in the United States 100 Golden Birdwing (*Troides aeacus,* CITES Appendix II) butterflies were seized; no permit had been issued for the specimens which had been falsely labeled before being exported from Thailand (TRAFFIC 2010, p. 28). In 2001, two Russian insect collectors were arrested in India and were found to have approximately 2000 butterflies in their possession (p. 52). In 2007, a Japanese individual was convicted for illegal sale of $38,831 U.S. dollars (USD) worth of protected butterfly species. This individual is apparently known as the world's top smuggler of protected butterflies. One of the smuggled butterfly species was Homerus Swallowtail (*Papilio homerus,* CITES Appendix I). During this investigation, 43 butterflies were sold to undercover agents, including 2 Alexandra's birdwings (*Ornithoptera alexandrae,* CITES Appendix I), 2 Luzon Peacock swallowtails (*Papilio chikae,* CITES Appendix I), and 6 Corsican swallowtails (*Papilio hospiton,* CITES Appendix I) (p. 122). In 2009, in Japan an individual was sentenced to one year and six months' imprisonment and fined one million yen ($10,750 USD) due to illegally importing and selling rare butterfly species. He was found to have illegally imported 145 butterflies from France. Among the specimens were 3 Queen Alexandra's Birdwings (*Ornithoptera alexandrae,* CITES Appendix I) and 1 Apollo Butterfly (*Parnassius apollo,* CITES Appendix II) (p. 179). Although we do not know the full extent of illegal trade, according to the 2010 TRAFFIC report, this represents only a small fraction of the illegal collection of butterfly species that occurs.

Conservation Status. The Brazilian Institute of the Environment and Natural Resources (Instituto Brasileiro do a Meio Ambiente de do Recursos Naturais Renováveis; IBAMA) considers this subspecies to be critically imperiled (Portaria No. 1,522 1989; Ministerio de Meio Ambiente 2003). As of 1996, collection and trade of the subspecies was prohibited (Brown 1996). In 1998, Brazil enacted a more effective law, Lei de Crimes Ambientais ou Lei da Natureza—Law no 9.605/98, which addresses environmental crimes and sets forth penal and administrative penalties resulting from activities that are harmful to the environment (IBAMA 2011). This law addresses the integrity of air, water bodies, forests and biodiversity; and assesses civil, administrative, and criminal penalties to private individuals, corporations, and business. Harris' mimic swallowtail was categorized on the IUCN Red List as "Endangered" in the 1988, 1990, and 1994 IUCN Red Lists (IUCN 1996). However, it currently is not included in the current IUCN Redlist (IUCN 2010; Xerces Society 2010a). This species is not listed on any appendices of CITES.

Harris' mimic swallowtail ranges within two protected areas: Poço das Antas Biological Reserve and Jurubatiba National Park. These protected areas are described in detail for the fluminense swallowtail below. The Poço das Antas Biological Reserve (Reserve) was established to protect the golden lion tamarin (*Leontopithecus rosalia*) (Decree No. 73,791, 1974), but the Harris' mimic swallowtail, which occupies the same range, likely benefits as a result of efforts to conserve golden-lion-tamarin habitat (De Roy 2002; WWF 2003; Teixeira 2007). Habitat destruction caused by fires in Poço das Antas Biological Reserve appears to have abated. The revised management plan indicates that the Reserve will be used for research and conservation, with limited public access (IBAMA 2005; CEPF 2007a). The Jurubatiba National Park (Park) is located in a region that is undergoing continuing development pressures from urbanization and industrialization (Otero and Brown 1984; Brown 1996; IFC 2002; CEPF 2007b; Khalip 2007; Savarese 2008), and there is no management plan in place for the Park (CEPF 2007b). However, as discussed for the fluminense swallowtail, the Park, as of 2007, was considered to be in a very good state of conservation (Rocha *et al.* 2007).

In our 2009 ANOR, the Harris' mimic swallowtail received an LPN of 12. After reevaluating the threats to this species, we have determined that a change in the listing prioritization number is warranted. Harris' mimic swallowtail is a subspecies and is not within a monotypic genus. Although the best-studied colony has maintained a stable and viable size for nearly two decades, there is limited suitable habitat remaining for this subspecies. Habitat destruction remains a threat. These threats are high in magnitude due to its small endemic population and potential catastrophic events such as severe tropical storms or introduction of a new disease or predator. The only known populations are within close proximity to a major, expanding city in Brazil—Rio de Janiero, the second largest city in Brazil. As this species becomes rarer, it becomes even more desirable to collectors (Traffic 2010, pp. 52, 122, 179). Although the species exists in a protected area, collectors will take risks to obtain these rare and desirable species. Because the population is very small and limited to only two small areas, we find the threats are of high magnitude. However, we do not find that these threats are imminent because the subspecies is protected by Brazilian law; and the two colonies are located within protected areas. Based on the best available information, we have changed the LPN from a 12 to a 6 to reflect non-imminent threats of high magnitude.

Q. Jamaican Kite Swallowtail (*Protographium marcellinus, syn. Eurytides*), LPN = 2

The Jamaican kite swallowtail is endemic to Jamaica, preferring wooded, undisturbed habitat containing its only known larval host plant West Indian lancewood (*Oxandra lanceolata*). The food preferences of adults have not been reported (Collins and Morris 1985; Bailey 1994). Since the 1990s, adult Jamaican kite swallowtails have been observed in the parishes of St. Thomas and St. Andrew in the east; westward in St. Ann, Trelawny, and St. Elizabeth; and in the extreme western coast Parish of Westmoreland (Bailey 1994; Smith *et al.* 1994; WRC 2001; Harris 2002; Möhn 2002).

The Jamaican kite swallowtail maintains a low population level. It occasionally becomes locally abundant in Rozelle during the breeding season in early summer and again in early fall (Brown and Heineman 1972; Collins and Morris 1985; Garraway *et al.* 1993; Bailey 1994; Smith *et al.* 1994), and experiences episodic population explosions, as described in the December 7, 2004, 12-month finding (69 FR 70580) and in the 2007 ANOR (72 FR 20184; April 23, 2007). There is only one known breeding site in the eastern coast town of Rozelle (also known as Roselle), St. Thomas Parish, although it is possible that other sites exist given the widely dispersed nature of the larval food plant (Collins and Morris 1985; Garraway *et al.* 1993; Bailey 1994; Smith *et al.* 1994; Robbins in litt. 2004).

Habitat destruction has been considered a primary threat to the Jamaican kite swallowtail. Monophagous butterflies (meaning that their larvae feed only on a single plant species) such as the Jamaican kite

swallowtail tend to be more threatened than polyphagous species. This is in part due to their specific habitat requirements (Kotiaho *et al.* 2005). Harvest and clearing reduces the availability of the only known larval food plant. Habitat modification poses an additional threat because the swallowtail does not thrive in disturbed habitats (Collins and Morris 1985). In Rozelle, extensive habitat modification for agricultural and industrial purposes such as mining has occurred (Gimenez Dixon 1996; WWF 2001). West Indian lancewood, the Jamaican kite swallowtail's larval food plant, is threatened by clearing for cultivation and by felling for the commercial timber industry (Collins and Morris 1985; Windsor Plywood 2004).

Rozelle is also subject to naturally occurring, high-impact stochastic events, such as regularly-occurring hurricanes, as described in the 2007 ANOR (72 FR 20184; April 23, 2007). Hurricane-related weather damage in the last two decades along the coastal zone of Rozelle has resulted in the erosion and virtual disappearance of the once-extensive recreational beach (Economic Commission for Latin America and the Caribbean (ECLAC), United Nations Development Programme (UNDP), and the Planning Institute of Jamaica (PIOJ) (2004)). Hurricane Ivan, a category 5 hurricane, caused severe local damage to Rozelle Beach in 2004, including road collapse caused by the erosion of the cliff face and shoreline. The estimated restoration cost from Hurricane Ivan damage was $23 million USD ($1.6 million Jamaican dollars (J$) (ECLAC *et al.* 2004), indicating the severity of the damage inflicted by these hurricanes. While we do not consider stochastic events to be a primary threat factor for this species, we believe that the damage caused by hurricanes is contributing to habitat loss.

In western parishes, habitat destruction also threatens adult Jamaican kite swallowtails. Cockpit Country, encompassing 30,000 ha (74,131 ac) of rugged forest-karst (a specialized limestone habitat) terrain, spans four western parishes, including Trelawny and St. Elizabeth, where adult Jamaican kite swallowtails have been observed (Gordon and Cambell 2006). As of 2006, 81 percent of this region remained forested, although fragmentation was occurring as a result of human-induced activities (Tole 2006). Threats to Cockpit Country include bauxite mining, unregulated plant collecting, extensive logging, conversion of forest to agriculture, illegal drug cultivation, and expansion of human settlements. These activities contribute to threats to the hydrology system from in-filling, siltation, accumulation of solid waste, and invasion by nonnative, invasive species (Cockpit Country Stakeholders Group and JEAN (Gordon and Cambell 2006; Tole 2006; Jamaica Environmental Advocacy Network 2007)).

The Blue and John Crow Mountains National Park, located on the inland portions of St. Thomas and St. Andrew and the southeast portion of St. Mary Parishes, is the only protected area in which adult Jamaican Kite swallowtails have been observed (Bailey 1994; Jamaica Conservation and Development Trust (JCDT) 2006). Established in 1990, this Park encompasses 49,520 ha (122,367 ac) of mountainous, forested terrain that ranges in elevation from 150 to 2,256 m (492 to 7,402 ft) and is considered one of the best-managed protected areas in Jamaica (JCDT 2006). However, deforestation consisting of slash-and-burn agriculture and illegal timber harvesting continues to be a threat in the Blue Mountains (Tole 2006; TNC 2010).

The Jamaican kite swallowtail has been collected for commercial trade in the past (Collins and Morris 1985; Melisch 2000; Schütz 2000). The Jamaican Wildlife Protection Act of 1998 carries a maximum penalty of U.S. $1,439 (J $100,000) or 12 months of imprisonment for violating its provisions. This deterrent appears to be effectively protecting this species from illegal trade (NEPA 2005). As of 2008, we were unaware of any recent seizures or smuggling in this species into or out of the United States (Office of Law Enforcement, U.S. Fish and Wildlife Service, Arlington, Virginia in litt.).

Conservation Status. Various levels of conservation exist for the species. In addition to being protected under Jamaica's Wildlife Protection Act of 1998, it is also included in Jamaica's National Strategy and Action Plan on Biological Diversity. This strategy established specific goals and priorities for the conservation of Jamaica's biological resources (Schedules of The Wildlife Protection Act 1998). Since 1985, the Jamaican kite swallowtail has been categorized on the IUCN Red List as "Vulnerable" (IUCN 2010). This species is not listed in any of the appendices of CITES.

In our 2009 ANOR, the Jamaican kite swallowtail received an LPN of 8. After reevaluating the threats to the Jamaican kite swallowtail, we have determined that a change in the listing priority number is warranted. The Jamaican kite swallowtail does not represent a monotypic genus. The current threats to the species are high in magnitude particularly since it only has one known larval host plant. Slash-and-burn agriculture and illegal timber harvesting continues to occur within this species' habitat (TNC 2010). These threats are occurring at the species' only known breeding site and they are exacerbated by the species' restricted distribution of its larval food plant and range. In addition, stochastic events such as hurricanes, tropical storms, and introduction of a new disease are unpredictable. Illegal collection of butterfly species (refer to discussion under Harris' mimic swallowtail) continues to occur which further adds to the pressures affecting this species. Although Jamaica has taken regulatory steps to preserve native swallowtail habitat, the threats affecting this species are imminent; its habitat is decreasing; and this loss of habitat is ongoing. Based on a reevaluation of the threats to this species, we have changed the LPN from an 8 to a 2 to reflect imminent threats of high magnitude.

R. Fluminense Swallowtail (*Parides ascanius*), LPN = 5

The fluminense swallowtail is endemic to Brazil's restinga habitat within the Atlantic Forest region in the tropical and subtropical moist broadleaf forests of coastal Brazil (Thomas 2003). Its habitat is characterized by medium-sized trees and shrubs that are adapted to coastal conditions (Kelecom 2002). During the caterpillar stage of its lifecycle, it feeds on a species in the Dutchman's pipe genus (*Aristolochia macroura*) and is believed to be monophagous (Otero and Brown 1984).

The fluminense swallowtail is sparsely distributed throughout its range, reflecting the patchy distribution of its preferred habitat (Otero and Brown 1984; Tyler *et al.* 1994; Uehara-Prado and Fonseca 2007). The species can be seasonally common, with sightings of up to 50 individuals seen in one morning in the Barra de São João area. It was historically seen in Rio de Janeiro, Espirito Santo, and Sao Paulo (Gelhaus *et al.* 2004). However, there are no recent confirmations of this species in either Espirito Santo or Sao Paulo. In Rio de Janeiro, the species has been documented in five localities including: Barra de São João and Macaé (in the Restinga de Jurubatiba National Park) along the coast; and Poço das Antas Biological Reserve, farther inland (Brown in litt. 2004; Soler 2005). Another verified occurrence was in the Área de Tombamento do Mangue do Rio Paraíba do Sul (Uehara-Prado and Fonseca 2007). Additionally, the fluminense swallowtail has been

documented in Parque Natural Municipal do Bosque da Barra (Instituto Iguacu 2008).

A population estimate reported in 1984 in Barra de São João was between 20 and 100 individuals (Otero and Brown 1984). The colony within the Poço das Antas Biological Reserve was rediscovered in 1997, after a nearly 30-year absence from this locality (Brown, Jr. in litt. 2004). Researchers noted only that "large numbers" of swallowtails were observed (Brown, Jr. in litt. 2004; Robbins in litt. 2004). There are no population estimates for the other colonies. However, individuals from the viable population in Barra de São João migrate widely in some years, and this is likely to enhance interpopulation gene flow among existing colonies (Brown, Jr. in litt. 2004).

Habitat destruction has been the main threat to this species (Collins and Morris 1985; Brown 1996; Gimenez Dixon 1996). Monophagous butterflies tend to be more threatened than polyphagous species (Kotiaho *et al.* 2005), and the restinga habitat preferred by fluminense swallowtails is a highly specialized environment that is restricted in distribution (Otero and Brown 1986; Brown, Jr. in litt. 2004; Ueraha-Prado and Fonseca 2007). Moreover, fluminense swallowtails require large areas to maintain viable populations (Brown, Jr. in litt. 2004; Otero and Brown 1986; Ueraha-Prado and Fonseca). The Atlantic Forest habitat, which once covered 1.4 million km^2 (540,543 mi^2), has been reduced to 5 to 10 percent of its original cover. It harbors more than 70 percent of the Brazilian human population (Butler 2007; Conservation International 2007; CEPF 2007a; Höfling 2007; WWF 2007; TNC 2009). The restinga habitat upon which this species depends has been reduced by 17 km^2 (6.56 mi^2) each year between 1984 and 2001, equivalent to a loss of 40 percent of restinga vegetation over the 17-year period (Temer 2006). The major ongoing human activities that have resulted in habitat loss, degradation, and fragmentation include: Conversion to agriculture, plantations, livestock pastures, human settlements, hydropower reservoirs, commercial logging, subsistence activities, and coastal development (Hughes *et al.* 2006; Butler 2007; Pivello 2007; TNC 2007; Peixoto and Silva 2007; World Food Prize 2007; WWF 2007).

One estimate concluded that Rio de Janeiro contains 1,675,457 ha (4,140,127 ac) of suitable habitat (Uehara-Prado and Fonseca 2007). While the presence of suitable habitat should not be used to infer the presence of a species (Uehara-Prado and Fonseca 2007), it should facilitate more focused efforts to identify and confirm additional localities and the conservation status of the fluminense swallowtail. Evaluating the correlation between the distribution of fluminense swallowtail and the existing protected areas within Rio de Janeiro revealed that only two known occurrences of the fluminense swallowtail correlated with protected areas, including the Poço das Antas Biological Reserve (Uehara-Prado and Fonseca 2007). The Poço das Antas Biological Reserve and the Jurubatiba National Park are the only two protected areas considered large enough to support viable populations of the fluminense swallowtail (Otero and Brown 1984; Brown, Jr. in litt. 2004; Robbins in litt. 2004). The Poço das Antas Biological Reserve, established in 1974, encompasses 13,096 ac (5,300 ha) of inland Atlantic Forest habitat (CEPF 2007a; Decree No. 73,791, 1974).

According to the 2005 revised management plan (IBAMA 2005), the Reserve is used solely for protection, research, and environmental education. Public access is restricted, and there is an emphasis on habitat conservation, including protection of the Río São João. This river runs through the Reserve and is integral to creating the restinga conditions preferred by the fluminense swallowtail. The Reserve was plagued by fires in the late 1980s through the early 2000s, but fire is not currently thought to be a threat. Between 2001 and 2006, there was an increase in the number of private protected areas near or adjacent to the Poço das Antas Biological Reserve and Barra de São João (Critical Ecosystem Partnership Fund (CEPF) 2007a). Corridors are being created between existing protected areas and 13 privately protected forests, by planting and restoring habitat previously cleared for agriculture or by fires (De Roy 2002).

The Jurubatiba National Park (14,860 ha; 36,720 mi^2), located in Macaé and established in 1998 (Decree of April 29 1998), is one of the largest contiguous restingas (specialized sandy, coastal habitats) under protection in Brazil (CEPF 2007b; Rocha *et al.* 2007). The Macaé River Basin forms the outer edge of the Jurubatiba National Park (Park) (International Finance Corporation (IFC) 2002) and consists of the habitat preferred by the fluminense swallowtail (Brown 1996; Otero and Brown 1984). Rocha *et al.* (2007) described the habitat as being in a very good state of conservation, but lacking a formal management plan. Threats to the Macaé region include industrialization for oil reserve and power development (IFC 2002) and intense population pressures (including migration and infrastructural development) (Brown 1996; CEPF 2007b; IFC 2002; Khalip 2007; Otero and Brown 1984; Savarese 2008). The researchers concluded that the existing protected area system may be inadequate for the conservation of this species.

Commercial exploitation has been identified as a potential threat to the fluminense swallowtail (Collins and Morris 1985; Melisch 2000; Schütz 2000). The species is easy to capture, and species with restricted distributions or localized populations, such as the fluminense swallowtail, tend to be more vulnerable to overcollection than those with a wider distribution (Brown, Jr. in litt. 2004; Robbins in litt. 2004). However, based on the conservation measures in place, we believe that overutilization is not currently a threat to the fluminense swallowtail.

Parasitism has been indicated to be a factor affecting the fluminense swallowtail. Recently, Tavares *et al.* (2006) discovered four species of parasitic chalcid wasps (*Brachymeria* and *Conura* species; Hymenoptera family) associated with fluminense swallowtails. Parasitoids are species whose immature stages develop on or within an insect host of another species, ultimately killing the host (Weeden *et al.* 1976). This is the first report of parasitoid association with fluminense swallowtails (Tavares *et al.* 2006). To date, there is no information regarding the magnitude of effect these parasites are having on the fluminense swallowtail. At this time, we do not find that it affects the species to the extent that it is a threat to the species.

Although Harris' mimic swallowtail and the fluminense swallowtail face similar threats, there are several dissimilarities that influence the magnitude of these threats. Fluminense swallowtails are monophagous (Otero and Brown 1984; Kotiaho *et al.* 2005). In contrast, Harris' mimic swallowtail is polyphagous (Collins and Morse 1985; Brown 1996); its larvae feed on more than one species of plant (Kotiaho *et al.* 2005). In addition, although their ranges overlap, Harris' mimic swallowtails tolerate a wider range of habitat than the highly specialized restinga habitat preferred by fluminense swallowtail. Also unlike the Harris' mimic swallowtail, fluminense swallowtails require a large area to maintain a viable population (Brown, Jr. in litt. 2004; Monteiro *et al.* 2004); in part because they are known to only feed on one food source.

Conservation Status. Brazil categorizes the fluminense swallowtail to be "Imperiled" (Portaria No. 1,522

1989; MMA 2003). It is strictly protected from commerce (Brown, Jr. in litt. 2004). According to the 2010 IUCN Red List, the fluminense swallowtail has been classified as "Vulnerable" since 1983, based on its small distribution and a decline in the number of populations caused by habitat fragmentation and loss. However, this species has not been reevaluated using the 1997 IUCN Red List categorization criteria. This species has not been formally considered for listing in the Appendices of CITES (*www.cites.org*). However, the European Commission listed fluminense swallowtail on Annex B of Regulation 338/97 in 1997 (Grimm in litt. 2008), and the species continues to be listed on this Annex (Eur-Lex 2008). This listing requires that imports from a non-European Union country be accompanied by a permit that is only issued if the CITES Scientific Authority has made a finding that trade in the species will not be detrimental to the survival of the species in the wild (Grimm in litt. 2008). There would be no requirement that the non-European Union exporting country make such a finding or issue a document if the species is not CITES-listed. There has been no legal trade in this species into the European Union since its listing on Annex B (Grimm in litt. 2008), and we are not aware of any recent reports of seizures or smuggling in this species into or out of the United States (Office of Law Enforcement, U.S. Fish and Wildlife Service, Arlington, Virginia in litt. 2008).

In our 2009 ANOR, the fluminense swallowtail received an LPN of 5. After reevaluating the threats to the fluminense swallowtail, we have determined that a change in the listing priority number is not warranted. The fluminense swallowtail does not represent a monotypic genus. The species is currently at risk from habitat destruction; however, we have determined that overutilization and parasitism are not currently occurring such that they are threats to the fluminense swallowtail. The current threat of habitat destruction is of high magnitude because the species: (1) Occupies highly specialized habitat; (2) requires large areas to maintain a viable colony; and (3) is only found within two protected areas considered to be large enough to support viable colonies. However, additional populations have been reported, increasing previously known population numbers and distribution. The threat of habitat destruction is nonimminent because most habitat modification is the result of historical destruction that has resulted in fragmentation of the current landscape; however, the potential for continued habitat modification exists, and we will continue to monitor the situation. On the basis of this information, the fluminense swallowtail retains a priority rank of 5.

S. Hahnel's Amazonian Swallowtail (*Parides hahneli*), LPN = 2

Hahnel's Amazonian swallowtail is endemic to Brazil and is found only on sandy beaches where the habitat is overgrown with dense scrub vegetation (Collins and Morris 1985; New and Collins 1991; Tyler *et al.* 1994). Hahnel's Amazonian swallowtail is likely to be monophagous. The swallowtail depends upon highly specialized habitat—stranded beaches of river drainage areas. Wells *et al.* (1983) describes the habitat as ancient sandy beaches covered by scrubby or dense vegetation that is not floristically diverse. The larval host-plant is believed to be a species in the Dutchman's pipe genus, either *Aristolochia lanceolato-lorato* or *A. acutifolia* (69 FR 70580; December 7, 2004).

Hahnel's Amazonian swallowtail is known in three localities along the tributaries of the middle and lower Amazon River basin in the states of Amazonas and Pará (Collins and Morris 1985; New and Collins 1991; Tyler *et al.* 1994; Brown 1996). Two of these colonies were rediscovered in the 1970s (Collins and Morris 1985; Brown 1996). Hahnel's Amazonian swallowtail is highly localized, reflecting the distribution of its highly specialized preferred habitat (Brown in litt. 2004). The population size of Hahnel's Amazonian swallowtail is not known. However, within the area of its range, Hahnel's Amazonian swallowtail populations are small (Brown in litt. 2004).

Habitat alteration (*e.g.,* for dam construction and waterway crop transport) and destruction (*e.g.,* clearing for agriculture and cattle grazing) are ongoing in Pará and Amazonas, where this species is found (Fearnside 2006; Hurwitz 2007). Current research on population trends is lacking. However, researchers believe that, because Hahnel's Amazonian swallowtail has extremely limited habitat preferences, any sort of river modification such as impoundment, channelization, or levee construction would have an immediate and highly negative impact on the species (Wells *et al.* 1983; New and Collins 1991).

This species of swallowtail has been collected for commercial trade (Collins and Morris 1985; Melisch 2000; Schütz 2000). Species with restricted distributions or localized populations, such as the Hahnel's Amazonian swallowtail, are more vulnerable to overcollection than those with a wider distribution (Brown in litt. 2004; Robbins in litt. 2004). Although not strictly protected from collection throughout Brazil, the state of Pará recently declared the capture of Hahnel's Amazonian swallowtail for purposes other than research to be forbidden (Decreto No. 802, 2008). It is not listed in any appendices of CITES. As of 2008, seizures of Hahnel's Amazonian swallowtail into or out of the United States had not been reported (Office of Law Enforcement, U.S. Fish and Wildlife Service, Arlington, Virginia in litt. 2008). The best available information does not indicate that overutilization is a threat to the species.

Competition for host plants has been identified as a potential threat to Hahnel's Amazonian swallowtail. Researchers in the past believed that this species might suffer from host plant competition with other butterfly species in the region (Wells 1983; Collins and Morris 1985; Brown 1996); however, this competition has not been confirmed. It occupies the same range with another swallowtail butterfly, *Parides chabrias ygdrasilla,* and mimics at least two other genera that occupy the same area, *Methona* and *Thyrides* (Brown 1996). At this time, there is insufficient information to conclude that competition is a threat affecting this species.

Conservation Status. Hahnel's Amazonian swallowtail is not nationally protected (Portaria No. 1522 1989; MMA 2003), although the state of Pará listed it as endangered on its list of threatened species (Resolução 054 2007; Decreto No. 802 2008; Secco and Santos 2008). Hahnel's Amazonian swallowtail continues to be listed as "Data Deficient" by the IUCN Red List (IUCN 2010). Hahnel's Amazonian swallowtail has not been formally considered for listing in the Appendices of CITES (CITES 2009). Hahnel's Amazonian swallowtail is listed on Annex B of Regulation 338/97 (Eur-Lex 2008), and there has been no legal trade in this species into the European Union since its listing on Annex B in 1997 (Grimm in litt. 2008).

After reevaluating the threats to the Hahnel's Amazonian swallowtail, we have determined that a change in listing priority number is warranted. Hahnel's Amazonian swallowtail does not represent a monotypic genus. It faces threats that are high in magnitude and imminent due to its small endemic population, and limited and decreasing availability of its highly specialized

habitat (stranded beaches of river drainage area) and food sources. The primary threats of dam construction, waterway crop transport, clearing for agriculture and cattle grazing are ongoing in Pará and Amazonas. These threats are imminent due to the species' highly localized and specialized habitat requirements. Secondary concerns are possible illegal collection, competition with other species, and potential catastrophic events such as severe tropical storms or introduction of a new disease or predator. Based on a reevaluation of the threats, we have changed the LPN from an 8 to a 2 to reflect imminent threats of high magnitude.

T. Kaiser-I-Hind Swallowtail (*Teinopalpus imperialis*), LPN = 8

The Kaiser-I-Hind swallowtail is native to the Himalayan regions of Bhutan, China, India, Laos, Myanmar, Nepal, Thailand, and Vietnam (Shrestha 1997; FRAP 1999; Osada *et al.* 1999; Tordoff *et al.* 1999; Trai and Richardson 1999; Masui and Uehara 2000; Food and Agriculture Organization (FAO) 2001; Igarashi 2001; Baral *et al.* 2005; TRAFFIC 2007). This species prefers undisturbed (primary), heterogeneous, broad-leaved-evergreen forests or montane deciduous forests, and flies at altitudes of 1,500 to 3,050 m (4,921 to 10,000 ft) (Collins and Morris 1985; Tordoff *et al.* 1999; Igarashi 2001). This species is polyphagous. Larval host-plants may differ across the species' range, and include: *Magnolia campbellii* in China (Igarashi and Fukuda 2000; Sung and Yan 2005; Yen and Yang 2001); *Magnolia* spp. in Vietnam (Funet 2004); *Daphne* spp. in India, Nepal, and Myanmar (Funet 2004); and *Daphne nipalensis* also in India (Robinson *et al.* 2004). It has been reported that the adult Kaiser-I-Hind swallowtails do not feed (Collins and Morris 1985).

Habitat destruction is the greatest threat to this species, which prefers undisturbed high-altitude habitat (Collins and Morris 1985; Tordoff *et al.* 1999; Igarashi 2001). In China and India, the Kaiser-I-Hind swallowtail populations are at risk from habitat modification and destruction due to commercial and illegal logging (Yen and Yang 2001; Maheshwari 2003). In Nepal, the species is at risk from habitat disturbance and destruction resulting from mining, fuel wood collection, agriculture, and grazing animals (Collins and Morris 1985; Shrestha 1997; Baral *et al.* 2005). Nepal's Forest Ministry considered habitat destruction to be a critical threat to all biodiversity, including the Kaiser-I-Hind swallowtail, in the development of their biodiversity strategy (HMGN 2002). Habitat degradation and loss caused by deforestation and land conversion for agricultural purposes is a primary threat to the species in Thailand (Hongthong 1998; FAO 2001). The species is afforded some protection from habitat destruction in Vietnam, where it has been confirmed in three nature reserves that have low levels of disturbance (Tordoff *et al.* 1999; Trai and Richardson 1999).

Conservation Status

Since 1996, the Kaiser-I-Hind swallowtail has been categorized on the IUCN Red List as a species of "Lower Risk/near threatened"; it has not been reevaluated using the 1997 criteria (Gimenez Dixon 1996; IUCN 2010). The species was considered "Rare" by Collins and Morris (1985). Despite its widespread distribution, local populations are not abundant (Collins and Morris 1985). The known localities and conservation status of the species within each range country follows:

Bhutan: The species was reported to be extant in Bhutan (Gimenez Dixon 1996; FRAP 1999), although details on localities or status information were not provided.

China: The species has been reported in Fuji, Guangxi, Hubei, Jiangsu, Sichuan, and Yunnan Provinces (Collins and Morris 1985; Gimenez Dixon 1996; UNEP–WCMC 1999; Igarashi and Fukuda 2000; Sung and Yan 2005). The species is classified by the 2005 China Species Red List as "Vulnerable" (China Red List 2006).

India: Assam, Manipur, Meghalaya, Sikkim, and West Bengal (Bahuguna 1998; Collins and Morris 1985; Gimenez Dixon 1996; Ministry of Environment and Forests 2005). There is no recent status information on this species (Bombay Natural History Society in litt. 2007).

Laos: The species has been reported (Osada *et al.* 1999), but no further information is available (Vonxaiya in litt. 2007).

Myanmar: The species has been reported in Shan, Kayah (Karen) and Thaninanthayi (Tenasserim) states (Collins and Morris 1985; Gimenez Dixon 1996). There is no status information.

Nepal: The species has been reported in Nepal (Collins and Morris 1985; Gimenez Dixon 1996), in the Central Administrative Region at two localities: Phulchoki Mountain Forest (Baral *et al.* 2005; Collins and Morris 1985) and Shivapuri National Park (Nepali Times 2002; Shrestha 1997). There is no status information.

Thailand: The species has been reported in the northern province of Chang Mai (Pornpitagpan 1999). The CITES Scientific Authority of Thailand recently confirmed that the species has limited distribution in the high mountains (>1,500 m (4,921 ft)) of northern Thailand and is found within three national parks. However, no biological or status information was available (Choldumrongkul in litt. 2007).

Vietnam: The species has been confirmed in three Nature Reserves (Tordoff *et al.* 1999; Trai and Richardson 1999), and the species is listed as "Vulnerable" in the 2007 Vietnam Red Data Book, due to declining population sizes and area of occupancy (Canh in litt. 2007).

The Kaiser-I-Hind swallowtail is highly valued and has been collected for commercial trade, despite range country regulations prohibiting or restricting such activities (Collins and Morris 1985; Schütz 2000). In China, where the species is protected by the Animals and Plants (Protection of Endangered Species) Ordinance (1989), which restricts import, export, and possession of the species, species purportedly derived from Sichuan were being advertised for sale on the Internet for 60 U.S. Dollars (US$). In India, the Kaiser-I-Hind swallowtail is listed on Schedule II of the Indian Wildlife Protection Act of 1972, which prohibits hunting without a license (Collins and Morris 1985; Indian Wildlife Protection Act 2006). However, between 1990 and 1997, illegally collected specimens were selling for 500 Rupees (12 US$) per female and 30 Rupees (0.73 US$) per male (Bahuguna 1998). In Nepal, the Kaiser-I-Hind swallowtail is protected by the National Parks and Wildlife Conservation Act of 1973 (His Majesty's Government of Nepal (HMGN) 2002). However, the Nepal Forestry Ministry determined in 2002 that the high commercial value of its "Endangered" species on the local and international market may result in local extinctions of species such as the Kaiser-I-Hind (HMGN 2002).

In Thailand, the Kaiser-I-Hind swallowtail and 13 other invertebrates are listed under Thailand's Wild Animal Reservation and Protection Act (WARPA) of 1992 (B.E. 2535 1992), which makes it illegal to collect wildlife (whether alive or dead) or to have the species in one's possession (Hongthong 1998; Pornpitagpan 1999; FAO 2001; Choldumrongkul in litt. 2007). In addition to prohibiting possession, WARPA prohibits hunting, breeding, and trading. Import and export are only allowed for conservation purposes

(Jaisielthum in litt. 2007). According to the Thai Scientific Authority, there are no captive breeding programs for this species; however, the species is offered for sale by the Lepidoptera Breeders Association (2009). It was marketed as derived from a captive breeding program in Thailand, although specimens were recently noted as being "out of stock" (Lepidoptera Breeders Association 2009).

In Vietnam, Kaiser-I-Hind swallowtails are reported to be among the most valuable of all butterflies (World Bank 2005). In 2006, the species was listed on Schedule IIB of Decree No. 32 on "Management of endangered, precious and rare forest plants and animals." A Schedule IIB-listing restricts the exploitation or commercial use of species with small populations or that are considered by the country to be in danger of extinction (Canh in litt. 2007). In a recent survey conducted by TRAFFIC Southeast Asia (2007), of 2000 residents in Ha Noi, Vietnam, the Kaiser-I-Hind swallowtail was among 37 Schedule IIB-species that were actively being collected (p. 36). The majority of the survey respondents were unaware of legislation prohibiting collection of Schedule IIB-species (p. 7). This is a highly desirable species, and there is a culture within Vietnam of consuming rare and expensive wild animal dishes, particularly in Ha Noi among the elite (TRAFFIC 2007, p. 9). This practice does not seem to be decreasing; rather it appears to be increasing. Thus, we find that overutilization for illegal domestic use is a threat to this species. Although Vietnam has implemented several action plans to strengthen control of trade in wild fauna and flora (TRAFFIC 2007, p. 9), within-country protections are inadequate to protect the species from illegal collection throughout its range.

The Kaiser-I-Hind swallowtail has been listed in CITES Appendix II since 1987 (UNEP–WCMC 2008a). Between 1991 and 2005, 160 Kaiser-I-Hind swallowtail specimens were traded internationally under CITES permits (UNEP WCMC 2006), and between 2000 and 2008, 157 specimens were traded (UNEP WCMC 2009). Reports that the Kaiser-I-Hind swallowtail is being captive-bred in Taiwan (Yen and Yang 2001) remain unconfirmed. Since 1993, there have been no reported seizures or smuggling of this species into or out of the United States (Office of Law Enforcement, U.S. Fish and Wildlife Service, Arlington, Virginia in litt. 2008). Therefore, on the basis of global trade data, we do not consider legal international trade to be a threat to this species.

After reevaluating the threats to this species, we have determined that a change in listing priority number is not warranted. The Kaiser-I-Hind swallowtail does not represent a monotypic genus. The current threats of habitat destruction and illegal collection are moderate in magnitude due to the species' wide distribution and to the protections in place. We find that the threats are imminent due to ongoing habitat destruction, high market value for specimens, and inadequate domestic protections for the species or its habitat. Based on our reassessment of the threats, we have retained an LPN of 8 to reflect imminent threats of moderate magnitude.

Preclusion and Expeditious Progress

This section describes the actions that continue to preclude the immediate proposal of listing rules for the 20 species described above. In addition, we summarize the expeditious progress we are making, as required by section 4(b)(3)(B)(iii)(II) of the Act, to add qualified species to the lists of endangered or threatened species and to remove from these lists species for which protections of the Act are no longer necessary.

Section 4(b) of the Act states that the Service may make warranted-but-precluded findings only if it can demonstrate that (1) An immediate proposed rule is precluded by other pending proposals and that (2) expeditious progress is being made on other listing actions. 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; 90-day and 12-month 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. The median cost for preparing and publishing a 90-day finding is $39,276; for a 12-month finding, $100,690; for a proposed rule with critical habitat, $345,000; and for a final listing rule with critical habitat, the median cost is $305,000.

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).

Since FY 2002, the Service's budget has included a critical habitat subcap 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 2010, we are using some of the critical habitat subcap funds to fund actions with statutory deadlines.

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, set the limits on our determinations of preclusion and expeditious progress.

In FY 2010, expeditious progress is that amount of work that can be achieved with $10,471,000, which is the amount of money that Congress appropriated for the Listing Program (that is, the portion of the Listing Program funding not related to critical habitat designations for species that are already listed). However, these funds were not enough to fully fund all our court-ordered and statutory listing actions in FY 2010, so we used $1,114,417 of our critical habitat subcap funds in order to work on all of our required petition findings and listing determinations. This brings the total amount of funds we had for listing actions in FY 2010 to $11,585,417. 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 $11,585,417 is being 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 for some of our candidate species. In 2009, the responsibility for listing foreign species under the Act was transferred from the Division of Scientific Authority (DSA), International Affairs Program, to the Endangered Species Program. Starting in FY 2010, a portion of our funding is being used to work on the actions described above as they apply to listing actions for foreign species.

For FY 2011, on September 29, 2010, Congress passed a continuing resolution which provides funding at the FY 2010 enacted level. Until Congress appropriates funds for FY 2011, we will fund listing work based on the FY 2010 amount.

In addition, available staff resources are also a factor in determining high-priority species provided with funding. Finally, proposed rules for reclassification of threatened species to endangered are lower priority, because as listed species, they are already afforded the protection of the Act and implementing regulations.

Starting in FY 2010, the Washington Office (WO) Endangered Species Program has full responsibility for foreign species' listing actions under the Act. The Branch of Foreign Species (BFS) was established in June 2010 to specifically work on petitions and other actions under Section 4 of the Act for foreign species.

Our expeditious progress also includes work on listing actions that we funded in FY 2010 and FY 2011 but have not yet been completed to date. These actions are listed below. Actions in the top section of the table are being conducted under a deadline set by a court. Actions in the bottom section of the table are being conducted to meet statutory timelines, that is, timelines required under the Act. The funding for domestic and foreign species was not appropriated separately in FY 2010. In addition to the actions demonstrating expeditious progress mentioned above, we list the progress in adding qualified species to the Federal List of Endangered and Threatened Species for domestic species in the 2010 Candidate Notice of Review (75 FR 69822, published November 10, 2010).

BFS may, based on available staff resources, work on species described within this ANOR with an LPN of 2 or 3, and when appropriate, species with a lower priority if they overlap geographically or have the same threats as the species with the high priority. Including these species together in the same proposed rule results in considerable savings in time and funding, when compared to preparing separate proposed rules for each of them in the future. Because the actions below are either the subject of a court-approved settlement agreement or subject to an absolute statutory deadline and, thus, are higher priority than work on proposed listing determinations for the 20 species described above, publication of proposed rules for these 20 species is precluded. For expeditious progress on domestic actions, see the Candidate Notice of Review, published November 10, 2010.

ESA Foreign Species Listing Actions Funded in FY 2010 But Not Yet Completed

Species	Action
Actions Subject to Court Order/Settlement Agreement	
12 parrots [1]	12-month status determination.
Actions with Statutory Deadlines	
5 Bird species in Colombia and Ecuador	Final listing determination.
6 Bird species in Europe and Asia [1]	Final listing determination.
6 Bird species in Peru and Bolivia [1]	Final listing determination.
7 Bird species in Brazil	Final listing determination.
Peary and Dolphin-Union caribou	90-day petition finding.
Queen charlotte goshawk	Final listing determination.

[1] Partially funded with FY 2010 funds; also will be funded with FY 2011 funds.

Despite the priorities that preclude publishing proposed listing rules for these 20 species described in this notice, we are making expeditious progress in adding to and removing species from the Federal lists of threatened and endangered species. Our expeditious progress for foreign species since publication of the 2009 Notice of Review, August 12, 2009 (74 FR 40540) to the current date includes preparing and publishing the following:

ESA FOREIGN SPECIES LISTING ACTIONS PUBLISHED IN FY 2010

Publication date	Title	Action	FR pages
11/03/2009	Listing the Salmon-Crested Cockatoo as Threatened Throughout its Range with Special Rule.	Proposed Listing Threatened	74 FR 56770–56791
1/05/2010	Listing Foreign Bird Species in Peru and Bolivia as Endangered Throughout Their Range.	Proposed Listing Endangered	75 FR 605–649
1/05/2010	Listing Six Foreign Birds as Endangered Throughout Their Range.	Proposed Listing Endangered	75 FR 286–310
1/05/2010	Withdrawal of Proposed Rule to List Cook's Petrel	Proposed rule, withdrawal	75 FR 310–316
1/05/2010	Final Rule to List the Galapagos Petrel and Heinroth's Shearwater as Threatened Throughout Their Ranges.	Final Listing Threatened	75 FR 235–250
6/23/2010	90-Day Finding on a Petition to List the Honduran Emerald Hummingbird as Endangered.	Notice of 90-day Petition Finding, Substantial.	75 FR 35746–35751
7/27/2010	Determination on Listing the Black-Breasted Puffleg as Endangered Throughout its Range; Final Rule.	Final Listing Endangered	75 FR 43844–43853
7/27/2010	Final Rule to List the Medium Tree-Finch (*Camarhynchus pauper*) as Endangered Throughout its Range.	Final Listing Endangered	75 FR 43853–43864
8/3/2010	Determination of Threatened Status for Five Penguin Species.	Final Listing Threatened	75 FR 45497–45527
8/17/2010	Listing Three Foreign Bird Species from Latin America and the Caribbean as Endangered Throughout Their Range.	Final Listing Endangered	75 FR 50813–50842
9/28/2010	Determination of Endangered Status for the African Penguin.	Final Listing Endangered	75 FR 59645–59656
02/22/2011	Determination of Threatened Status for Southern rockhopper penguin—Campbell Plateau population.	Final Listing Endangered	76 FR 9681–9692

As explained above, a determination that listing is warranted-but-precluded must also demonstrate that expeditious progress is being made to add or 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 Lists under the Recovery program, which is funded by a separate line item in the budget of the Endangered Species 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 are making progress in FY 2010 in the Listing Program.

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.

Our expeditious progress also includes work on pending listing actions described above in our "precluded finding," but for which decisions had not been completed at the time of this publication.

Monitoring

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 12-month finding, and to "make prompt use of the [emergency listing] authority [under section 4(b)(7)] to prevent a significant risk to the well being of any such species." For foreign species, the Service's ability to gather information to monitor species is limited. The Service welcomes all information relevant to the status of these species, because we have no ability to gather data in foreign countries directly and cannot compel another country to provide information. Thus, this ANOR plays a critical role in our monitoring efforts for foreign species. With each ANOR, we request information on the status of the species included in the notice. Information and comments on the annual findings can be submitted at any time. We review all new information received through this process as well as any other new information we obtain using a variety of methods. We collect information directly from range countries by correspondence, from peer-reviewed scientific literature, unpublished literature, scientific meeting proceedings, and CITES documents (including species proposals and reports from scientific committees). We also obtain information through the permit application processes under CITES, the Act, and the Wild Bird Conservation Act (16 U.S.C. 4901 et seq.). We also consult with the IUCN species specialist groups and staff members of the U.S. CITES Scientific and Management Authorities, and the Division of International Conservation; and we attend scientific meetings to obtain current status information for relevant species. As previously stated, if we identify any species for which emergency listing is appropriate, we will make prompt use of the emergency listing authority under section 4(b)(7) of the Act.

Request for Information

We request the submission of any further information on the species in this notice as soon as possible, or whenever it becomes available. We especially seek information: (1) Indicating that we should remove a taxon from consideration for listing; (2) documenting threats to any of the included taxa; (3) describing the immediacy or magnitude of threats facing these taxa; (4) identifying taxonomic or nomenclatural changes for any of the taxa; or (5) noting any mistakes, such as errors in the indicated historic ranges.

References Cited

A list of the references used to develop this notice is available upon request (*see* **ADDRESSES** section).

Authors

This Notice of Review was authored by the staff of the Branch of Foreign Species, Endangered Species Program, U.S. Fish and Wildlife Service (*see* **ADDRESSES** section).

Authority

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

Dated: April 15, 2011.

Rowan W. Gould,

Acting Director, Fish and Wildlife Service.

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