continues to not meet this statutory obligation. If the state fails to submit the required SIPs or if they submit SIPs that EPA cannot approve, then EPA will be required to develop the plans in lieu of the state.

L. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology and Transfer Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impracticable. VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by VCS bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations of when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not involve technical standards. Therefore, EPA did not consider the use of any VCS.

M. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register.** A ''major rule'' cannot take effect until 60 days after it is published in the **Federal Register.** This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective January 5, 2010.

N. Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the District of Columbia Circuit within 60 days from the date the final action is published in the **Federal Register.** Filing a petition for reconsideration by the EPA Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review must be filed, and shall not postpone the effectiveness of such rule or action.

Thus, any petitions for review of this action making findings of failure to submit section 185 fee program SIPs for the nonattainment areas identified in section II above must be filed in the Court of Appeals for the District of Columbia Circuit within 60 days from the date that the final action is published in the **Federal Register.**

List of Subjects in 40 CFR Part 52

Environmental protection, Administrative practice and procedure, Air pollution control, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: December 20, 2009.

Gina McCarthy,

Assistant Administrator, Office of Air and Radiation.

[FR Doc. E9–31173 Filed 1–4–10; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[FWS–R9–ES–2009–0086;90100–1660–1FLA]

RIN 1018–AW70

Endangered and Threatened Wildlife and Plants; Final Rule To List the Galapagos Petrel and Heinroth's Shearwater as Threatened Throughout Their Ranges

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine threatened status for the Galapagos petrel (*Pterodroma phaeopygia*) previously referred to as (*Pterodroma phaeopygia phaeopygia*); and the Heinroth's shearwater (*Puffinus heinrothi*) under the Endangered Species Act of 1973, as amended (Act). This rule implements the Federal protections provided by the Act for these two foreign seabird species.

DATES: This final rule becomes effective February 4, 2010.

ADDRESSES: This final rule is available on the Internet at *http://www.regulations.gov* and comments and materials received, as well as supporting documentation used in the preparation of this rule, will be available for public inspection, by appointment, during normal business hours at: U.S. Fish and Wildlife Service, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Suite 400, Arlington, VA 22203.

FOR FURTHER INFORMATION CONTACT: Nicole Alt, Chief, Division of Conservation and Classification, Endangered Species Program, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 420, Arlington, VA 22203; telephone 703–358–2171; facsimile 703–358–1735. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(A) of the Act (16 U.S.C. 1531 *et seq.*) requires us to make a finding (known as a ''90-day finding'') on whether a petition to add a species to, remove a species from, or reclassify a species on the Federal Lists of Endangered and Threatened Wildlife and Plants has presented substantial information indicating that the requested action may be warranted. To the maximum extent practicable, the finding must be made within 90 days following receipt of the petition and must be published promptly in the **Federal Register**. If we find that the petition has presented substantial information indicating that the requested action may be warranted (a positive finding), section 4(b)(3)(A) of the Act requires us to commence a status review of the species if one has not already been initiated under our internal candidate assessment process.

In addition, section 4(b)(3)(B) of the Act requires us to make a finding within 12 months following receipt of the petition (''12-month finding'') on whether the requested action is warranted, not warranted, or warranted but precluded by higher priority listing. Section 4(b)(3)(C) of the Act requires that a finding of warranted but precluded for petitioned species should be treated as having been resubmitted on the date of the warranted but precluded finding. A warranted-but-precluded finding is, therefore, subject to a new finding within 1 year and subsequently thereafter until we publish a proposal to list or a finding that the petitioned action is not warranted. The Service publishes an annual notice of resubmitted petition findings (annual notice) for all foreign species for which listings were previously found to be warranted but precluded.

Previous Federal Action

On November 28, 1980, we received a petition (1980 petition) from Dr.

Warren B. King, Chairman, United States Section of the International Council for Bird Preservation (ICBP), to add 60 foreign bird species to the list of Threatened and Endangered Wildlife (50 CFR 17.11), including two species (Galapagos petrel, and Heinroth's shearwater) that are the subject of this rule. Two of the foreign species identified in the petition were already listed under the Act; therefore, in response to the 1980 petition, we published a substantial 90-day finding on May 12, 1981 (46 FR 26464), for 58 foreign species and initiated a status review. On January 20, 1984 (49 FR 2485), we published a 12-month finding within an annual review on pending petitions and description of progress on all pending petition findings. In this notice, we found that listing all 58 foreign bird species on the 1980 petition was warranted but precluded by higher-priority listing actions. On May 10, 1985, we published the first annual notice (50 FR 19761) in which we continued to find that listing all 58 foreign bird species on the 1980 petition was warranted but precluded by higher-priority listing actions. We published additional annual notices on the 58 species included in the 1980 petition on January 9, 1986 (51 FR 996), July 7, 1988 (53 FR 25511), December 29, 1988 (53 FR 52746), April 25, 1990 (55 FR 17475), November 21, 1991 (56 FR 58664), and May 21, 2004 (69 FR 29354). These notices indicated that the Galapagos petrel and Heinroth's shearwater, along with the remaining species in the 1980 petition, continued to be warranted but precluded.

Per the Service's listing priority guidelines (September 21, 1983; 48 FR 43098), in our April 23, 2007, Annual Notice on Resubmitted Petition Findings for Foreign Species (72 FR 20184), we determined that listing the six seabird species of family Procellariidae, including the two species that are the subject of this final rule, was warranted. In selecting these six species from the list of warranted-but-precluded species, we took into consideration the magnitude and immediacy of the threats to the species consistent with the Service's listing priority guidelines.

On December 17, 2007 (72 FR 71298), we published in the **Federal Register** a proposal to list the Chatham petrel, Fiji petrel and the magenta petrel as endangered species under the Act, and the Cook's petrel (native to New Zealand), Galapagos petrel (native to the Galapagos Islands, Ecuador), and the Heinroth's shearwater (native to Papua New Guinea and the Solomon Islands) as threatened under the Act. We implemented the Service's peer review process and opened a 60-day comment period to solicit scientific and commercial information on the species from all interested parties following publication of the proposed rule.

On December 30, 2008, the Service received a 60-day notice of intent to sue from the Center for Biological Diversity (CBD) over violations of section 4 of the Act and the Administrative Procedure Act (APA) for the Service's failure to issue a final determination regarding the listing of these six foreign birds. Under a settlement agreement approved by the U.S. District Court for the Northern District of California on June 15, 2009 (*CBD* v. *Salazar,* 09–cv–02578–CRB), the Service was required to submit to the **Federal Register** final determinations on the proposed listings of the Chatham petrel, Fiji petrel, and magenta petrel by September 30, 2009, and final determinations on the proposed listings of the Cook's petrel, Galapagos petrel, and Heinroth's shearwater by December 29, 2009.

The Chatham petrel (*Pterodroma axillaris*), Fiji petrel (*Pseudobulweria macgillivrayi*), and the magenta petrel (*Pterodroma magentae*) were listed as endangered on September 14, 2009 (74 FR 46914). This rule addresses two of the remaining three foreign seabird species: the Galapagos petrel, and Heinroth's shearwater. Cook's petrel will be addressed in a separate rule.

Summary of Comments and Recommendations

In the proposed rule published on December 17, 2007 (72 FR 71298), we requested that all interested parties submit information that might contribute to development of a final rule. We received nine comments: Six from members of the public, one from an international conservation organization, one from the U.S. National Marine Fisheries Service (NMFS), and one from the New Zealand Department of Conservation (NZDOC). In all, three commenters supported the proposed listings. Six commenters provided information but did not express support for or opposition to the proposed listings. We reviewed all comments we received from the public and peer reviewers for substantive issues and new information regarding the proposed listing of the two species, and we address those comments below.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from 14 knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occur, and conservation biology principles. We received responses from six of the peer reviewers from whom we requested comments. The peer reviewers generally agreed that the description of the biology and habitat for each species was accurate and based on the best available information. New or additional information on the current population numbers of each of the two species and their threats was provided and incorporated into the rulemaking as appropriate (as indicated in the citations by ''in litt.'').

Peer Reviewer General Comments

Comment 1: While it is generally true that ''once a population is reduced below a certain number of individuals it tends to rapidly decline towards extinction'' without details on what the ''certain'' number of individuals is, this statement is superfluous for these species. For these species the issue is not so much reaching certain low numbers, as whether or not catastrophic threats impacting these species are still ongoing.

Our Response: We concur and have amended this statement in this final rule.

Comment 2: Provide the taxonomic list(s) of birds used to identify the six species.

Our Response: We have added information on taxonomy of each species to this final rule.

Peer Reviewer Species-specific Comments

Galapagos Petrel

Comment 3: The greater threat to this species and its habitat is not goats but rather introduced invasive plants which have caused drastic habitat changes over the last few years.

Our Response: Based on this new information regarding the significance of the threats to the habitat of the Galapagos petrel by nonnative, invasive plants, we have amended our discussion under Factor A (the present or threatened destruction, modification, or curtailment of the habitat or range) for this species in this final rule.

Comment 4: A significant and fairly new threat to the Galapagos petrel is the threat of collisions with structures such as power lines, cellular telephone and other radio towers, and, on Santa Cruz Island, wind power generation systems (particularly large windmills and power transmission lines). Construction of these structures in and near petrel nesting areas and areas where they make their nocturnal courtship flights increases the risk of collision.

Our Response: We have incorporated this new information regarding the threat of collisions with power lines, radio towers, and structures associated with windmills in our Factor E (other natural or manmade factors affecting the continued existence of the species) discussion for this species.

Comment 5: One peer reviewer indicated skepticism of the often cited drastic decreases in Galapagos petrel numbers in the 1980s. The peer reviewer added that there was no known event in that period that could have caused the decline, and that all of the purported causes (agricultural expansion, introduction of predators) had occurred decades before. The peer reviewer believes that most likely the early estimates of pre-1980 petrel populations were overly optimistic (too large) and that starting in the 1980s, the estimates of the number of petrels were more accurate and closer to the actual number of birds (likely due to more surveys and better methods of estimating population numbers). The peer reviewer stated that current estimates of Galapagos petrel numbers are not significantly lower than the estimates of the mid-1980s. If there were a drastic population decline starting in the 1980s it is unlikely it would have suddenly halted, especially with respect to predation, because although the agriculture expansion has not continued, it has not decreased, and the predators have not disappeared from the nesting habitat.

Our Response: We have incorporated this information regarding the population estimates for the Galapagos petrel over the past 28 years in this final rule.

Comment 6: The Galapagos petrel is threatened by predation by introduced rats, cats, pigs, and dogs (in order of significance of impact). The main predator is rats that kill chicks. Cats prey upon all life stages of the species while dogs sometimes prey upon the species during all life stages. Pigs may kill incubating adults by digging up nests, but this is probably less common than predation by other animals.

Our Response: In this final rule, we have amended our discussion under Factor C (disease or predation) regarding the significant predators on the Galapagos petrel, in this final rule.

Comment 7: San Cristóbal Island has a long-standing rat control program in the Galapagos petrel colony.

Our Response: We were not previously aware of this program and have amended our discussion under Factor C (disease or predation) to reflect this new information in this final rule.

Heinroth's Shearwater

Comment 8: The forests of Kolombanagara and Rendova are the potential breeding habitat of Heinroth's shearwater but deforestation is not a threat in the high-altitude forests because logging is commercially unviable in these small-stature forests that are found on steep slopes. Deforestation is a threat to this bird only if it nests at low or mid altitudes.

Our Response: The breeding habitat for Heinroth's shearwater is unknown but is believed to be inland forests. Therefore, we have incorporated this new information regarding the threat from deforestation only in low or mid altitude forests in our discussion under Factor A (present or threatened destruction, modification, or curtailment of the habitat or range) in this final rule.

Other Comments

Comment 9: Listing under the Act provides substantial benefits to foreign species.

Our Response: We agree that listing a foreign species under the Act provides benefits to the species in the form of conservation measures such as recognition, requirements for Federal protection, and prohibitions against certain practices (see Available Conservation Measures). In addition, once a foreign species is listed as endangered under the Act, a section 7 consultation and an enhancement finding are usually required for the issuance of a permit to conduct certain activities. Through various enhancement findings under section 10(a)(1)(A) of the Act, the permit process can be used to create incentives for conservation, through cooperation and consultation with range countries and users of the resource.

Comment 10: Listing under the Act can only help these birds by drawing attention to their needs and providing much needed funding and expertise to address the significant threats they face.

Our Response: We agree with the commenter. Listing the species under the Act that are the subject of this final rule can provide several benefits to the species in the form of conservation measures, such as recognition, requirements for Federal protection, and prohibitions against certain practices (see Available Conservation Measures).

Comment 11: We would encourage the U.S. Fish and Wildlife Service to carefully consider how listing these species under the Act will benefit their conservation. Would listing under the Act prompt U.S.-based actions that the species would otherwise not receive?

Our Response: As part of the conservation measures provided to foreign species listed under the Act (see Available Conservation Measures), recognition through listing results in public awareness and encourages and results in conservation actions by Federal and State governments, private agencies and groups, and individuals. In addition, section 8(a) of the Act authorizes the provision of limited financial assistance for the development and management of programs that the Secretary of the Interior determines to be necessary or useful for the conservation of endangered and threatened species in foreign countries. Sections 8(b) and 8(c) of the Act authorize the Secretary to encourage conservation programs for foreign endangered and threatened species and to provide assistance for such programs in the form of personnel and the training of personnel.

Comment 12: The general statement that the ''long-line fishery * * * is the single greatest threat to all seabirds'' erroneously indicates long-line fishing as a threat to *all* seabirds. The main species of seabirds killed in long-line fisheries are albatrosses and other species of petrels (not *Pterodroma* species). The characteristics of a petrel species vulnerable to long-line fishing (seabird that is aggressive and good at seizing prey (or baited hooks) at the water's surface, or is a proficient diver) do not describe the five *Pterodroma* species or the Heinroth's shearwater that were proposed for listing under the Act. Fisheries bycatch has not been identified as a key threat for any of these species; thus it is inaccurate to characterize long-line fishing as a threat to these species or to all seabird species.

Our Response: We received several comments disputing our statement that long-line fisheries threaten all seabirds, and Galapagos petrel and the Heinroth's shearwater in particular. We have amended our final rule accordingly (see Summary of Factors Affecting the Galapagos Petrel and Summary of Factors Affecting the Heinroth's Shearwater).

Comment 13: The serious threats to the species are impacts due to extremely small populations, limited breeding locations or foraging ranges, loss and degradation of nesting habitat, invasive alien species, introduced predators, and hunting.

Our Response: We agree that the Galapagos petrel and the Heinroth's shearwater are threatened by extremely small populations, limited breeding sites, degradation and destruction of nesting habitat, or nonnative species and have incorporated this information

into this final rule. However, we are unaware of any information that indicates the Galapagos petrel or Heinroth's shearwater currently face threats from human hunting or overcollection.

Comment 14: The primary threat to these species is predation by introduced predators particularly at breeding colonies.

Our Response: We agree that predation by nonnative predators is a significant threat to one or more life stages of the Galapagos petrel and the Heinroth's shearwater and we have incorporated this information into this final rule.

Species Information and Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act. The five factors are: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of the above threat factors, singly or in combination.

Both species are considered pelagic, occurring on the open sea generally out of sight of land, where they feed year round. They return to nesting sites on islands during the breeding season where they nest in colonies (Pettingill 1970, p. 206).

Foreseeable Future

Although section 3 of the Act uses the term ''foreseeable future'' in the definition of a threatened species, it does not define the term. For purpose of this rule, we define foreseeable future to be the extent to which, given the amount and quality of available data, we can anticipate events or effects, or extrapolate trends of a threat, such that reliable predictions can be made concerning the future of the species. In the analyses of the five factors below, we consider and describe how the foreseeable future relates to the status and threats to these species.

Below is a analysis of the five factors by species.

I. Galapagos Petrel (Pterodroma phaeopygia)

Species Information

The Galapagos petrel (*Pterodroma phaeopygia*), previously referred to as (*Pterodroma phaeopygia phaeopygia*), is a large, long-winged gadfly petrel that is endemic to the Galapagos Islands, Ecuador (BLI 2009, unpaginated). They have variable amounts of black markings on a white forehead. The species was first taxonomically described by Salvin in 1876 (Sibley and Monroe 1990, p. 323).

Habitat, Range, and Life History

The Galapagos petrel is endemic to the Galapagos Islands and breeds on Santa Cruz, Floreana, Santiago, San Cristóbal, Isabela, and possibly other islands in the archipelago covering a total land area of 2,680 mi^2 (6,942 km^2) (Cruz and Cruz 1987, pp. 304–305; Vargas and Cruz *in litt.* 2000, as cited in BLI 2009; Harris 1970, pp. 76–77). The species breeds in the humid and thickly vegetated uplands of these islands (Harris 1970, p. 76) at elevations between 984 and 2,953 ft (300 and 900 m) (Baker 1980, as cited in BLI 2000; Cruz and Cruz 1987, pp. 304–305; 1996, p. 27). The species prefers to nest under thick vegetation in sufficient soil for burrowing (Harris 1970, pp. 78, 82). The species is known to nest within burrows or natural cavities on slopes, in craters, in sinkholes, in lava tunnels, and in gullies (Baker 1980, as cited in BLI 2000; Cruz and Cruz 1987, pp. 304–305; 1996, p. 27).

Birds have been observed foraging near the Galapagos Islands, as well as east and north of the islands towards South America up to 1,243 mi (2,000 km) south (Spear *et al.* 1995, p. 627).

Population Estimates

In our December 17, 2007, proposal (72 FR 71298), we reported that the total population of Galapagos petrels was estimated to be between 20,000 and 60,000 birds (BLI 2007, unpaginated). However, in 2009 BLI updated the estimate, and now estimates the total population to be between 10,000 and 19,999 birds with a decreasing population trend (BLI 2009, unpaginated).

Conservation Status

The IUCN classifies the Galapagos petrel as ''Critically Endangered'' with a decreasing population trend (BLI 2009, unpaginated). The species is not listed on any CITES Appendices (*http://www.cites.org*).

Summary of Factors Affecting the Galapagos Petrel

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

Similar to other Procellariid species, the range of the Galapagos petrel changes intra-annually based on an established breeding cycle. During the breeding season, breeding birds return to breeding colonies to breed and nest. During the nonbreeding season, birds migrate far from their breeding range where they remain at sea until returning to breed. Therefore, our analysis of Factor A is separated into analyses of: (1) The species' breeding habitat and range, and (2) The species' non-breeding habitat and range.

BLI (2009, unpaginated) estimates the range of the Galapagos petrel to be 5,483,000 mi^2 (14,200,000 km^2); however, BLI (2000) defines ''range'' as the ''Extent of Occurrence, the area contained within the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred, or projected sites of present occurrence of a species, excluding cases of vagrancy.'' Because this reported range includes a large area of non-breeding habitat (i.e., the sea), our analysis of Factor A with respect to the Galapagos petrel's breeding range focuses on the islands where the species breeds.

The primary threats to the Galapagos petrel's breeding habitat are degradation and destruction of breeding habitat by introduced invasive plants, clearing of land for agricultural expansion, and nonnative feral mammals, such as domesticated goats (*Capra hircus*), pigs (*Sus scrofa*), donkeys (*Equus asinus*), and cattle (*Bos taurus*). Nonnative invasive plants on some islands create dense thickets that the petrel is not able to penetrate. Nonnative ungulates (goats, pigs, donkeys, and cattle) trample and destroy Galapagos petrel nest-sites and reduce breeding habitat by overgrazing (e.g., goats) and uprooting the vegetation (e.g., pigs) (Cruz and Cruz 1987, pp. 304–305, 1996, p. 25; Eckhardt 1972, p. 588; Wiedenfeld, in litt. 2008, unpaginated).

Clearing of Land for Agricultural Expansion

In 1959, Ecuador designated 97 percent of the Galapagos land area as a National Park, leaving 3 percent of the remaining land area distributed between Santa Cruz, San Cristóbal, Isabela, and Floreana Islands. The park land area is divided into various zones signifying the level of human use (Parque Nacional Galapagos Ecuador N.D., unpaginated).

Although the islands where the Galapagos petrel is known to breed include a large ''conservation and restoration'' zone, all of these islands, except Santiago, include a significant-sized 'farming' zone (Parque Nacional Galapagos Ecuador N.D. unpaginated), where agricultural and grazing activities continue to threaten some petrel nesting sites (Wiedenfeld, *in litt.* 2008, unpaginated). According to Baker (1980, as cited in BLI 2000), at least half of the Galapagos petrel's current breeding range on Santa Cruz Island is farmed. The rationale for maintaining farming zones within the Galapagos National Park is to sustain the economy of island inhabitants, encourage local consumption of traditional products (e.g., vegetables, fruits, and grazing animals), and decrease the amount of imported food, thereby reducing the threat of inadvertent introduction of nonnative species (Parque Nacional Galapagos Ecuador N.D. Plan de Control Total N.D. cited in Wiedenfeld, *in litt.* 2008, unpaginated).

On the island of Santa Cruz, the Galapagos petrel historically bred at lower elevations, down to 591 ft (180 m). However, habitat modification of these lower elevations for agricultural purposes has restricted the Galapagos petrel's use of these lower elevation areas for breeding although some areas are still used for nesting (Valarezo 2006 cited in Wiedenfeld, *in litt.* 2008, unpaginated). On San Cristóbal Island, historical clearance of vegetation in highland areas for intensive grazing purposes drastically reduced the species' breeding habitat on the island (Harris 1970, p. 82).

Introduced Invasive Plants

Nonnative invasive plants are a significant threat to the Galapagos petrel through habitat modification and destruction. Nonnative plants adversely impact petrel breeding habitat by modifying or altering several microhabitat conditions such as availability of light, soil-water regimes, and nutrient cycling leading to competition with native plants or direct inhibition of native plants; and ultimately converting plant communities dominated by native species to nonnative plant communities (Tye, N.D., p. 4). *Rubus niveus* (hill raspberry), a species of raspberry native from India to southeastern Asia, the Philippines, and Indonesia, is the worst invader of the nonnative species of *Rubus* in the Galapagos Islands (Charles Darwin Foundation (CDF), N.D.a, unpaginated), and is classified as a noxious weed in Hawaii (Hawaii Administrative Rules 1992). In the Galapagos Islands, hill raspberry grows in nesting areas in thick mats that are impenetrable by Galapagos petrels (Wiedenfeld, *in litt.* 2008, unpaginated). This nonnative plant is found on all of the islands (Floreana, Isabela, San Cristóbal, and Santa Cruz) used by the Galapagos petrel for breeding except Santiago Island (Wiedenfeld, *in litt.* 2008, unpaginated). Eradication of hill raspberry on San Cristóbal and Santa Cruz is not possible because hill raspberry is well-established and widespread on these islands (CDF, N.D.a, unpaginated) and thus eradication is cost prohibitive. It is not known if there are control or eradication programs for this species on Floreana or Isabela Islands.

There are two other noteworthy nonnative plant threats, Cinchona pubescens (red quinine tree) and two species of *Lantana* (lantana). Red quinine tree is native from Andean South America north to Costa Rica, and is characterized by vigorous growth, reproduction, and extremely rapid invasion (CDF N.D.b, unpaginated). Introduced in 1946 in the agricultural zone of Santa Cruz Island, red quinine tree has spread into all of the highland vegetation zones and covers more than 29,652 ac (12,000 ha) (CDF N.D.b, unpaginated). This nonnative invader is significantly changing native plant communities in the highlands of Santa Cruz from low open scrub and grasslands to closed forest canopy (Buddenhagen *et al.* 2004, p. 1195; CDF, N.D.b, unpaginated), and has been identified as a threat to the highland habitat of the Galapagos petrel (Wiedenfeld, *in litt.* 2008, unpaginated). According to Tye (N.D., p. 12) there is strong support by both conservationists and farmers to eradicate red quinine tree (Tye N.D., p. 12).

Beginning in 1998, the Charles Darwin Foundation has supported research studies on red quinine tree's ecology and invasion dynamics, its impacts on native vegetation, and potential control methods (Buddenhagen *et al.* 2004, pp. 1198, 1200–1201; CDF N.D.b, unpaginated). An effective combination of control techniques was identified in 2003, and a long-term management plan is being developed for its possible eradication on Santa Cruz (Buddenhagen *et al.* 2004, p. 1201; CDF N.D.b, unpaginated). Lantana (*Lantana camara* and *L. montevidensis* (CDF N.D.c, unpaginated)), probably native to the West Indies (Wagner *et al.* 1999, p. 1320), was introduced to Floreana about 70 years ago, and has been identified as the single worst invasive species on the island (Tye N.D., p. 6). More recently, *L. camara* has been introduced to other islands, including Santa Cruz in 1985, where repeated control efforts have limited its spread on those islands (Tye N.D., p. 6). Lantana is a shrub that forms dense, impenetrable thickets and prevents the growth of other herbaceous or woody species (Tye N.D., p. 5; Wagner *et al.* 1999, p. 1320). It is unknown if there are control or eradication programs for this species on Floreana. In addition, there are a number of nonnative plants on Santiago, which was formerly inhabited, however, no information is available to identify whether these species impact Galapagos petrel nesting sites on this island (Tye N.D., p. 3).

Introduced Feral Mammals

In 1997, the Galapagos National Park Service (GNPS) and the CDF initiated ''Project Isabela,'' an ecological restoration program that required removal of all feral goats from Santiago and northern Isabela. In 2006, the program was found to be successful. The GNPS announced that no feral goats could be found in these areas, noting that monitoring efforts would continue to ensure successful eradication (Charles Darwin Research Station (CDRS) 2006, unpaginated). Concurrent with the goat eradication program, feral donkeys were removed from Santiago Island and Alcedo Volcano on northern Isabela Island (Carrion *et al.* 2007, p. 440). After a 30-year eradication program, feral pigs were successfully removed from Santiago Island; the last pig was shot in April 2000 (Cruz *et al.* 2005, p. 476).

Despite the success of these eradication efforts, introduced ungulates continue to threaten Galapagos petrel habitat on the human populated islands of Santa Cruz, Floreana, San Cristóbal, and southern Isabela, particularly in areas bordering farmland. Eradication programs for feral livestock in areas containing human populations is difficult (CDRS 2006, unpaginated). However, according to the Galapagos Conservancy (N.D., unpaginated), funding has been sought for eradication of feral goats on Floreana and San Cristóbal Islands and for a goat control program on Santa Cruz Island beginning in 2008 or 2009.

Summary of Factor A

In summary, nonnative invasive plants have been identified as significantly impacting the breeding habitat of the Galapagos petrel primarily by altering the habitat and overgrowing the nesting sites, or by creating dense, impenetrable thickets (hill raspberry and lantana). The most significant nonnative plant threats to the Galapagos

petrel are hill raspberry, red quinine tree and lantana. Galapagos petrel habitat is threatened on Floreana by hill raspberry and lantana; on Isabela by hill raspberry; on San Cristóbal by hill raspberry; and, on Santa Cruz by hill raspberry, red quinine tree, and lantana (Wiedenfeld, *in litt.* 2008, unpaginated). Although nonnative plants occur on Santiago Island, there is no information identifying nonnative plant threats to Galapagos petrel habitat there. Agricultural expansion and nonnative feral ungulates on the human populated islands of Floreana, San Cristóbal, Santa Cruz, and southern Isabela also destroy habitat of the Galapagos petrel.

Therefore, we find that the present or threatened destruction, modification, or curtailment of this species' breeding habitat by agricultural expansion, nonnative plants, and feral ungulates is a threat to the species on the islands of Santa Cruz, Floreana, San Cristóbal, and Isabela now and in the foreseeable future. On Santiago Island, based on the best available scientific and commercial information, we find that the present or threatened destruction, modification, or curtailment of this species' breeding habitat by agricultural expansion, and feral ungulates is a threat to the species now and in the foreseeable future.

The Galapagos petrel's range at sea is poorly known; however, research has documented foraging behavior near the Galapagos Islands, as well as east and north of the islands. We are unaware of any present or threatened destruction, modification, or curtailment of this species' current sea habitat or range now or in the foreseeable future.

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

We are unaware of any commercial, recreational, scientific, or educational purpose for which the Galapagos petrel is currently being utilized. Therefore, we find that overutilization for commercial, recreational, scientific, or educational purposes is not a threat to the Galapagos petrel in any portion of its range now and in the foreseeable future.

C. Disease or Predation

The threat of predation on the Galapagos petrel is exemplified by the rapid decline of populations of this species in the early 1980s as a result of predation by introduced species, such as black and brown rats, cats, pigs, and to a lesser extent, dogs (*Canis lupus familiaris*) (BLI 2009, unpaginated; Cruz and Cruz 1996, p. 23). In some cases, these population declines were as high as 81 percent over 4 years (BLI 2009, unpaginated). Between 1980 and 1985, the population on Santa Cruz Island declined from an estimated 9,000 pairs to 1,000 pairs (Baker 1980, as cited in BLI 2009, unpaginated; Cruz and Cruz 1987, p. 9). During the same time period, the Santiago Island population declined from 11,250 pairs to less than 500 pairs (Cruz and Cruz 1987, p. 12; Tomkins 1985, as cited in BLI 2000), and the number of birds breeding on Floreana Islands was estimated to have been reduced by up to 33 percent annually for 4 years (Coulter *et al.* 1981, as cited in BLI 2009, unpaginated).

While the above-cited sources report drastic decreases in Galapagos petrel numbers in the 1980s, one peer reviewer of our December 17, 2007, proposed rule (72 FR 71298) questioned the reported population declines. According to the reviewer, there was no known event during that decade that could have caused the declines. Agricultural expansion and the introduction and expansion of predators had occurred decades previously, and while Galapagos petrels are long-lived and a factor from decades before might have shown up as a collapse in the adult population much later, the reviewer thought it was unlikely. According to the peer review, pre-1980 population estimates were overly optimistic and that estimates starting in the 1980s were more accurate (Wiedenfeld, *in litt.* 2008, unpaginated). According to the reviewer, current estimates are not much lower than the numbers from the mid-1980s, and it is unlikely that the ''drastic declines'' seen in the 1980s would have halted 20 years later, considering the ongoing threats to the petrel from predation and habitat degradation and destruction (Wiedenfeld, *in litt.* 2008, unpaginated).

Rats (both black and brown) are the most significant predator of the Galapagos petrel; they eat both the eggs and chicks (Wiedenfeld, *in litt.* 2008, unpaginated). Introduced feral cats, pigs, and dogs all prey on one or more life stages (eggs, chicks, fledglings, and adults) of the Galapagos petrel (Cruz and Cruz 1987, p. 304; 1996, pp. 23–24). Predation of adult Galapagos petrels by the Galapagos hawk (*Buteo galapagoensis*) was reported by Tompkins (1985, p. 12) and later cited in Cruz and Cruz (1987, p. 305; 1996, p. 24) and BLI (2009). However, because Galapagos hawks are diurnal predators and Galapagos petrels fly at night, this information is questionable (Wiedenfeld, *in litt.* 2008, unpaginated). The short-eared owl (*Asio flammeus*) and the common barn owl (*Tyto alba*) may hunt Galapagos petrels more commonly than the Galapagos hawk because both predators are nocturnal and both occur in the Galapagos Islands (Wiedenfeld, *in litt.* 2008, unpaginated).

Predator control programs geared towards nonnative species and petrel monitoring programs are currently in place on Floreana, Santa Cruz, and Santiago Islands (Vargus and Cruz 2000, as cited in BLI 2009, unpaginated; Guo 2006, p. 1597). Eradication efforts to remove feral pigs, which eat nestlings, juvenile, and adult petrels on Santiago Island, succeeded by the end of 2000 (Cruz *et al.* 2005, pp. 476–477; Galapagos National Park N.D., unpaginated). Recolonization of pigs on Santiago Island is not likely since the island is not inhabited by humans, and there are no farming zones on the island where pigs could be placed. In addition, complete ecological recovery of Santiago Island is a primary objective of Galapagos National Park, so monitoring and maintaining a pig-free island is of high priority (Galapagos National Park N.D., unpaginated). However, predation by introduced rats and cats continues to pose a threat to Galapagos petrels on Santiago Island, where efforts are underway to remove introduced rats, but there is no information to indicate that eradication has been achieved (Galapagos National Park N.D., unpaginated). On Isabela, National Park rangers have set out traps and poison for rats, and, as of 2006, were planning rat control on Floreana Island (Guo 2006, p. 2); BLI (2009) reports that there is a program of rat baiting around known petrel colonies on Floreana (Vargas and Cruz, *in litt.* 2000 cited in BLI 2009). In addition, Guo (2006, p. 2) reported that control of feral cats would begin in 2007, although no island was specified. According to Wiedendfeld (in litt. 2008, unpaginated), there is a long-term rat control program in Galapagos petrel colonies on San Cristóbal Island (Cruz cited in Wiedenfeld, *in litt.* 2008, unpaginated).

Although pigs were removed from Santiago Island, they continue to threaten the Galapagos petrel on the other 4 islands where the petrel is known to breed. Predation, primarily by rats and cats, continues to threaten the Galapagos petrel on Floreana and Santa Cruz Islands. Predator control efforts have been initiated on these two islands and are beginning to show some success in reducing the threat to Galapagos petrels. For example, prior to predator control efforts on Floreana Island, only 33 percent of the banded Cerro Pajas colony of the Galapagos petrel population returned to breed and nest as adults (Coulter *et al.* 1982, as cited in Cruz and Cruz 1990a, p. 323). In 1982, predator control was initiated on this

island (Cruz and Cruz 1990a, p. 317), and by 1985, return rates for banded birds was 80 to 90 percent due to the predator control program (Cruz and Cruz 1990a, p. 323). To emphasize the significance of such a reduction in predation on adults with respect to petrel population growth, the Hawaiian dark-rumped petrel (*Pterodroma sandwichensis*), a species related to the Galapagos petrel, exhibited a 5 percent annual decline in its population size when adult survival rates were reduced as low as 10 percent (Simons 1984, p. 1073).

There is no information to indicate that predator control efforts have been successfully implemented on San Cristóbal Island or Isabela Island where rats, cats, and pigs continue to threaten the species; and these threats are likely to continue in the foreseeable future.

Summary of Factor C

In summary, while several diseases have been documented in other species of petrels, disease has not been documented in the Galapagos petrel. Therefore, for the reasons described above, we do not find that disease is a threat to this species currently or in the foreseeable future.

While the species is at sea during the nonbreeding season, we are unaware of any threats due to predation on Galapagos petrels. However, predation by introduced mammalian species causes mortalities at all life stages of the Galapagos petrel while on land. Rats are a significant threat because they eat eggs and chicks. Feral cats, in particular, and to a lesser extent dogs also threaten Galapagos petrels by eating eggs and killing chicks, juveniles, and adult birds. Pigs may kill nestlings, juveniles, and some adult birds by digging up a nest while the adult is incubating but this is much less common than predation by rats and cats (Wiedenfeld, *in litt.* 2008, unpaginated). There are predator control programs for rats on Isabela, San Cristóbal, and Santiago Islands and, as of 2006, a program was planned on Floreana Island. However, there is no information to indicate that rat eradication has been achieved on any of these islands, and there is no information to indicate that there is a rat control program on Santa Cruz. According to Guo (2006, p. 2), a control program for feral cats was planned for 2007. There is no information to indicate that feral cats have been eradicated on any of the islands or in any of the petrel breeding sites. Pigs have been removed from Santiago and northern Isabela Islands but are still a threat to Galapagos petrels on Floreana, Santa Cruz, southern Isabela, and San Cristóbal Islands (Wildlife Extra 2006, unpaginated). There is no information on predator control efforts for dogs on any of the islands where Galapagos petrels breed. The threat of predation has been shown to result in rapid population declines in the past and this threat is likely to continue in the foreseeable future due to the inability of predator control efforts to adequately eradicate these predators. Therefore, we find that predation is a threat to the Galapagos petrel throughout all or a significant portion of its range now and in the foreseeable future.

D. The Inadequacy of Existing Regulatory Mechanisms

As previously mentioned, several commenters disputed our statement in the proposed rule that long-line fisheries threaten all seabirds and in particular, the Galapagos petrel, and Heinroth's shearwater. According to the U.S. National Marine Fisheries Service (NMFS) and BirdLife International (BLI 2009, unpaginated), the seabirds killed in long-line fisheries are predominantly albatrosses and other species of petrels (not *Pterodroma* species). The characteristics of a petrel species vulnerable to long-line fishing (seabird that is aggressive and good at seizing prey (or baited hooks) at the water's surface, or is a proficient diver) do not describe the *Pterodroma* species. Although we are unaware of any documented cases of incidental take of Galapagos petrels by commercial long-line fishing operations or entanglement in marine debris, long-line fishing operations in the eastern Pacific Ocean have been identified as a potential threat to the Galapagos petrel (BLI 2009, unpaginated). In particular, long-line fishing in the Galapagos Marine Reserve was suggested as a factor in affecting foraging birds (BLI 2009, unpaginated). In 2004, fishermen seized Galapagos National Park headquarters and a scientific research station to demand, among other things, permission to use long-line fishing in the Galapagos Marine Reserve. To end the standoff, the government of Ecuador agreed to review the rules regarding the Galapagos Marine Reserve (New York Times 2004, unpaginated). A separate report published in the same year described the illegal long-lines as ''crisscross[ing]'' the reserve ''like spider webs'' (Hile 2004, unpaginated). However, there is no information indicating that, subsequent to 2004, commercial long-line fishing is permitted in the Galapagos Marine Reserve or that Galapagos petrels have been injured or killed by long-line fishing operations in the Marine Reserve or elsewhere in the eastern Pacific Ocean. Therefore, based on the best available information regarding the threat of long-line fishing on the Galapagos petrel, we are not able to determine the significance of this threat to this bird.

The first legislation to specifically protect the Galapagos Islands and its wildlife and plants was enacted in 1934 and further supplemented in 1936, but effective legislation was not passed until 1959, when the Ecuadorian government passed new legislation declaring the islands a National Park (Fitter *et al.* 2000, p. 216; Jackson 1985, pp. 7, 230; Stewart 2006, p. 164).

The Galapagos Islands were declared a World Heritage Site (WHS) under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1978 (UNESCO World Heritage Centre n.d.(a)), as they were recognized to be ''cultural and natural heritage of outstanding universal value that needs to be protected and preserved'' (UNESCO World Heritage Centre n.d.(b)). The aim of establishment as a WHS is conservation of the site for future generations (UNESCO World Heritage Centre 2008). However, in June 2007, due to threats to this site posed by introduced invasive species, increasing tourism, and immigration, the World Heritage Committee placed the Galapagos on the ''List of World Heritage in Danger.'' This is intended to increase support for their conservation (UNESCO World Heritage Centre News 2007a). In March 2008, the UNESCO World Heritage Centre/United Nations Foundation project for invasive species management provided funding of $2.19 million U.S. (USD) to the Ecuadorian National Environmental Fund's ''Galapagos Invasive Species'' account to support invasive species control and eradication activities on the islands (UNESCO World Heritage Centre News 2008). In addition, the Ecuador government previously had contributed $1 million USD to this fund (UNESCO World Heritage Centre News 2008), demonstrating the government of Ecuador's commitment to reducing the threat of invasive species to the islands.

Ecuador designated the Galapagos Islands as a National Park and the islands were declared a World Heritage Site in 1979 (BLI 2009, unpaginated). In the 1990s, overall fishing pressure in the waters around the Galapagos Islands increased rapidly and led in 1998 to establishment of the Galapagos Marine Reserve (Bustamante *et al.* 2000, p. 3), which is a legally protected area. The reserve boundaries are 40 nautical mi from the outermost points of land of the archipelago, and protected within those

boundaries are almost all of the ecologically important nutrient-rich areas for wide-ranging species, including seabirds (Bustamante *et al.* 2000, p. 3). The Law of the Special Regimen for the Conservation and Sustainable Development of the Province of the Galapagos, has given the islands some legislative support to establish regulations related to the transport of introduced species and implement a quarantine and inspection system (Causton *et al.* 2000, p. 10; Instituto Nacional Galápagos n.d.; Smith 2005, p. 304). Large-scale industrial fishing is banned in the marine reserve, although local or artisanal fishing is permitted (Charles Darwin Foundation N.D.d, unpaginated).

In 1999, the Inspection and Quarantine System for Galapagos (SICGAL) was implemented (Causton *et al.* 2006, p. 121) with the aim of preventing introduced species from reaching the islands (Causton *et al.* 2000, p. 10; Charles Darwin Foundation n.d.d, unpaginated). Inspectors are stationed at points of entry and exit in the Galapagos Islands and Continental Ecuador, where they check freight and luggage for permitted and prohibited items (Charles Darwin Foundation n.d.d, unpaginated). The goal is to rapidly contain and eliminate newly arrived species (detected by SICGAL and early warning monitoring programs) that are considered threats for the Galapagos Islands (Causton *et al.* 2006, p. 121). However, a scarcity of information on alien insect species currently in the Galapagos Islands prevents officials from knowing whether or not a newly detected insect is in fact a recent introduction (Causton *et al.* 2006, p. 121). Without the necessary information to make this determination, they cannot afford to spend the time and resources on a rapid response when the ''new introduction'' is actually a species that already occurs elsewhere in the Galapagos Islands (Causton *et al.* 2006, p. 121).

The April 2007 World Heritage Centre—IUCN monitoring mission report assessed, based on information gathered during their monitoring mission and multiple meetings, the state of conservation in the Galapagos Islands and found continuing problems (UNESCO World Heritage Centre 2007). The UNESCO World Heritage Centre indicated that there is a continuing lack of political will, leadership, and authority, and it is a limiting factor in the full application and enforcement of the Special Law for Galapagos (2007). They also reported that there appears to be a general lack of effective enforcement (UNESCO World Heritage Centre 2007).

At the same time, the risk from invasive species is rapidly increasing, while the Agricultural Health Service of Ecuador (SESA) and SICGAL have inadequate staff and capacity to deal with the nature and scale of the problem (UNESCO World Heritage Centre 2007). SICGAL estimates that 779 invertebrates [interpreted as 779 individuals] entered the Galapagos Islands via aircraft in 2006 (UNESCO World Heritage Centre 2007). In addition, the staff of the Galapagos National Park lacks the capacity and facilities for effective law enforcement (UNESCO World Heritage Centre 2007).

Previous UNESCO–IUCN Galapagos mission reports (in 2005 and 2006) to the World Heritage Committee have consistently outlined major threats to the long-term conservation of the Galapagos Islands, including the introduction of nonnative plant and animal species, and the inability to apply laws (UNESCO World Heritage Centre News 2007b). UNESCO World Heritage Centre reports that despite an excellent legal framework, national government institutions encounter difficulties in ensuring its full application (UNESCO World Heritage Centre News 2007b).

Summary of Factor D

In summary, Ecuador has developed numerous laws and regulatory mechanisms to administer and manage wildlife in the Galapagos Islands. Additional regulations have created an inspection and quarantine system in order to prevent the introduction of non-native species. However, this program does little to eradicate nonnative species already introduced to the Galapagos Islands. The impacts to the species are likely to increase in the foreseeable future due to the lack of effective laws and regulatory mechanisms that are implemented in the Galapagos Islands. Therefore, we find that the existing regulatory mechanisms currently in place are inadequate to address the threats from loss of habitat and predation due to nonnative species throughout all or a significant portion of its range now and in the foreseeable future.

E. Other Natural or Manmade Factors Affecting the Continued Existence of the Species

Oil and chemical spills can have direct effects on Galapagos petrel populations, and based on previous incidents, although rare incidences, we consider these to be a significant threat to the species. For example, on January 16, 2001, a tanker ran aground at Schiavoni Reef, about 2625 ft (800 m) from Puerto Baquerizo Moreno on San Cristóbal Island (Woram 2007, unpaginated). By January 28, 2001, the slick reached the islands of Isabela and Floreana. Only one Galapagos petrel from Cristóbal Island is documented to have died; however, 370 large animals were reported to be contaminated by oil and 62 percent of the marine iguanas on Santa Fe Island died within a year of after the oil spill occurred (Wikelski, 2002, p. 607). The total effect of the oil spill on Galapagos petrels and other species is difficult to quantify for a variety of reasons. However, due to the behavior of ocean-dependent species and the high toxicity of diesel, many affected petrels might have died and sunk undetected. In addition, the effects of oiling may be highly localized, and given the vastness of the Galapagos coastline, this could make detection unlikely. Because the long-term effects of oiling were not monitored, the total mortality from this event is likely underestimated (Lougheed *et al.* 2002, unpaginated). Oil and chemical spill events are likely to occur again in this species' habitat. Therefore, we find that oil and chemical spills are a threat to the Galapagos petrel in its nonbreeding (marine) habitat now and in the foreseeable future.

A recent but potentially significant threat to the Galapagos petrel is the threat of collisions with structures such as power lines, and cellular telephone and other radio towers (Cruz Delgado and Wiedenfeld 2005, cited in BLI 2009; Wiedenfeld, *in litt.* 2008, unpaginated). Rapid growth of the human population on Floreana, San Cristóbal, Santa Cruz, and southern Isabela Islands may lead to the proliferation of new power lines and cellular telephone structures. Many bird species, including seabirds such as the Newell's shearwater on Kauai in the Hawaiian Islands, are known to strike objects such as antennas, guy wires, light poles, transmission lines, wind turbines, communication towers, and other tall objects. Bird kills caused by towers and related structures have been documented for over 50 years (Kerlinger 2000, pp. 4, 26; Manville 2005, pp. 1051–1061; Podolsky *et al.* 1998 abstract only; Shire *et al.* 2000, p. 3). A proposed project to construct wind generators on Baltra Island and extend power lines across Santa Cruz Island to the town of Puerto Ayora may significantly increase adult petrel mortality from collisions with transmission lines and associated structures (e.g., posts) (Wiedenfeld, *in litt.* 2008, unpaginated). Therefore, we consider collisions with power lines,

cellular telephone and other radio towers, and large wind turbines to be a significant threat to the species throughout all of its range now and in the foreseeable future.

Barbed wire fences on agricultural lands cause mortality in adult Galapagos petrels (BLI 2009a). With the exception of Santiago Island, agricultural lands are present throughout the species' breeding range. Although there is no information available regarding the numbers and trends of mortality due to fences, this source of mortality in combination with other threats from collisions with structures and chemical and oil spills poses a significant risk to the survival of the species on all islands in its breeding range except Santiago.

There is evidence that the productivity of Galapagos petrel populations is indirectly affected by fluctuations in ocean temperatures and currents, which impact the Galapagos petrel's prey base. During the El Niño-Southern Oscillation (ENSO) of 1982–1983, Cruz and Cruz (1990b, p. 160) found that the growth rate of Galapagos petrel chicks was lower and fledging occurred later than in other years. These so-called ''ENSO chicks'' reached a lower peak mass at a later age than non-ENSO chicks. The extended nestling period and reduced growth rates of ENSO chicks are believed to reflect a decline in the availability of food resources because of diminishing ocean productivity during the ENSO. Limited to no information is available on the long-term effect on petrel population productivity due to the change in ocean temperatures and currents. Based on the best available scientific and commercial information available, we determine that this is not a threat to the Galapagos petrel.

Summary of Factor E

Rapid growth of the human population on Floreana, San Cristóbal, Santa Cruz, and southern Isabela Islands has lead to an increase in manmade threats such as oil and chemical spills, collisions with communications and energy-related structures (such as transmission lines and cellular telephone and radio towers), and collisions with barbed wire fences on agricultural lands. These threats are continuing to impact the Galapagos petrel; there is no indication that they are likely to decrease in the foreseeable future. Therefore, we find that the other natural or manmade factors discussed above threaten the Galapagos petrel throughout all or a significant portion of its range now and in the foreseeable future.

Conclusion and Determination for the Galapagos Petrel

Section 3 of the Act defines an endangered species as ''any species which is in danger of extinction throughout all or a significant portion of its range'' and a threatened species as ''any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The Galapagos petrel is currently affected by a variety of threats across its entire geographic range. As we have not yet observed the extirpation of local populations or recent steep declines in the abundance of the species, we do not believe the status of the species is such that it is presently in danger of extinction throughout all or a significant portion of its range. Therefore, we do not believe this species meets the definition of an endangered species. We can, however, reasonably anticipate the impacts of the threats on this species rangewide, and we believe those threats acting in combination are likely to result in the species becoming endangered within the foreseeable future.

We have carefully assessed the best available scientific and commercial information regarding the past, present, and potential future threats faced by the Galapagos petrel. In the 1980s, the Galapagos petrel was reported to have declined as much as 81 percent in 4 years due primarily to predation by introduced predators. However, as discussed above (see Factor C) there is some question regarding the accuracy of the drastic decreases in Galapagos petrel numbers reported in the 1980s (Wiedenfeld, *in litt.* 2008). According to BLI (2009a), conservation efforts have slowed but not halted the population decline. Regardless, the population is currently estimated to be between 10,000 and 19,999 birds with a decreasing population trend (BLI 2009a).

Threats to this species include predators such as rats, cats, and goats, clearing for agriculture, and invasive plants such as *Cinchona pubescens* (particularly on Santa Cruz island), *Lantana* sp. (particularly on Floreana island), and *Rubus niveus* on Santa Cruz, Floreana, San Cristóbal, and Isabela Islands. The Galapagos petrel's breeding habitat is threatened by introduced species, by feral mammals on the islands of Floreana, San Cristóbal, Santa Cruz, and southern Isabela by invasive plants on all islands within its range; and by agricultural expansion (Factor A). Despite predator control efforts, the Galapagos petrel continues to be threatened by one or more predators on all of the islands within the species' breeding range (Factor C). Collisions with communications and energy-related transmission lines and structures by Galapagos petrels as they fly between their nesting colonies and the ocean are a significant threat to this species throughout its range (Factor E). Barbed wire fences are reported to pose a threat to Galapagos petrels in agricultural lands on the islands of Floreana, San Cristóbal, Santa Cruz, and southern Isabela (Factor E). In addition, we have determined that the inadequacy of existing regulatory mechanisms to reduce or remove these threats is a contributory factor to the risks that threaten this species' continued existence (Factor D). These factors are likely to continue into the foreseeable future.

The threats within the species' breeding range are compounded by the threats to the species within its range at sea. Oil spills can have direct effects on Galapagos petrel populations, and based on the occurrence of a previous incident within the species' range at sea, we consider this a significant threat to the species (Factor E). Because the survival of this species is dependent on recruitment of chicks from its breeding range, the threats to this species within its breeding range puts the species at risk.

The overall population number of the Galapagos petrel is estimated at 10,000 to fewer than 19,999 birds (BLI 2009). As a result, the species does not currently appear to be in danger of extinction throughout all or a significant portion of its range. However, based on the best scientific and commercial data available, we find that the Galapagos petrel is likely to become in danger of extinction within the foreseeable future throughout all or a significant portion of its range. Therefore, we have determined that the Galapagos petrel meets the definition of a threatened species throughout all of its range under the Act.

Significant Portion of the Range Analysis

Having determined that the Galapagos petrel is likely to become in danger of extinction within the foreseeable future throughout all of its range, we also considered whether there are any significant portions of its range where the species is currently in danger of extinction.

The Act defines an endangered species as one ''in danger of extinction throughout all or a significant portion of its range,'' and a threatened species as one ''likely to become an endangered

species within the foreseeable future throughout all or a significant portion of its range.'' The term ''significant portion of its range'' is not defined by statute. For purposes of this finding, a significant portion of a species' range is an area that is important to the conservation of the species because it contributes meaningfully to the representation, resiliency, or redundancy of the species. The contribution must be at a level such that its loss would result in a decrease in the ability to conserve the species.

The first step in determining whether a species is endangered in a significant portion of its range is to identify any portions of the range of the species that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be significant and where the species is not in danger of extinction. To identify those portions that warrant further consideration, we determine whether there is substantial information indicating that (i) the portions may be significant and (ii) the species may be in danger of extinction there. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are essentially uniform throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats applies only to portions of the range that are unimportant to the conservation of the species, such portions will not warrant further consideration.

If we identify any portions that warrant further consideration, we then determine whether in fact the species is threatened or endangered in any significant portion of its range. Depending on the biology of the species, its range, and the threats it faces, it may be more efficient for the Service to address the significance question first, or the status question first. Thus, if the Service determines that a portion of the range is not significant, the Service need not determine whether the species is threatened or endangered there. If the Service determines that the species is not threatened or endangered in a portion of its range, the Service need not determine if that portion is significant. If the Service determines that both a portion of the range of a species is significant and the species is threatened or endangered there, the Service will specify that portion of the range where the species is in danger of extinction pursuant to section 4(c)(1) of the Act.

The terms ''resiliency,'' ''redundancy,'' and ''representation'' are intended to be indicators of the conservation value of portions of the range. Resiliency of a species allows the species to recover from periodic disturbance. A species will likely be more resilient if large populations exist in high-quality habitat that is distributed throughout the range of the species in such a way as to capture the environmental variability found within the range of the species. In addition, the portion may contribute to resiliency for other reasons—for instance, it may contain an important concentration of certain types of habitat that are necessary for the species to carry out its life-history functions, such as breeding, feeding, migration, dispersal, or wintering. Redundancy of populations may be needed to provide a margin of safety for the species to withstand catastrophic events. This does not mean that any portion that provides redundancy is a significant portion of the range of a species. The idea is to conserve enough areas of the range such that random perturbations in the system act on only a few populations. Therefore, each area must be examined based on whether that area provides an increment of redundancy is important to the conservation of the species. Adequate representation ensures that the species' adaptive capabilities are conserved. Specifically, the portion should be evaluated to see how it contributes to the genetic diversity of the species. The loss of genetically based diversity may substantially reduce the ability of the species to respond and adapt to future environmental changes. A peripheral population may contribute meaningfully to representation if there is evidence that it provides genetic diversity due to its location on the margin of the species' habitat requirements.

To determine whether any portion of the range of the Galapagos petrel warrants further consideration as possibly endangered, we reviewed the supporting record for this final listing determination with respect to the geographic concentration of threats and the significance of portions of the range to the conservation of the species. As previously mentioned, we evaluated whether substantial information indicated that (i) the portions may be significant and (ii) the species in that portion may be currently in danger of extinction.

We found that while the occurrence of some threats (e.g., agricultural expansion and the presence of goats and pigs on four of the five islands (Floreana, San Cristóbal, Santa Cruz, and southern Isabela) on which the petrel breeds) is uneven across the range of the Galapagos petrel, the best available information does not indicate that these portions of the range of the Galapagos petrel warrant further consideration as endangered. Although a recent paper by Friesen *et al.* (2006) suggested that the loss of any island population would result in a loss of genetic variability, the best available information does not provide evidence of significantly higher threats to a single population, it indicates that all populations generally face equivalent threats. Friesen recommended that conservation of this species should include preservation of viable breeding populations on all five islands on which Galapagos petrels occur, to prevent the loss of adaptive diversity. According to Friesen *et al.* (2006, p. 113), the populations of Galapagos petrels on Floreana, Santa Cruz, and Santiago Islands are genetically distinct. The authors recommended highest conservation priority for these three populations to preserve the maximum amount of genetic variability. The population on San Cristóbal Island appears to represent a mixture of birds from other islands and the birds on Isabela are genetically similar to birds on Santiago Islands. These authors, however, did not specify whether one or more island population(s) faced a significantly higher risk of threats than any other population.

The best scientific and commercial data available regarding the extent, location, and trend of agricultural expansion on Floreana, San Cristóbal, Santa Cruz, and southern Isabela Islands does not reflect the current and historical trend of habitat loss due to agricultural expansion on these islands. There is also no information available regarding the extent, locations, and population trends of feral goats and pigs on Floreana, San Cristóbal, Santa Cruz, and southern Isabela Islands, and the historic and current trends of direct impacts to Galapagos petrels and their habitat due to ungulate activity on these islands. Essentially, no disproportionate threats were found to the species on any of the islands. The best available data show that there are no portions of the range in which the threats are so concentrated as to place the species currently in danger of extinction.

As a result, while the best scientific and commercial data available allows us to make a determination as to the rangewide status of the Galapagos petrel, there is no available information that would allow us to determine whether the population on Floreana, San Cristóbal, Santa Cruz, or southern

Isabela Islands faces a significantly higher risk of threats than any other population, and thus whether one or more of these populations are significant portions of the range in which the species is currently in danger of extinction. Therefore, for the reasons discussed above, we have determined threatened status for the Galapagos petrel throughout all of its range under the Act.

II. Heinroth's Shearwater (Puffinus heinrothi)

Species Information

The Heinroth's shearwater (*Puffinus heinrothi*) is a small, dark brown shearwater that is known from the Bismarck Archipelago and the seas around Bougainville Island to the east of Papua New Guinea, and the island of Kolombangara in the Solomon Islands, an independent country (Buckingham *et al.* 1995, Coates 1985, 1990, as cited in BLI 2009b). The plumage of the species is often entirely sooty-brown except for the narrow, silvery underwing bar and sometimes white bellies (BLI 2009b). The species was first taxonomically described by Reichenow in 1919 (Brooke 2004, as cited in BLI 2009b; Sibley and Monroe 1990, 1993, p. 327).

Habitat and Life History

Very little information is available on the Heinroth's shearwater and its life history. The Bismarck Archipelago includes mostly volcanic islands with rugged terrains and a total land area of 49,700 km² (19,189 mi²) (CIA 2007). Kolombangara is in the New Georgia Islands group of the Solomon Islands. It is almost perfectly round and about 9 mi (15 km) across (CIA 2007). Birds have been seen from inshore boat journeys around the islands of Kolombangara and Bougainville, often in mixed-species fishing flocks (BLI 2009b). The species is thought to be a burrow-nester (Buckingham et al. 1995, as cited in BLI 2009b).

Range and Distribution

The species' nesting grounds have not been located, but observations of the species indicate that the species breeds on Bougainville Island in Papua New Guinea, and Kolombangara and Rendova Islands in the Solomon Islands (Buckingham *et al.* 1995, Coates 1985, 1990, as cited in BLI 2000). BLI (2009b) estimates the range of the Heinroth's shearwater to be 154,440 mi² (400,000 km²). However, BLI (2000, pp. 22, 27) defines ''range'' as the ''Extent of Occurrence, the area contained with the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred, or projected sites of present occurrence of a species, excluding cases of vagrancy.'' Therefore, this reported range includes a large area of nonbreeding habitat (i.e., the sea).

Population Estimates

The population for Heinroth's shearwater is estimated to be approximately 250 to 999 individuals, with an unknown population trend (BLI 2009b). The only suggestion of any decline is the absence of recent records around Watom near New Britain (BLI 2009b), the largest island in the Bismarck Archipelago of Papua New Guinea, where the species had been recorded in the past.

Conservation Status

The IUCN categorizes this species as ''Vulnerable'' (BLI 2009b), with an unknown population trend. The species is not listed on any CITES Appendices (*http://www.cites.org*).

Summary of Factors Affecting the Heinroth's shearwater

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

Although little is known about Heinroth's shearwater and its life history, based on general information common to all other Procellariid species, we conclude that the range of the species changes intra-annually based on an established breeding cycle. During the breeding season, breeding birds return to breeding colonies to breed and nest. During the non-breeding season, birds migrate far from their breeding range where they remain at sea until returning to breed. Therefore, our analysis of Factor A is separated into analyses of the species' breeding habitat and range and the species' nonbreeding habitat and range.

BLI (2009b) estimates the breeding range of Heinroth's shearwater to be 154,400 mi² (400,000 km²); however, BLI (2000) defines ''range'' as the ''Extent of Occurrence, the area contained within the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred, or projected sites of present occurrence of a species, excluding cases of vagrancy.'' Because this reported range includes a large area of non-breeding habitat (i.e., the sea), our analysis of Factor A with respect to the Heinroth's shearwater's breeding range focuses on the islands where the species is most likely to breed.

Although the nesting area of this species has not been located, the information available indicates that the species breeds on Bougainville Island in Papua New Guinea and the islands of Kolombangara and Rendova in the Solomon Islands, where the few recorded sightings of this species have occurred (Buckingham *et al.* 1995; Coates 1985 and 1990, Gibbs 1996, Iles 1998, as cited in BLI 2000; Onley and Scofield 2007, p. 215; P. Scofield, *in litt.* 1994 cited in BLI 2009b, unpaginated). The species was originally known from a few historic specimens on Watom, Papua New Guinea, suggesting historical breeding there, but there have been no recent records from this island.

More recently, two birds were captured inland on Bougainville Island. One of these birds was described as being recently fledged; so it is reasonable to believe that its nest was in the vicinity (Hadden 1981, as cited in BLI 2000 and BLI 2009b, unpaginated). The conclusion that the species breeds on Bougainville Island is further supported by recent observations in the seas around this island, including one flock of 250 birds (Coates 1985, 1990, as cited in BLI 2000 and BLI 2009b, unpaginated). It is also reasonable to conclude that breeding occurs on Kolombangara Island, because up to nine birds were recorded recently off this island where all timed records were in the afternoon or evening, when breeding birds of this species typically return to their nest sites from foraging excursions (Buckingham *et al.* 1995, Gibbs 1996, Scofield 1994 as cited in BLI 2000). Although not as conclusive as the other two sites due to only one observation, the species is also likely to breed on nearby Rendova Island, where one bird was seen flying out of the mountains at dawn (Ives 1998 as cited in BLI 2009b, unpaginated). Since Procellariids occupy land only to breed, it is reasonable to conclude that this bird was leaving its nest site.

Heinroth's shearwater is believed to be relatively sedentary (BLI 2009b, unpaginated) and may breed throughout the year (Onley and Scofield 2007, p. 215). Based on the locations of inland sightings of the Heinroth's shearwater and a comparison to closely related species, it is believed this species breeds in high mountains (Buckingham *et al.* 1995, as cited in BLI 2000 and BLI 2009b, unpaginated). The three islands where this species is likely to breed are all mountainous, volcanic islands in a wet tropical climate (BLI 2009b, unpaginated).

Bougainville Island is 3,598 mi² (9,317.8 km²) in size (United Nations System-Wide Earthwatch 1998a, unpaginated), is thickly vegetated, and is rugged. There are extensive areas of undisturbed lowland and montane

rainforest. Most of the 175,160 people who live on this island travel by foot or small boat, and live by subsistence agriculture and fishing (Central Intelligence Agency (CIA) 2007a, unpaginated; United Nations System-Wide Earthwatch 1998a, unpaginated; CIA 2007a, unpaginated). Exploitation of Papua New Guinea's natural resources has been somewhat hindered due to the islands' rugged terrain and the high cost of developing infrastructure (CIA 2007a, unpaginated). It is however rich in copper and gold (Bougainville Copper, Ltd 2009, unpaginated) and surface mining occurred until 1989. A copper mine on the island was one of the world's largest open pit mines, and caused environmental damage due to tailings to the surrounding forest and river areas. Although the mine is closed, there is likely to be pressure to mine natural resources such as copper and gold in the future. On Bougainville Island, we are unaware of any present or threatened destruction, modification, or curtailment of the Heinroth's shearwater's current breeding habitat; however, as resources (timber or otherwise) decline in other areas, the likelihood that the resources on Bougainville Island will be sought increases. Therefore, due to the presence of valuable resources such as copper and gold, based on the evidence before us, we believe it is reasonable to anticipate that deforestation and habitat destruction may be a threat in the foreseeable future.

On the islands of Kolombangara and Rendova, the forests, with land areas of 265.6 mi^2 (687.8 km^2) and 158.8 mi^2 (411.3 km^2), respectively, (United Nations System-Wide Earthwatch 1998b,c, unpaginated), are threatened by deforestation at mid to low elevations (Dutson, *in litt.* 2008, unpaginated). High-altitude forests are not threatened by deforestation because logging is commercially unviable in small-stature forests on steep slopes (Dutson, *in litt.* 2008, unpaginated). Timber is the Solomon Islands' most important export commodity. Unsustainable forestry practices, combined with clearing of land for agricultural and grazing purposes and overexploitation of wood products for use as fuel, results in the destruction of vast areas of forest throughout the Solomon Islands (CIA 2007b, unpaginated). All the lower slopes on Kolombangara Island have been logged except for one 1,640 ft (500 m) strip (United Nations System-Wide Earthwatch 1998b).

In 2003, the World Resources Institute reported that none of the Solomon Island's total land area is protected to such an extent that it is preserved in its natural condition (Earth Trends 2003b, unpaginated). Based on the locations of inland sightings of the Heinroth's shearwater and a comparison to closely related species, it is believed this species breeds in high mountains (Buckingham *et al.* 1995, as cited in BLI 2000 and BLI 2009b, unpaginated). By inference of analogous species, high-elevation forests on the islands of Kolombangara and Rendova are the likely breeding habitat of the Heinroth's shearwater, although breeding sites have never been located. While low and mid-elevation forests are being reduced through deforestation, deforestation is not currently considered to be a threat to the purported breeding habitat in forests at high elevations. Therefore, based on the best available information, deforestation to Heinroth's shearwater is not considered to be a threat to the species now and in the foreseeable future.

The Heinroth's shearwater's range at sea is poorly known. Up to 20 birds have been reported in the Bismarck seas, ranging to the Madang Province on the north coast of Papua New Guinea (Bailey 1992, Clay 1994, Coates 1985, 1990, Hornbuckle 1999, as cited in BLI 2000). Observations have also been reported in the seas around Bougainville Island, including a flock of 250 birds (Coates 1985, 1990, as cited in BLI 2000 and BLI 2009b, unpaginated). We are unaware of any present or threatened destruction, modification, or curtailment of this species' current sea habitat or range now and in the foreseeable future.

Summary of Factor A

On Kolombangara and Rendova Islands, although the low- to mid-elevation forests are being reduced by deforestation, we do not believe deforestation is a threat to the breeding habitat of Heinroth's shearwater now and in the foreseeable future. However on Bougainville Island, we find that the present or threatened destruction, modification, or curtailment of this species' breeding habitat is a threat now and in the foreseeable future due to the presence of valuable natural resources in the area where the species is believed to nest. Therefore, based on the best available scientific and commercial information, we find that the present or threatened destruction, modification, or curtailment of this species' breeding habitat is a threat to the species now and in the foreseeable future.

The Heinroth's shearwater's range at sea is poorly known. We are unaware of any present or threatened destruction, modification, or curtailment of this species' current sea habitat or range now or in the foreseeable future.

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

We are unaware of any commercial, recreational, scientific, or educational purpose for which the Heinroth's shearwater is currently being used. Therefore, we find that overutilization for commercial, recreational, scientific, or educational purposes is not a threat to the Heinroth's shearwater in any portion of its range now and in the foreseeable future.

C. Disease or Predation

We are not aware of any disease concerns that may have led to the decline of the Heinroth's shearwater.

Although the Heinroth's shearwater's nest sites have not been located, all three islands where the species is most likely to breed have introduced rats, cats, and dogs (Buckingham *et al.* 1995, as cited in BLI 2000 and BLI 2009b). Rats and feral cats contributed to drastic declines to other species such as the Galapagos petrel (see the discussion of Factor C for the Galapagos petrel), and introduced cats and rats are known to have caused many local extirpations of other petrel species (Moors and Atkinson 1984, as cited in Priddel *et al.* draft). Furthermore, the Heinroth's shearwater is believed to breed in high, inaccessible mountains and rats have been observed at 2,953 ft (900 m) on Kolombangara Island and consequently are believed to be a threat to this burrow-nesting species (Buckingham *et al.* 1995, as cited in BLI 2009b, unpaginated). In addition, pigs are reported to threaten Heinroth's shearwater (Dutson, *in litt.* 2008, unpaginated). However, it is unclear if pigs kill nestlings, juveniles, and adult birds by digging up nests, or by degrading shearwater habitat through trampling and rooting vegetation.

There have been no attempts to eradicate introduced predators from these islands; such eradication would be difficult due to the permanent human habitation on the islands and the customary ownership of the land (Dutson, *in litt.* 2008, unpaginated). Even if the predators were eradicated, there is still a high potential for rats and cats to be transported to the islands in boats transporting humans or other shipments.

Summary of Factor C

Although several diseases have been documented in other procellarid species, disease has not been documented in the Heinroth's

shearwater. While the species is at sea during the nonbreeding season, we are unaware of any threats due to predation on Heinroth's shearwaters. Therefore, we find that the disease does not affect the continued existence of the species threaten the species throughout all or a significant portion of its range now and in the foreseeable future.

Because the threat of predation (primarily by introduced rats and feral cats) has severely impacted other closely related procellarid species, and there are records of these introduced predators on the three islands where the Heinroth's shearwater is most likely to breed, it is reasonable to assume that this species is similarly affected while on its breeding grounds. Therefore, we find that predation is a significant threat to this species throughout all of its range now and in the foreseeable future.

D. The Inadequacy of Existing Regulatory Mechanisms

The regulatory mechanisms of Papua New Guinea (PNG) are complex in some respects. In 1975, environmental issues were added to the government's constitution under its National Goal and Directive Principals. The Environmental Management for Sustainable Development (EMSD) Program was established; however, as of 2001, there was a shortage of government funding for the Program (Aka, 2001). The PNG Constitution encourages ''traditional villages and communities to remain as viable units of Papua New Guinean society'' (Pacific Islands Legal Information Institute, 2006). In this same vein of governing, PNG is essentially divided into autonomous regions which govern themselves.

Bougainville Island, on which Heinroth's shearwater is believed to nest, is considered an autonomous region by PNG. Bougainville's government was established in 2000; it has its own constitution and its own president and house of representatives. Due to the structure of PNG's governing mechanisms, PNG's resources are difficult to manage and regulate through this autonomous governing system. Although PNG's Forestry Act of 1991 states that the forests resources and environment will be managed, developed, and protected in such a way as to conserve and renew them as an asset for the succeeding generations, much of PNG's land is logged, farmed for palm oil, and unsustainably managed. Only in 2009 did Papua New Guinea create its first national conservation area, the YUS Conservation Area, covering 76,000 ha (187,000 ac) on the island of Papua New Guinea. The main conservation efforts appear to predominantly be carried out by nongovernmental organizations, such as the Research and Conservation Foundation of Papua New Guinea, which works with the local communities to create viable economic alternatives to unsustainable clear cutting and mining.

On Bougainville Island due to the lack of well-established regulatory mechanisms governing land ownership, particularly with respect to introduced predators, mining, and habitat loss due to unsustainable timber harvest practices, no regulatory mechanisms are known that reduce or remove threats to this species. Additionally, none of the Solomon Island's total land area is protected to such an extent that it is preserved in its natural condition (Earth Trends 2003b). The lack of any regulatory mechanisms may be exacerbating the threats from habitat loss (Factor A) and predation by introduced species (Factor C), even though the species is suspected to nest in remote, forested areas. Therefore, we find that the regulatory mechanisms in place are inadequate to ameliorate the threats to the Heinroth's shearwater throughout all of its range now and in the foreseeable future.

E. Other Natural or Manmade Factors Affecting the Continued Existence of the Species

As previously mentioned, several commenters disputed our statement in the proposed rule that long-line fisheries threaten all seabirds and in particular, the Heinroth's shearwater. According to the U.S. National Marine Fisheries Service (NMFS) and BirdLife International (BLI 2009b), the seabirds killed in long-line fisheries are predominantly albatrosses and some species of petrels (not *Pterodroma* species). According to the commenters, fisheries by-catch has not been identified as a key threat for this species (NZDOC 2008, pp. 2–3). The characteristics of a seabird species vulnerable to long-line fishing include being an aggressive seabird good at seizing prey or baited hooks at the water's surface, or is a proficient diver and these characteristics do not describe the Heinroth's shearwater. Therefore, due to the absence of conclusive information regarding the threat of long-line fishing on the Heinroth's shearwater, we find that this factor does not affect the continued existence of the species throughout all or a significant portion of its range.

The population of the Heinroth's shearwater is estimated at 250 to fewer than 1,000 individuals, which is considered to be small (BLI 2009b). Species with such small population sizes are at greater risk of extinction. In general, the fewer the number of populations and the smaller the size of each population, the higher the probability of extinction (Franklin 1980, p. 7; Gilpin and Soule 1986, p. 12; Meffe and Carroll 1996, pp. 218–219; Pimm *et al.* 1998, pp. 757–785; Raup 1991, pp. 124–127; Soule 1987, p. 5).

The Heinroth's shearwater's small population size combined with its colonial nesting habits, as is typical of all Procellariid species, makes this species particularly vulnerable to the threat of adverse random, naturally occurring events (e.g., volcanic eruptions, cyclones, and earthquakes) that destroy breeding individuals and their breeding habitat. All three of the islands where the Heinroth's shearwater is most likely to breed are in a geologically active area resulting in a significant risk of catastrophic natural events. These islands are subject to frequent earthquakes, tremors, volcanic activity, typhoons, tsunamis, and mudslides (CIA 2007a, b, unpaginated). Of these three islands, the species' habitat on Bougainville is at most risk from volcanic activity. There are seven volcanoes on Bougainville that have been active in the last 10,000 years. Bagana is an active volcano that has had 22 eruptions since 1842, with most being explosive. Some of these explosive eruptions have produced extremely hot, gas-charged ash, which is expelled with explosive force, moving with hurricane speed down the mountainside. Bagana has been erupting since 1972, creating slow-moving lava flows (Bagana 2005, unpaginated). These volcanic explosions and lava flows have great potential to destroy Heinroth's shearwaters and their breeding habitat in the mountainous areas where they are most likely to breed.

Landslides in mountainous areas are associated with severe storms that are common in this geographic region (World Meteorological Organization 2004, unpaginated), and would be particularly threatening to breeding Heinroth's shearwaters and their breeding habitat during these extreme weather events.

While species with more extensive breeding ranges or higher population numbers could recover from adverse random, naturally occurring events such as earthquakes, tremors, volcanic activity, typhoons, tsunamis, and mudslides, this species does not have such resiliency. Its small population size and restricted breeding range puts the species at higher risk for experiencing the irreversible adverse

effects of random, naturally occurring events.

Summary of Factor E

While species with more extensive breeding ranges or higher population numbers could recover from adverse random, naturally occurring events such as volcanic eruptions or typhoons, the Heinroth's shearwater does not have such resiliency. Its small population size and restricted breeding range puts the species at higher risk for experiencing the irreversible adverse effects of random, naturally occurring events. Therefore, we find that the combination of factors—the species' small population size, its restricted breeding range, and the likelihood of adverse random, naturally occurring events—to be a significant threat to the species throughout all of its range now and in the foreseeable future.

Conclusion and Determination for the Heinroth's Shearwater

We have carefully assessed the best available scientific and commercial information regarding the past, present, and potential future threats faced by the Heinroth's shearwater. We have determined that the species is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The best available information indicates that the Heinroth's shearwater is threatened by predation by introduced rats and feral cats within the species' breeding range (Factor C). The probability of these introduced predators preying on this species is high given that all these introduced species are on the islands where the species is likely to breed, and rats have been found in some of the high mountainous areas where the Heinroth's shearwater is most likely to nest. Furthermore, the devastating impact of predation by these introduced species has been documented in several closely related species. Finally, there is no available information that indicates that efforts have been initiated to eradicate introduced predators from the three islands where the species is most likely to breed. This threat is magnified by the fact that these predators likely threaten the species throughout its breeding range.

On Bougainville Island, although we are unaware of any present or threatened destruction, modification, or curtailment of the Heinroth's shearwater's current breeding habitat (Factor A), due to the presence of valuable resources such as copper and gold, based on the evidence before us, we believe it is reasonable to anticipate that mining may be a threat in the foreseeable future. The species' low population size of 250 to fewer than 1,000 individuals further increases this species' risk of extinction. Its colonial nesting habits also makes the species particularly vulnerable to the threat of catastrophic, naturally occurring events (e.g., volcanic activities) that are known to frequently occur in the species' breeding range (Factor E). In addition, we have determined that the inadequacy of existing regulatory mechanisms to reduce or remove these threats is a contributory factor to the risks that threaten this species' continued existence (Factor D). Because the survival of this species is dependent on recruitment of chicks from its breeding range, the threats to this species within its breeding range put the species at risk throughout all of its range.

While the threats themselves may be different, the suite of threats acting on the species and its habitats appear to be affecting the species in a comparable manner. No disproportionate threats to the species were found on any of the islands or areas where it is believed to exist; the severity of the threats on each island appear to be comparable. The best available data show that there are no portions of the range in which the threats are so concentrated as to place the species currently in danger of extinction. Despite the lack of population trend information, due to the species' small population size, the lack of conservation measures and regulatory protections for this species, and the identified threats that have caused declines in closely related species, we determine threatened status for the Heinroth's shearwater because it is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Therefore, based on the best scientific and commercial data available, we find that the Heinroth's shearwater is threatened throughout its range.

Significant Portion of the Range Analysis

Having determined that the Heinroth's shearwater is likely to become an endangered species within the foreseeable future throughout all of its range, we also considered whether there are any significant portions of its range where the species is currently in danger of extinction. See our discussion above for the Galapagos petrel regarding how we make this determination.

To determine whether any portion of the range of the Heinroth's shearwater warrants further consideration as possibly endangered, we reviewed the supporting record for this listing determination with respect to the geographic concentration of threats acting on the species and the significance of portions of the range to the conservation of the species. As previously mentioned, we evaluated whether the best scientific and commercial information available indicated that (i) portions may be significant and (ii) the species in that portion may be currently in danger of extinction. The Heinroth's shearwater is found on three small, neighboring islands. Heinroth's shearwater is thought to occur in remaining natural forests in the more remote regions of these islands, and as a consequence very limited information is available on the status of the species on these islands. The status of the species is essentially unknown other than the observations indicated above. Under our five-factor analysis above, we determined that Heinroth's shearwater is a threatened species throughout its entire range.

While the best scientific and commercial data available allows us to make a determination as to the range wide status of the Heinroth's shearwater, the available information does not suggest that the populations on Bougainville, Kolombangara, or Rendova Islands face a significantly higher risk of threats than any other population, or that one or more of these populations is currently in danger of extinction. Following a review of the threats acting on the species and the geographic scope of these threats, we found that the threats such as predation, inadequate regulatory mechanisms, small population size, restricted breeding range, and the likelihood of adverse, random, naturally occurring events affect the species consistently and relatively equitably throughout its range. Therefore, following a review of the Solicitor's Opinion on Significant Portion of the Range and recommendations on how to implement the Opinion, we have determined that because the data do not indicate that any portion of the range of the Heinroth's shearwater is disproportionately threatened, no portion warrants further consideration as a significant portion of the species.

In conclusion, although we do not believe that the species is currently in danger of extinction now, we believe it is likely that it will become endangered throughout its range in the foreseeable future. Therefore, for the reasons discussed above, we determine that the Heinroth's shearwater meets the definition of a threatened species throughout all of its range under the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and encourages and results in conservation actions by Federal and State governments, private agencies and groups, and individuals.

Section 7(a) of the Act, as amended, and as implemented by regulations at 50 CFR part 402, requires Federal agencies to evaluate their actions within the United States or on the high seas with respect to any species that is proposed or listed as endangered or threatened, and with respect to its critical habitat, if any is being designated. However, given that the Galapagos petrel and Heinroth's shearwater are not native to the United States, we are not designating critical habitat in this final rule.

Section 8(a) of the Act authorizes the provision of limited financial assistance for the development and management of programs that the Secretary of the Interior determines to be necessary or useful for the conservation of endangered and threatened species in foreign countries. Sections 8(b) and 8(c) of the Act authorize the Secretary to encourage conservation programs for foreign endangered species and to provide assistance for such programs in the form of personnel and the training of personnel.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered and threatened wildlife. As such, these prohibitions would be applicable to the Galapagos petrel, and Heinroth's shearwater. These prohibitions, under 50 CFR 17.21 and 17.31, in part, make it illegal for any person subject to the jurisdiction of the United States to ''take'' (take includes: harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt any of these) within the United States or upon the high seas; import or export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any endangered or threatened wildlife species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken in violation of the Act. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered and threatened wildlife species under certain circumstances. Regulations governing permits for threatened species are codified at 50 CFR 17.32.

Required Determinations

National Environmental Policy Act

We have determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), need not be prepared in connection with regulations adopted under section 4(a) of the Act. A notice outlining our reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this rule is available on the Internet at *http://www.regulations.gov* or upon request from the Branch of Listing, Endangered Species, U.S. Fish and Wildlife Service (see **FOR FURTHER INFORMATION CONTACT**).

Author

The primary authors of this final rule are staff members of the Branch of Listing, Endangered Species, U.S. Fish and Wildlife Service (see **FOR FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

■ Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

PART 17—[AMENDED]

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

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Public Law 99–625, 100 Stat. 3500; unless otherwise noted.

■ 2. Amend § 17.11(h) by adding new entries for ''Petrel, Galapagos'' and ''Shearwater, Heinroth's'' in alphabetical order under BIRDS to the List of Endangered and Threatened Wildlife as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	
BIRDS							
*	*	*	*	*	*	*	
Petrel, Galapagos	*Pterodroma phaeopygia*	Pacific Ocean—Ecuador (Galapagos Islands).	Entire	T	766	NA	NA
*	*	*	*	*	*	*	
Shearwater, Heinroth's	*Puffinus heinrothi*	Pacific Ocean—Papua New Guinea (Bougainville Island), Solomon Islands (Kolom-bangara and Rendova).	Entire	T	766	NA	NA
*	*	*	*	*	*	*	

* * * * *

Dated: December 28, 2009.

Robyn Thorson,

Director, Fish and Wildlife Service.

[FR Doc. E9–31308 Filed 1–4–10; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 635

[Docket No. 0906221072–91425–02]

RIN 0648–AX95

Atlantic Highly Migratory Species; Atlantic Commercial Shark Management Measures

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule; fishing season notification.

SUMMARY: This final rule establishes the annual quotas and opening dates for the 2010 fishing season for sandbar sharks, non-sandbar large coastal sharks (LCS), small coastal sharks (SCS), and pelagic sharks based on any over- and/or underharvests experienced during the 2008 and 2009 Atlantic commercial shark fishing seasons. NMFS needs to take this action to establish the 2010 adjusted fishing quotas and to open the commercial fishing seasons for the Atlantic sandbar shark, non-sandbar LCS, SCS, and pelagic shark fishery based on over- and underharvests from the 2009 fishing season. This action is expected to affect commercial shark fishermen in the Atlantic and Gulf of Mexico regions.

DATES: The 2010 Atlantic commercial shark fishing season for the shark research, blue sharks, porbeagle sharks, and pelagic sharks (other than porbeagle and blue sharks) in the northwestern Atlantic Ocean, including the Gulf of Mexico and the Caribbean Sea, will open on January 5, 2010. The non-sandbar LCS in the Gulf of Mexico region will open on February 4, 2010. NMFS will keep the SCS fishery closed until the effective date of the final rule for Amendment 3. NMFS will open the non-sandbar LCS fishery in the Atlantic region on July 15, 2010. The 2009 Atlantic commercial shark fishing season and quotas are provided in Table 1 under **SUPPLEMENTARY INFORMATION**.

ADDRESSES: Highly Migratory Species Management Division, 1315 East-West Highway, Silver Spring, MD 20910.

FOR FURTHER INFORMATION CONTACT: Karyl Brewster-Geisz or Guý DuBeck by phone: 301–713–2347, or by fax: 301–713–1917.

SUPPLEMENTARY INFORMATION:

Background

The Atlantic shark fishery is managed under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The 2006 Consolidated Highly Migratory Species (HMS) Fishery Management Plan (FMP) and its amendments under the Magnuson-Stevens Act are implemented via regulations at 50 CFR part 635.

On October 28, 2009, NMFS published a proposed rule (74 FR 55526) announcing the fishing season for 2010 and the 2010 proposed quotas based on shark landings information as of September 15, 2009. The proposed rule contained details regarding the alternatives considered and a brief summary of the recent management history. Those details are not repeated here. Several comments from the public were received on the proposed rule. Those comments along with the Agency's responses are provided below. This final rule serves as notification of the 2010 fishing season and 2010 quotas, based on shark landings updates as of October 31, 2009, pursuant to 50 CFR 635.27(b)(1)(vii). This action does not change the annual base and adjusted base annual commercial quotas as established under Amendment 2 to the 2006 Consolidated HMS FMP and its June 24, 2008 final rule (73 FR 35778, corrected at 73 FR 40658, July 15, 2008). Any such changes would be performed through an amendment. Rather, this action adjusts the commercial quotas based on overharvests in 2008 and 2009.

Response to Comments

During the proposed rule stage, NMFS received over a dozen written comments from fishermen, dealers, environmental groups, and other interested parties. NMFS also heard numerous comments from the fishermen and dealers who attended the three public hearings. The significant comments on the October 28, 2009, proposed rule (74 FR 55526) received during the public comment period are summarized below, together with NMFS responses.

SCS Alternatives

Comment 1: NMFS received many comments supporting alternative A1, the no action alternative. Commenters stated that since the current SCS quota of 454 metric tons (mt) dressed weight (dw) has not been taken and is still available, NMFS should open the fishery on or about January 1. Commenters also felt that the SCS quota should not be reduced because they believe that blacknose shark data is not based on the best available science and because NMFS did not consider the Turtle Excluder Devices (TEDs) or the reduction in shrimp effort from Maine to Texas in the stock assessment.

Response: NMFS is currently in the proposed rule stage of Amendment 3 to the Consolidated Highly Migratory Species (HMS) Fishery Management Plan (FMP) (73 FR 36392, July 24, 2009). Amendment 3 considered, among other things, measures that would significantly reduce the non-blacknose SCS and blacknose shark quotas in order to rebuild blacknose shark stocks and prevent overfishing of blacknose sharks. Amendment 3 would also establish annual catch limits (ACLs) and accountability measures (AMs), which must be set at levels consistent with the plan for ending overfishing and rebuilding blacknose sharks. NMFS will not select final alternatives for implementation until it finalizes the Environmental Impact Statement (FEIS) for Amendment 3, prepares a Record of Decision (ROD) and publishes a final rule implementing the amendment. Should NMFS select the preferred alternatives to reduce quotas for blacknose and non-blacknose SCS under proposed Amendment 3 there may be no non-blacknose SCS and/or blacknose shark quotas available, if NMFS opened the SCS fishery on or about January 1, depending on the level of harvest occurring prior to selection and implementation of Amendment 3. Any subsequent overharvest of potential reduced blacknose and non-blacknose SCS quotas that may be implemented under Amendment 3 would lower quotas for the 2011 fishing season. Additionally, under the Magnuson-Stevens Act, any fishery that was declared to be overfished by 2009 must establish a mechanism for specifying ACLs and establish ACLs and AMs effective for the 2010 fishing season. Delaying the 2010 SCS fishing season would allow the SCS fishing to open under the potentially reduced quotas implemented in Amendment 3 consistent with ACLs.

NMFS used the best available science and a rigorous Southeast Data Assessment and Review (SEDAR) stock assessment process to make the determination that blacknose sharks are overfished with overfishing occurring. The independent review panel determined that the data used in the SCS stock assessment were considered the best available at the time. They also determined that appropriate standard