

Dated: November 25, 2008.

**H. Dale Hall,**

Director, U.S. Fish and Wildlife Service.

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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[FWS-R9-IA-2008-0108; 96100-1671-0000-B6]

RIN 1018-AW01

#### Endangered and Threatened Wildlife and Plants; Listing the Medium Tree Finch (*Camarhynchus pauper*) as Endangered Throughout Its Range

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

**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), propose to list the medium tree finch (*Camarhynchus pauper*) as endangered under the Endangered Species Act of 1973, as amended (Act). This proposal, if made final, would extend the Act's protection to this species. The Service seeks data and comments from the public on this proposed rule.

**DATES:** We will accept comments received or postmarked on or before February 6, 2009. We must receive requests for public hearings, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by January 22, 2009.

**ADDRESSES:** You may submit comments by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the instructions for submitting comments.
- *U.S. mail or hand-delivery:* Public Comments Processing, Attn: FWS-R9-IA-2008-0108; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 222; Arlington, VA 22203. We will not accept comments by e-mail or fax. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the Public Comments section below for more information).

**FOR FURTHER INFORMATION CONTACT:** Monica A. Horton, Division of Scientific Authority, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Room 110, Arlington, VA 22203; telephone 703-358-1708; facsimile 703-358-2276. If you use a telecommunications device for the deaf (TDD), call the Federal

Information Relay Service (FIRS) at 800-877-8339.

#### SUPPLEMENTARY INFORMATION:

##### Public Comments

We intend that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, we request comments or suggestions on this proposed rule. We particularly seek comments concerning:

(1) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species and regulations that may be addressing those threats.

(2) Additional information concerning the range, distribution, and population size of this species, including the locations of any additional populations of this species.

(3) Any information on the biological or ecological requirements of the species.

(4) Current or planned activities in the areas occupied by the species and possible impacts of these activities on this species.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. We will not consider comments sent by e-mail or fax or to an address not listed in the **ADDRESSES** section.

If you submit a comment via <http://www.regulations.gov>, your entire comment—including any personal identifying information—will be posted on the Web site. If you submit a hardcopy comment that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy comments on <http://www.regulations.gov>.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Division of Scientific Authority, 4401 N. Fairfax Drive, Room 110, Arlington, VA 22203; telephone 703-358-1708.

##### Background

Section 4(b)(3)(A) of the Act 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 List 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 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 on whether the requested action is warranted, not warranted, or warranted but precluded by higher priority listing actions (this finding is referred to as the “12-month finding”). Section 4(b)(3)(C) of the Act requires that a finding of warranted but precluded for petition species should be treated as having been resubmitted on the date of the warranted but precluded finding, and is, therefore, subject to a new finding within 1 year and subsequently thereafter until we take action on a proposal to list or withdraw our original finding. 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 Actions

On May 6, 1991, we received a petition (hereafter referred to as the 1991 petition) from the International Council for Bird Preservation (ICBP) to add 53 species of foreign birds to the List of Endangered and Threatened Wildlife (50 CFR 17.11(h)), including the medium tree finch, which is the subject of this proposed rule. In response to the 1991 petition, we published a positive 90-day finding on December 16, 1991 (56 FR 65207), for all 53 species, and announced the initiation of a status review. On March 28, 1994 (59 FR 14496), we published a 12-month finding on the 1991 petition, along with a proposed rule to list 30 African birds under the Act (16 U.S.C. 1531 *et seq.*). In that document, we proposed listing 15 of the 53 bird species included in the 1991 petition, and announced our finding that listing the remaining 38 species from the 1991 petition, including the medium tree finch, was warranted but precluded because of other listing activity.

On May 21, 2004 (69 FR 29354) and April 23, 2007 (72 FR 20184), we published in the **Federal Register** notices announcing our annual petition findings for foreign species. In those

notices, we made warranted but precluded findings for all outstanding foreign species from the 1991 petition, including the medium tree finch, which is the subject of this proposed rule.

Per the Service's listing priority guidelines (September 21, 1983; 48 FR 43098), our 2007 annual notice of review (ANOR) (April 23, 2007; 72 FR 20184) identified the listing priority numbers (LPNs) (ranging from 1 to 12) for all outstanding foreign species, including the medium tree finch, which was designated with an LPN of 11. The medium tree finch does not represent a monotypic genus. As reported in the 2007 ANOR, the magnitude of threat to the species was moderate, as the species was common in the forested highlands and its habitat had not been highly degraded. The immediacy of threat was not imminent because the species' habitat is protected by the area's National Park and World Heritage Site status.

On January 23, 2008, the United States District Court ordered the Service to propose listing rules for five foreign bird species, actions which had been previously determined to be warranted but precluded: Andean flamingo (*Phoenicoparrus andinus*), black-breasted puffleg (*Eriocnemis nigrivestis*), Chilean woodstar (*Eulidia yarrellii*), medium tree finch (*Camarhynchus pauper*), and St. Lucia forest thrush (*Cichlherminia lherminieri sanctaeluciae*). The court ordered the Service to issue proposed listing rules for these species by the end of 2008.

On July 29, 2008 (73 FR 44062), we published in the **Federal Register** a notice announcing our annual petition findings for foreign species. In that notice, we announced that proposing 30 taxa for listing under the Act is warranted. In order to comply with the recent court order, the medium tree finch was included as one of the 30 taxa for which listing is warranted.

### Species Information

The medium tree finch (*Camarhynchus pauper*) is endemic to the island of Floreana in the Galapagos Islands, Ecuador (BirdLife International 2008; Harris 1982, p. 150; Sibley and Monroe 1990, p. 771). It is one of the 14 species of Darwin's finches, collectively named in recognition of Charles Darwin's work on the theory of evolution (Grant 1986, p. 6), and is approximately 12.5 centimeters (cm) (5 inches (in)) in length (BirdLife International 2008; Harris 1982, p. 150). Medium tree finches have wings and tails that are short and rounded, and often hold their tail slightly cocked in a wren-like manner (Jackson 1985, p.

188). Males have a black head, neck, and upper breast (Fitter *et al.* 2000, p. 78; Harris 1982, p. 150; Jackson 1985, p. 188), and an underside that is gray-brown, and white or yellowish in color (BirdLife International 2008). Their tail and back is olive green (Fitter *et al.* 2000, p. 78). Females have a head that is more gray-brown (BirdLife International 2008), and a body that is generally olive-green above and pale yellowish below (Fitter *et al.* 2000, p. 78). It is similar to the large and small tree finches of the same genus, but differs from the large tree finch (*Camarhynchus psittacula*) primarily due to its significantly smaller and less parrot-like beak, and from the small tree finch (*Camarhynchus parvulus*) because of its larger beak (BirdLife International 2008; Harris 1982, p. 150). It is also known as the Charles tree finch, the Santa Maria tree finch, and the Floreana tree finch (Sibley and Monroe 1990, p. 771), due to the fact that the island of Floreana is also referred to as Charles Island or Santa Maroa Island, the official Spanish name of the island (Grant 1986, Appendix; Harris 1973, p. 265). The species is locally known as "Pinzón Mediano de Árbol" (Castro and Phillips 1996, p. 130). The species was first taxonomically described by Ridgeway in 1890 (Sibley and Monroe 1990, p. 771).

### Habitat and Life History

Floreana, one of the 19 principal islands that make up the Galapagos archipelago (McEwen 1988, p. 234), is 173 square kilometers (km<sup>2</sup>) (67 square miles (mi<sup>2</sup>)) in area, and has a maximum elevation of 640 meters (m) (2,100 feet (ft)) (Swash and Still 2005, p. 10).

The medium tree finch mainly occurs in the moist highland forests (*i.e.*, the *Scalesia* zone, named for the dominant plants, *Scalesia* spp., found in this zone) (Christensen and Kleindorfer 2008, in preparation; Stewart 2006, p. 193), primarily above 300 m (984 ft) (Castro and Phillips 1996, p. 130). The *Scalesia* zone begins at an altitude between 180 (Wiggins and Porter 1971, p. 22) and 200 m (591–656 ft), and ends at approximately 600 m (1,968 ft) (Stephenson 2000, p. 34), and is the first of the moist zones found on the Galapagos Islands (Fitter *et al.* 2000, p. 137).

On Floreana, the *Scalesia* zone is a lush evergreen cloud forest dominated by *Scalesia pedunculata* (daisy tree), the largest of the 20 species of *Scalesia* found in the Galapagos (Fitter *et al.* 2000, p. 137; Jackson 1985, p. 95). *Scalesia* form dense stands (Fitter *et al.* 2000, p. 137), with *S. pedunculata* frequently reaching 15 m (49 ft) in height, and can reach up to 20 m (66 ft)

or more given good environmental conditions (Fitter *et al.* 2000, p. 137; Wiggins and Porter 1971, p. 22).

The *Scalesia* zone on Floreana is also dominated by the endemic trees *Croton scouleri* (Galapagos croton) and *Zanthoxylum fagara* (lime prickly-ash), with other dominant plants including *Phoradendron henslowii* (mistletoe), the shrub *Macraea laricifolia*, and introduced fruit species such as *Citrus limetta*, *Passiflora edulis*, and *Psidium guajava* (Christensen and Kleindorfer 2008, in preparation). Beneath the top of the canopy, epiphytes (plants that live on another plant without causing harm to the host plant) cover trunks, branches, twigs, and even the leaves of some plant species (Fitter *et al.* 2000, p. 137; Wiggins and Porter 1971, p. 24). Common epiphytes found in the *Scalesia* zone are mosses, liverworts, ferns, *Peperomia*, bromeliads (such as *Tillandsia*), and orchids (Fitter *et al.* 2000, p. 137; Jackson 1985, p. 60; Wiggins and Porter 1971, pp. 22, 24). Epiphytes are a prominent feature of the moist zones of the Galapagos Islands because of the large amount of time that clouds and mist cover the upper elevations of the higher islands (Fitter *et al.* 2000, p. 137).

A large amount of the *Scalesia* zone has been destroyed on the inhabited islands because it is the best area for agriculture (Fitter *et al.* 2000, p. 137; Jackson 1985, p. 61). The garúa (dense sea mist that sometimes blankets the highlands) keeps the area well-watered during the cool season (Fitter *et al.* 2000, p. 137; Jackson 1985, p. 61), which makes the area ideal for agricultural use.

Stotz *et al.* (1996) reported that the elevational zone in which the medium tree finch is most common is "Hill Tropical," described as hills and lower slopes, between 500–900 m (1,640–2,953 ft) (pp. 121, 262). The species reaches its minimum elevation in relatively low-relief lowland areas and reaches its maximum elevation at 600 m (1,969 ft) (Stotz *et al.* 1996, p. 262). As a result, one can infer from this data that the medium tree finch is predominantly found at the highest end of its elevational distribution, between 500 and 600 m (1,640 and 1,969 ft).

According to Stotz *et al.* (1996), the medium tree finch uses more than one level at which it forages within its habitat; specifically, they noted that it can be found foraging from the understory (undergrowth) to the canopy (pp. 120, 262). In addition, Bowman (1963) reports that *Camarhynchus* species spend a little less than 25 percent of their time foraging at the

ground level, while spending the majority of their time foraging above ground (p. 132). The medium tree finch uses its powerful tip-biting bill to search under twigs and foliage, probe crevices in the bark of trees, and cut into tough woody tissues in search of insect larvae (Bowman 1963, pp. 117, 125), which is its primary food source (Bowman 1963, p. 121). The species also feeds, to a lesser extent, on seeds (Bowman 1963, p. 121), nectar, young buds, and leaves (Castro and Phillips 1996, p. 130).

The peak breeding season for the medium tree finch is February–April (O'Connor *et al.* 2008b, in preparation). The species prefers to nest in the tree *Scalesia pedunculata* (O'Connor *et al.* 2008b, in preparation), and has an average clutch size of two to four eggs (O'Connor *et al.* 2008a, in preparation). The nests of Darwin's finches are similar in construction from one species to another; the male builds a dome-shaped nest, made from twigs, grass, pieces of bark, lichens, feathers, and other materials, with a small, round, side entrance (Jackson 1985, p. 191). In a study of the nesting success of the small tree finch in the highlands of Santa Cruz Island in the Galapagos, Kleindorfer (2007) found that all nests were located 6 to 10 m (20 to 33 ft) above the ground, on horizontal branches of *Scalesia pedunculata*, and positioned by interweaving surrounding smaller twigs and leaves (p. 796).

#### Range and Distribution

According to BirdLife International (2008), the current range of the medium tree finch is estimated to be 23 km<sup>2</sup> (9 mi<sup>2</sup>). The species' range encompasses the entire highland area of Floreana; however, the medium tree finch is restricted to fragmented forest patches within the highlands, which total approximately 12 km<sup>2</sup> (4.5 mi<sup>2</sup>) to 17 km<sup>2</sup> (6.5 mi<sup>2</sup>) of available habitat (O'Connor *et al.* 2008b, in preparation). Harris (1982) reported that the species was common in the highlands on Floreana and uncommon to rare on the coast (p. 150).

Population numbers of this species are poorly known, with an indirect estimation at 1,000 to 2,499 birds in the year 2000 (BirdLife International 2008). Fessl *et al.* (2006a) reported that there were about 300 breeding pairs remaining on Floreana (p. 745). In a study by O'Connor *et al.* (2008b, in preparation), they compared bird abundance survey data from 2004 and 2008 in order to estimate the population density of the medium tree finch in the highlands of Floreana. Based on the results of their study, O'Connor *et al.* (2008b, in preparation) estimate that the

total medium tree finch population currently consists of 860–1,220 individuals (72 birds/km<sup>2</sup> (28 birds/mi<sup>2</sup>), calculated as an average over the 4 survey sites in 2008). Their study also showed that the population density of the species at Cerro Pajas, the largest patch of prime *Scalesia* habitat (9 km<sup>2</sup> (3.5 mi<sup>2</sup>)), decreased from 154 birds/km<sup>2</sup> (59 birds/mi<sup>2</sup>) in 2004 to 60 birds/km<sup>2</sup> (23 birds/mi<sup>2</sup>) in 2008 (O'Connor *et al.* 2008b, in preparation).

#### Conservation Status

The medium tree finch is identified as a "critically endangered" species under Ecuadorian law, Decree No. 3,516—Unified Text of the Secondary Legislation of the Ministry of Environment (ECOLEX 2003b). This poorly known species is considered "Vulnerable" by the International Union for Conservation of Nature (IUCN) because it has a very small range and is restricted to a single island where introduced species are considered a potential threat to the species and its habitat (BirdLife International 2008).

Stotz *et al.* (1996) described the conservation priority for the medium tree finch as "high," which they defined as a species that is "threatened," usually because of range or habitat restriction, and already showing signs of serious population decline (p. 262).

#### Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR 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.

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

Floreana has the longest history of human habitation of any of the Galapagos Islands (Fitter *et al.* 2000, p. 207; Schofield 1989, p. 229); it was first settled in 1832, three years before Darwin's historic visit (Jackson 1985, p. 3; Stewart 2006, pp. 55, 68; Sulloway

2008a, in litt.). Human settlement has resulted in changes to the habitat on Floreana, including clearing of native vegetation for agriculture and ranching, as well as the introduction of nonnative animals and plants (Grant *et al.* 2005, p. 501).

The medium tree finch prefers to nest and forage in the tree *Scalesia pedunculata* (O'Connor *et al.* 2008b, in preparation). Currently, *S. pedunculata* only occurs in small patches in the highlands of Floreana because the highlands have been cleared for agriculture, destroyed by introduced mammals, and outcompeted by invasive plants (O'Connor *et al.* 2008b, in preparation). Although the Galapagos National Park covers 97 percent of the land on the Galapagos Islands, a disproportionate amount of the limited moist highlands falls in the remaining 3 percent (Stewart 2006, p. 105). As a result, a large amount of this area has been cleared or altered for farming, and the rest has been degraded or destroyed by the introduction of animals and plants (Stewart 2006, p. 105). Currently, only 12 km<sup>2</sup> (4.5 mi<sup>2</sup>) to 17 km<sup>2</sup> (6.5 mi<sup>2</sup>) of habitat for the medium tree finch remains in the highlands of Floreana, and the amount of suitable habitat continues to decline due to the factors described below.

#### Agriculture and Ranching

Birds, such as the medium tree finch, are currently facing problems in the highlands of inhabited islands like Floreana, due to the extensive destruction and degradation of habitat resulting from agriculture (BirdLife International 2008; Castro and Phillips 1996, pp. 22–23; Fitter *et al.* 2000, p. 74). On Floreana, the highlands (or *Scalesia* zone) cover an area of approximately 21 km<sup>2</sup> (8 mi<sup>2</sup>) (O'Connor *et al.* 2008b, in preparation). Within this highland forest, approximately 4 km<sup>2</sup> (1.5 mi<sup>2</sup>) has been cleared for agriculture (O'Connor *et al.* 2008b, in preparation). Agriculture is concentrated at higher elevations because of the availability of richer soil and greater moisture (Schofield 1989, p. 233). The *Scalesia* zone is the richest zone in terms of soil fertility and productivity (Jackson 1985, p. 61), and, therefore, has been extensively cleared for agricultural and cattle ranching purposes (Grant 1986, p. 30; Harris 1982, p. 37; Jackson 1985, pp. 61, 233). When the forest is cleared for agriculture and ranching, or when cattle are allowed to roam freely within native vegetation, nesting and foraging sites of the medium tree finch are destroyed, which can have a negative effect on the species (Stotz *et al.* 1996, p. 121).

## Introduced Species

Introduced species are currently considered a major threat to the native species of the Galapagos Islands (Causton *et al.* 2006, p. 121; Fitter *et al.* 2000, p. 218). Since the early 1800s, humans have introduced animals and plants to the Galapagos Islands that have threatened the native vegetation (Schofield 1989, pp. 227, 233).

### Animals

When settlers arrived on the Galapagos Islands, they brought with them domestic animals, some of which escaped and started feral populations (Jackson 1985, p. 233). On Floreana, introduced animals include goats (*Capra hircus*), donkeys (*Equus asinus*), cattle, and pigs (Christensen and Kleindorfer 2008, in preparation; Jackson 1985, p. 232). These animals impact the island by significantly altering the habitat (Grant *et al.* 2005, p. 501; Schofield 1989, pp. 229–233). This impact, as well as predation of endemic species by cats (*Felis catus*) and rats (*Rattus rattus*) (discussed under Factor C), has been linked with the extinction of at least four bird species on the island of Floreana: the large ground finch (*Geospiza magnirostris*), the sharp beaked ground finch (*Geospiza difficilis*), the Floreana mockingbird (*Nesomimus trifasciatus*) (Christensen and Kleindorfer 2008, in preparation; Grant *et al.* 2005, p. 501; Harris 1982, pp. 36–37; Sulloway 1982, pp. 68–69, 88–89), and, most recently, the warbler finch (*Certhidea fusca*) (Grant *et al.* 2005, p. 501).

Introduced animals magnify the detrimental effects of clearing large areas of native vegetation on Floreana for agriculture and ranching (Grant 1986, p. 30), by further degrading and destroying the habitat (Grant *et al.* 2005, p. 501). The habitat of the medium tree finch continues to be altered by herbivore degradation caused by free-ranging, domestic livestock (BirdLife International 2008; Jackson 1985, p. 110; Lawesson 1986, p. 12). Lawesson (1986) reported that the *Scalesia* forest on Floreana is under the most immediate threat from introduced animals (p. 13).

**Goats:** Of all the introduced animals on the Galapagos Islands, goats are the most destructive animals (Fitter *et al.* 2000, p. 218; Schofield 1989, p. 227) and the most serious threat to Galapagos ecosystems (Harris 1982, p. 38; Smith 2005, p. 304). Goats were probably introduced to the Galapagos Islands in the 19th century by whalers, fisherman, and pirates, who were looking for an alternative source of meat (Charles Darwin Research Station 2006a; Fitter *et*

*al.* 2000, p. 218). They were also brought to the islands by settlers as livestock (Charles Darwin Research Station 2006a).

Goats adapt to varying conditions extremely well, and they thrive at all elevations on the Galapagos Islands (Schofield 1989, p. 229), from the arid lowlands to the moist highlands (Fitter *et al.* 2000, p. 218), where the medium tree finch occurs. They have a rapid reproductive rate, which has allowed their population to flourish at the expense of native animals and vegetation (Jackson 1985, pp. 232–233).

Goats destroy native vegetation by eating plants down to the ground (Smith 2005, p. 304), converting forests into barren grasslands and causing erosion (Charles Darwin Research Station 2006a). Their ability to eat almost anything has allowed goats to quickly eat their way across an island (Smith 2005, p. 304). A study of goats on Santiago Island in the Galapagos showed that at higher elevations, grazing by goats had eliminated young trees of *Scalesia pedunculata*, *Zanthoxylum fagara*, and *Psidium galapageium*, in addition to the forest understory (Schofield 1989, p. 229). On Floreana, Schofield (1989) reports that approximately 77 percent of the plant species, other than cacti, were either reduced in number or completely eliminated by goats (p. 229). Although feral goats have caused considerable damage to the vegetation in the highlands of Floreana, where the medium tree finch occurs (O'Connor 2008, in litt.), an eradication program begun in 2006 has most likely eliminated goats from the island of Floreana (Gardener 2008, in litt.; O'Connor 2008, in litt.).

**Cattle:** Cattle were introduced to Floreana in 1832 (Hoeck 1984, as cited in Schofield 1989, p. 231). Initially, cattle were kept at lower elevations, but with inadequate moisture available in the lower zones, they were allowed to move into the highlands (Kastdalen 1982, p. 9), where the medium tree finch occurs. Cattle trample and heavily graze upon native vegetation (Hamann 1981 and Van der Werff 1979, as cited in Schofield 1989, p. 231). When allowed to roam freely through highland forests, they essentially destroy the understory layer (Stotz *et al.* 1996, p. 121). On Santa Cruz Island, cattle inhibited growth of *Scalesia pedunculata* (Kastdalen 1982, p. 8). Schofield (1989) reported that no organized effort had been made to eliminate cattle, but the Galapagos National Park Service does encourage ranchers to fence in herds on Floreana (p. 232). Although most cattle have been

removed from within the boundaries of the Galapagos National Park (Gardener 2008, in litt.), cattle are still present in the highlands of Floreana and regularly roam freely within the habitat of the medium tree finch (O'Connor 2008, in litt.).

**Donkeys:** In 1887, large numbers of donkeys (*Equus asinus*) were seen grazing on hillsides and at the summit on Floreana (Slevin 1959, as cited in Schofield 1989, p. 232). By 1932, donkeys had already tramped out regular paths through the vegetation on Floreana (Wittmer 1961, as cited in Schofield 1989, p. 232). On Santa Cruz, Kastdalen (1982) noted that they followed cattle into the humid highlands (p. 9). Studies have shown that donkeys on Floreana have depleted some populations of *Scalesia* spp. and *Alternanthera nesiototes*, another endemic plant (Eliasson 1982, p. 10). Today, donkeys still persist in the highlands of Floreana (Gardener 2008, in litt.; O'Connor 2008, in litt.), where the medium tree finch occurs.

**Pigs:** Pigs (*Sus scrofa*) have lived on the Galapagos Islands for over 150 years (Schofield 1989, p. 232). In 1835, Darwin remarked upon the many wild pigs he observed in the forests on Floreana (Schofield 1989, p. 232). Pigs live primarily at higher elevations, where abundant forage is available year-round (Schofield 1989, p. 232). Pigs destroy native vegetation (Jackson 1985, p. 233) directly by digging up and eating plants (Hoeck 1984, as cited in Schofield 1989, p. 232). Currently, pigs continue to be maintained in the agricultural areas of the highlands of Floreana (O'Connor 2008, in litt.), where the medium tree finch occurs.

**Eradication Programs:** Since the Galapagos National Park and the Charles Darwin Foundation were established in 1959, efforts to control and eradicate introduced animals have been ongoing (Galapagos Conservancy n.d.(a)). In 1965, the Charles Darwin Research Station began the first eradication program to rid the Galapagos island of Santa Fe of goats (Fitter *et al.* 2000, p. 218). Ten years after the program began, the last goat was culled, and now the vegetation on the island has recovered and native species are beginning to thrive once again (Fitter *et al.* 2000, p. 218). Over the years, many of these control programs have been successful in eradicating introduced animals from some of the Galapagos Islands, including exterminating 25,000 feral pigs on Santiago Island (Smith 2005, p. 305); removing goats from Española, Plaza Sur, Santa Fe, Marchena and Rabida Islands (Smith 2005, p. 305); and the very successful "Project Isabela,"

which recently eliminated goats from Pinta Island, donkeys and goats from northern Isabela Island, and donkeys, goats, and pigs from Santiago Island (Galapagos Conservancy n.d.(b)).

As a result of the success of Project Isabela, the Charles Darwin Foundation is planning several projects, in partnership with the Galapagos National Park Service, including eradication of goats and donkeys from Floreana (Charles Darwin Foundation n.d.(c)). In December 2006, the Galapagos National Park started a project with the goal of restoring the ecology of Floreana (Galapagos Conservation Trust News 2007). The first phase of "Project Floreana" is to eradicate some of the introduced animals, such as goats and donkeys, in order to stop the continuing degradation of the vegetation of the island and allow some of the native and endemic plant species to recover (Galapagos Conservation Trust News 2007).

From the experience gained during Project Isabela, the program was able to eradicate 98 percent of the donkeys and goats on Floreana in 22 days (Galapagos Conservation Trust News 2007). Currently, goats have been unofficially eradicated from Floreana; however, the elimination of donkeys is still in progress (Gardener 2008, in litt.). A follow-up census and control effort will be conducted next year to determine the results of this eradication program (Gardener 2008, in litt.). Due to the removal of these invasive species, it is expected that within the next few years the benefits to the ecosystem on Floreana will be seen (Galapagos Conservation Trust News 2007). This is expected to result in an increase in native flora and fauna, and the repopulation by native flora and fauna of areas previously destroyed on Floreana by herbivore degradation (Galapagos Conservation Trust News 2007). However, at this time, we believe that introduced species still pose a threat to the medium tree finch and its habitat.

#### Plants

Introduced plants outcompete native vegetation for sunlight, water, and nutrients (Smith 2005, p. 304). Since agriculture is concentrated at higher elevations because of the rich soil and moisture available in these areas, introduced plants are more frequently found in the humid highland forests and often escape from cultivated areas into native vegetation (Schofield 1989, p. 233). Schofield (1989) found that accidental escape of introduced plant species, as well as the purposeful introduction of these species, had

altered the highland habitat where tree finches occur (pp. 233–235).

Christensen and Kleindorfer (2008, in preparation) found that the medium tree finch frequently forages on introduced fruit species. They report that this observation may suggest that the species is able to adapt to and potentially benefit from this change in their environment (Christensen and Kleindorfer 2008, in preparation). However, they did not observe any species of tree finch, including the medium tree finch, nesting in an introduced plant species (Christensen and Kleindorfer 2008, in preparation). A further study by O'Connor *et al.* (2008b, in preparation) found that the majority (99 percent) of nests built by medium tree finches were constructed in native species, *Scalesia pedunculata* (83 percent), *Zanthoxylum fagara* (14 percent), and *Croton scouleri* (2 percent), with 1 percent of the nests built in an introduced species, guava (*Psidium guajava*).

On Floreana, small populations of *Scalesia* forest still exist in the highlands, but these areas are under pressure and competition from the aggressive *Psidium guajava* and *Lantana camara* (Lawesson 1986, p. 13).

*Guava*: The cultivated guava (*Psidium guajava*) with its edible fruits is the most widespread introduced plant species on the Galapagos Islands (Schofield 1989, p. 233). Guava has been characterized as out of control and invading vast areas of native vegetation in the humid highlands on Floreana (Eckhardt 1972, p. 585; Eliasson 1982, p. 11; Tuoc 1983, p. 25). It is an aggressive, introduced plant that covers 8,000 ha (19,768 ac) on Floreana (Parque Nacional Galápagos n.d.(a)).

The dispersal of guava is aided by introduced cattle, which eat the fruits, and then wander from the farm into the National Park and excrete the seeds in their dung (De Vries and Black 1983, p. 19; Tuoc 1983, p. 25). In addition, as cattle graze, they trample other vegetation, providing the open spaces and abundant light needed for the germination of guava seeds (Van der Werff 1979, as cited in Schofield 1989, p. 233). Once guava becomes established in an open habitat, they grow quickly and shade seedlings of native species like *Scalesia pedunculata*, thus preventing their growth (Parque Nacional Galápagos n.d.(a); Perry 1974, p. 12).

One obvious step to take in order to minimize the further spread of guava is to fence cattle (De Vries and Black, p. 19; Tuoc 1983, p. 25). Although some residents have already done this, herds of free-ranging cattle are unable to be

restricted in this manner (Schofield 1989, pp. 233–234). In 1971, a campaign was started to cut down guava trees on Santa Cruz Island (Schofield 1989, p. 234). One report indicated that more than 95,000 guava trees were eliminated between 1980 and 1981 (Tuoc 1983, p. 25). Schofield (1989) believes that this program should be expanded to other islands with large populations of guava (p. 234). Currently, we have no information to indicate that a program to eliminate guava has occurred on Floreana.

*Other Plant Species*: Floreana is also impacted by other introduced plant species. *Lantana camara* was introduced as an ornamental on Floreana in 1832, and now covers 3,000 ha (7,413 ac) (Parque Nacional Galápagos n.d.(a)). It is a quick spreading, tropical shrub that displaces native vegetation, and is now found on Floreana from the arid region up to the *Scalesia* forest (Hamann 1984, as cited in Schofield 1989, p. 234). Citrus trees (*Citrus* spp.) have been reported as "common" (Eliasson 1982, p. 11) and have invaded the native vegetation at higher elevations on Floreana (Eliasson 1982, p. 11; Porter 1973, p. 276). Cattle and pigs aid in the further spread of citrus trees (*Citrus* spp.) by feeding on the fruits and dispersing seeds in new locations (Wittmer 1961, as cited in Schofield 1989, p. 234).

#### Summary of Factor A

The medium tree finch is found primarily in the moist highland forests (*i.e.*, the *Scalesia* zone) on the island of Floreana. Since the island was first settled in 1832, the habitat of the medium tree finch has been cleared for agriculture and ranching, and further degraded by introduced animals and plants. Herbivores, such as donkeys, cattle, and pigs, continue to destroy the species' habitat by trampling and grazing heavily on native vegetation, including *Scalesia pedunculata*, the tree primarily used by the medium tree finch for nesting and foraging. In addition, cattle and pigs help to spread introduced plants, such as guava and citrus trees, by feeding on the fruits and depositing the seeds into native vegetation. These introduced plants outcompete native species, such as *Scalesia pedunculata*, reducing the availability of nest sites for the medium tree finch. Although an eradication program was started in December 2006 to eliminate goats and donkeys from Floreana, we are not aware of any current programs to remove cattle and pigs from the island. As a result, these introduced species will continue to destroy and degrade the habitat of the

medium tree finch, which has already been reduced to an area of only 12 km<sup>2</sup> (4.5 mi<sup>2</sup>) to 17 km<sup>2</sup> (6.5 mi<sup>2</sup>). Therefore, we find that habitat destruction of the moist highland forests of Floreana, as a result of agriculture and introduced species, is a threat to the continued existence of the medium tree finch.

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

We are not aware of any scientific or commercial information that indicates overutilization of the medium tree finch for commercial, recreational, scientific, or educational purposes poses a threat to this species. As a result, we are not considering overutilization to be a contributing factor to the continued existence of the medium tree finch.

#### *C. Disease or Predation*

##### Disease

The recent discovery of an introduced parasitic fly (*Philornis downsi*) on Floreana Island (Kleindorfer, pers. comm., as cited in Grant *et al.* 2005, p. 502; Wiedenfeld *et al.* 2007, p. 17) has raised concerns about the impact this parasite might be having on the medium tree finch (Dudaniec *et al.* 2008; Fessl *et al.* 2006b, p. 59). In March 1997, Fessl, Couri, and Tebbich observed the presence of *Philornis downsi* in the nests of Darwin's finches on the Galapagos Islands for the first time (Fessl and Tebbich 2002, p. 445).

*Philornis downsi* was sampled by the entomologists S.B. and J. Peck, and B.J. Sinclair, in 1989, although the fly was not formally identified until the collections were examined in detail in 1998 (Fessl and Tebbich 2002, p. 445; Fessl *et al.* 2001, p. 318). However, it now appears that *P. downsi* was present on the Galapagos Islands at least 40 years ago, as it was recently identified from collections made on Santa Cruz Island in 1964 (Causton *et al.* 2006, pp. 134, 143). We are not aware of any information indicating when *P. downsi* may have been introduced to the island of Floreana.

*Philornis downsi* is a Muscidae (fly) from a genus of obligate bird parasites (Couri 1985, as cited in Fessl and Tebbich 2002, p. 445; Fessl *et al.* 2001, p. 317), depending entirely on a host for its survival. The adult fly is non-parasitic, and feeds on fruits, flowers, and decaying material (Fessl *et al.* 2001, p. 317; Fessl *et al.* 2006b, p. 56). Larvae of *P. downsi* belong to the group of external haematophages (bloodsuckers); first, second, and third instar (developmental stage) larvae are blood feeders, believed to suck blood from

nestlings during the night and then retreat to the bottom of the nest during the day (Dodge and Aitken 1968 and Skidmore 1985, as cited in Fessl *et al.* 2006b, p. 56). Adult flies lay eggs inside the nasal cavities of newly hatched nestlings (usually 1 to 3 days old), which hatch into first instar larvae (Muth 2007, as cited in Dudaniec *et al.* 2008; Fessl *et al.* 2006a, p. 744). As the larvae reach their second instar stage, they exit the nasal cavities of nestlings and begin to live as nest-dwelling haematophagous larvae (Fessl *et al.* 2006a, p. 744). Second and third instar larvae of *P. downsi* seem to be exclusively external (Fessl *et al.* 2006b, p. 59), feeding on the blood and tissues of nestlings (Dudaniec and Kleindorfer 2006, pp. 15–16). The majority of larvae reach their third instar stage at the time of host fledging (Dudaniec *et al.* 2008). At this stage, the larvae of *P. downsi* detach from the nestling and form their pupae at the bottom of the nesting material, remaining for approximately 2 weeks before emerging as adult flies (Dudaniec and Kleindorfer 2006, p. 16; Fessl *et al.* 2006b, p. 56).

*Philornis downsi* occurs in finch nests on Floreana (Wiedenfeld *et al.* 2007, p. 17), and has been shown to significantly lower fledgling success of the finches (Fessl and Tebbich 2002, pp. 448–450). A number of studies have associated *Philornis* parasitism with mortality (Fessl and Tebbich 2002, p. 448), reduced nestling growth and development (Fessl *et al.* 2006b, p. 58), and a reduction in hemoglobin level (Dudaniec *et al.* 2006, p. 88).

A study by Fessl and Tebbich (2002) on Santa Cruz Island found that 97 percent of finch nests were infected with the *Philornis downsi* parasite, both in the lower arid zone and the higher *Scalesia* zone of the island (p. 449). Parasitism by *P. downsi* caused complete brood loss in approximately 19 percent of the infected finch nests and partial brood loss (defined as the successful fledging of one or two nestlings) in an additional 8 percent of the finch nests studied (Fessl and Tebbich 2002, p. 448). They also found that in parasitized nests, the percentage of successful fledglings differed significantly depending upon brood size; nests with only one nestling always failed, nests with two nestlings successfully fledged nestlings 50 percent of the time, and nests with three or four nestlings successfully fledged nestlings 75–85 percent of the time (Fessl and Tebbich 2002, p. 448). The high nestling mortality in small broods may be the result of the high parasite-to-nestling ratio, as compared to larger broods (Fessl and Tebbich 2002, p. 449).

Since *P. downsi* infects nests regardless of the number of nestlings (Fessl and Tebbich 2002, p. 450), large broods may be able to spread the larval load among more nestlings, thereby reducing the number of larvae affecting each individual nestling.

In an experimental study conducted on Santa Cruz Island, Fessl *et al.* (2006b) found that high mortality of nestlings was directly attributable to parasitism by *Philornis downsi*, as evidenced by a near threefold increase in fledgling success in a parasite-reduced group (86.6 percent) versus a parasite-infested control group (33.9 percent) (pp. 58–59). They also found that within 4 days, mass gain was significantly higher (an almost two-fold positive difference) in the parasite-reduced group than in the parasite-infested control group (Fessl *et al.* 2006b, p. 58). In studies of other avian species, fledgling body mass has been found to be a key factor for juvenile survival (Magrath 1991, pp. 343–344; Tinbergen and Boerlijst 1990, pp. 1123–1124). As a result, Fessl *et al.* (2006b) concluded that the results of their study showed that given the significant difference in body mass between the two groups, parasitized nests will likely provide less recruitment into the breeding population (p. 59). Further, because species with small broods have been found to suffer higher parasite loads and higher nestling mortality (Fessl and Tebbich 2002, pp. 445, 449–450), infestation of *P. downsi* on species with naturally low clutch sizes, such as the medium tree finch, is of particular concern (Fessl *et al.* 2006b, p. 59).

Dudaniec *et al.* (2006) found a significant negative correlation between *Philornis downsi* parasite intensity and hemoglobin concentrations, and a positive correlation between parasite intensity and immature red blood cell counts, in small ground finches studied on Santa Cruz and Floreana Islands (pp. 88, 90, 92). Small ground finch nestlings with higher *P. downsi* intensities suffered from lower hemoglobin concentrations and reduced fledging success (Dudaniec *et al.* 2006, p. 92). Furthermore, nestlings with lower parasite intensity had higher hemoglobin levels and increased fledging success (Dudaniec *et al.* 2006, p. 93). Dudaniec *et al.* (2006) also found a negative correlation between the number of immature red blood cells and hemoglobin levels in nestlings (p. 92).

The fitness impacts to nestlings of lower hemoglobin levels are likely to be significant (Dudaniec *et al.* 2006, p. 93). The results of a study by O'Brien *et al.* (2001) showed that low hemoglobin levels in nestlings reduce the transport

of oxygen to tissues (p. 75). Thus, fledglings that are anemic (hemoglobin deficient) from parasite feeding may have a reduced ability to sustain flight and, consequently, a reduced ability to escape predators and find food (O'Brien *et al.* 2001, p. 75). The high hemoglobin levels found by Dudaniec *et al.* (2006) in mature birds, combined with their observation that adult finches were never found to be actively parasitized, suggest that adult birds are not physiologically affected by *Philornis downsi* (p. 92).

Fessl *et al.* (2006a) reported extremely high levels of blood loss in nestlings (18 to 55 percent) caused by *Philornis downsi* larvae (p. 745). Daily blood loss over 10 percent is likely to have negative impacts on nestlings, including health problems and developmental deficiencies, while blood loss over 25 percent would become lethal (Kaneko, pers. comm., as cited in Gold and Dahlsten 1983, p. 569).

In 2006, nesting success in the medium tree finch was examined for the first time (Fessl *et al.* 2006a, p. 746). The study by O'Connor *et al.* (2008a, in preparation) on tree finches in the highlands of Floreana showed that the medium tree finch had the highest *Philornis downsi* parasite intensity (an average of 52 parasites per nest), compared to small and large tree finches. Of 63 medium tree finch nests, only 16 nests had nestlings that survived to 6 days post-hatching, and only 4 nests produced fledglings (O'Connor *et al.* 2008a, in preparation). Most nests failed to produce fledglings; 68.8 percent (11 of 16) of medium tree finch nests suffered total brood loss, while 18.8 percent (3 of 16) of nests had partial brood loss (O'Connor *et al.* 2008a, in preparation). *Philornis downsi* larvae or pupae were found in 100 percent (16 of 16) of medium tree finch nests, and all nestlings had *P. downsi* parasites (O'Connor *et al.* 2008a, in preparation). The majority (54 percent) of nestling mortality in medium tree finches was due to parasitism by *P. downsi* (O'Connor *et al.* 2008a, in preparation). All nestlings found dead in nests had large open wounds on their bodies and significant loss of blood or body fluids, all of which are signs of *P. downsi* parasitism (O'Connor *et al.* 2008a, in preparation).

O'Connor *et al.* (2008a, in preparation) discuss the reasons why the *Philornis downsi* parasite intensity is high in the medium tree finch. One possibility they explain is that the medium tree finch's preferred breeding habitat is next to an agricultural area, where the close proximity of the agriculture fields (with citrus trees and

other fruits) act as a feeding location for the adult flies (O'Connor *et al.* 2008a, in preparation). In addition, moist highlands favor consistent breeding of medium tree finches, thus providing flies with a dependable supply of nestlings for *P. downsi* larvae to feed upon (O'Connor *et al.* 2008a, in preparation). Currently, the medium tree finch has the highest *P. downsi* parasite intensity of any finch species on Floreana, and the second highest of any finch species studied on the Galapagos Islands (O'Connor *et al.* 2008a, in preparation).

A study by Wiedenfeld *et al.* (2007) found that there was a significant increase in the number of *Philornis downsi* parasites (larvae, pupae, or puparia) per nest at higher altitudes (*i.e.*, in the humid highlands) (pp. 17–18). According to their study, the distribution of *P. downsi* seems to be related to the amount of humidity and moisture available on the islands (Wiedenfeld *et al.* 2007, p. 18). Although it appears that the fly does more poorly in dry conditions (either in the lowland, arid zone of islands, or during drought), birds also do more poorly in these situations (Wiedenfeld *et al.* 2007, p. 18). In addition, during years of abundant rainfall when birds breed more successfully, the flies are also likely to be more plentiful, and, therefore, can cause higher mortality (Wiedenfeld *et al.* 2007, p. 18).

It is believed that finches do not suffer from any type of endemic, haematophagous ectoparasite (a bloodsucking parasite that lives on the outside of its host, and not within the host's body) (Fessl *et al.* 2006b, p. 56). Therefore, they have not developed an adaptive response to this kind of introduced pathogen (Altizer *et al.* 2003, as cited in Dudaniec and Kleindorfer 2006, p. 19). Because the medium tree finch is newly colonized by *Philornis downsi*, it may experience significant initial mortality since the host has not yet developed a strong behavioral or immunological defense mechanism against the parasite (Dudaniec and Kleindorfer 2006, pp. 18–19).

As many of these studies show, finches have a slim chance of reproducing without avoiding effects of *Philornis downsi* mortality (Dudaniec and Kleindorfer 2006, p. 18; Wiedenfeld *et al.* 2007, p. 18). Causton *et al.* (2006) developed a system to evaluate the invasiveness of insect species introduced to the Galapagos Islands based on trophic functional role, distribution in the Galapagos, and their history of invasiveness elsewhere (p. 121). *Philornis downsi* was given the highest invasiveness ranking affecting

fauna endemic to the Galapagos Islands, because *P. downsi* seriously impacts species of high conservation value in the Galapagos (Causton *et al.* 2006, pp. 123, 134). Grant *et al.* (2005) reported that the decline and possible local extinction of one of Darwin's finches, the warbler finch (*Certhidea fusca*), on Floreana by 2004 may have been partially caused by *P. downsi* (p. 502; Fessl *et al.* 2006b, p. 59), although there is no conclusive evidence (Dudaniec and Kleindorfer 2006, p. 13).

It is best to eliminate invasive species before they are able to adapt to the local environment in which they have colonized (Frankham 2005, p. 385). However, for *Philornis downsi*, this introduced parasitic fly has become firmly established in the Galapagos Islands, prompting the need for a long-term eradication program in conjunction with continuous quarantine and monitoring practices (Dudaniec *et al.* 2008).

Programs to eradicate *Philornis downsi* from the Galapagos Islands are difficult and costly (Fessl *et al.* 2006b, p. 59). In the experimental study by Fessl *et al.* (2006b), they found that a single insecticide treatment of 1 percent pyrethrin solution (done at a nestling age of 4 days) was sufficient to reduce the number of parasites per nest to almost zero (pp. 57–59). This treatment offers one short-term solution to locally protect single nests of species of high conservation concern (Fessl *et al.* 2006b, p. 59). However, this treatment is not practicable as a long-term solution for controlling the fly throughout the Galapagos Islands because it would be extremely labor intensive and would require the nests of all host species to be treated on every island in the Galapagos where *P. downsi* is found (at least 11 islands; Wiedenfeld *et al.* 2007, p. 16).

The Charles Darwin Foundation (CDF) has begun an effort to develop biological control approaches for *Philornis downsi* (Charles Darwin Foundation n.d.(c)). In 2008, CDF received \$58,000 for Phase I of the CDF Priority Project: "Control of the parasitic fly *Philornis downsi*" (Charles Darwin Foundation n.d.(a)). This project will study the biology and life history of *P. downsi*, aiding in the development of effective, long-term control methods that will not harm other species (Charles Darwin Foundation 2007). CDF reports that control methods are urgently needed to eliminate the threat of extinction among bird species, such as the medium tree finch, affected by this parasite (Charles Darwin Foundation 2007).

## Predation

Floreana has a suite of introduced predators including black rats (*Rattus rattus*) and cats (*Felis catus*) (Kleindorfer *et al.* 2008, in preparation). These predators feed on eggs, nestlings, and even adult birds (Castro and Phillips 1996, p. 22), and have depleted native populations (Grant *et al.* 2005, p. 501; Jackson 1985, p. 232).

**Rats:** Black rats are one of the worst introduced species to the Galapagos Islands, destroying bird nests and eggs, and consuming hatchlings (Charles Darwin Foundation n.d.(b); Charles Darwin Research Station 2006b). Rats arrived on the Galapagos Islands on ships beginning in the late 1600s, and currently are found on all inhabited islands, including Floreana (Charles Darwin Research Station 2006b). Rats are currently present in the highlands of Floreana, and can be seen running up and down trees, or along the forest floor in the habitat of the medium tree finch (O'Connor 2008, in litt.). Because rats can easily climb, they have been implicated in the population declines of tree-nesting birds, such as the mangrove finch (*Camarhynchus heliobates*) (Charles Darwin Research Station 2006b).

The CDF's long-term plan is to successfully eradicate introduced rats on all islands, a necessary measure in order to restore the Galapagos Islands and its endemic species (Charles Darwin Research Station 2006b). Currently, a control program is ongoing in the highlands of Floreana to control rats in the nesting area of the Galapagos petrel (*Pterodroma phaeopygia*) (Gardener 2008, in litt.). The project is being conducted at Cerro Pajas (Cruz and Cruz 1996, pp. 25–30), the site of the largest patch of prime *Scalesia* habitat (9 km<sup>2</sup> (3.5 mi<sup>2</sup>)) (O'Connor 2008, in litt.), where the medium tree finch occurs. Although an eradication program has begun, it has not yet been completed, and therefore, rats remain a threat to the medium tree finch.

A study of tree finches in the highlands of Floreana by O'Connor *et al.* (2008a, in preparation) found that one-third of medium tree finch nests experienced nestling predation (in both years, 2006 and 2008), and egg depredation was observed in 22 percent of the nests (but only in 2008). Although nest predation was not observed directly, the identity of the predators could be inferred from the condition of the nest (O'Connor 2008, in litt.). It is likely that rats were predominantly responsible for the predation (O'Connor 2008, in litt.). Because agricultural areas are close to the breeding sites of the

medium tree finch, they provide support for the continued persistence and movement of introduced predators, mainly rodents (O'Connor *et al.* 2008a, in preparation).

**Cats:** Cats are highly predatory animals, targeting birds and other native species (Charles Darwin Foundation n.d.(b); Charles Darwin Research Station 2006c; Smith 2005, p. 304). Cats were introduced to the Galapagos Islands by ships and as domestic pets of settlers (Charles Darwin Research Station 2006c). Today, cats are currently found in the agricultural areas of the highlands of Floreana (Gardener 2008, in litt.; O'Connor 2008, in litt.), where the medium tree finch occurs.

Both feral and domestic cats prey upon and impact the survival of Darwin's finches, and are a threat to endemic species on Floreana (Charles Darwin Research Station 2006c). In the 19th century, cats may have caused significant declines in the populations of large ground finches, sharp-beaked ground finches, and mockingbirds, pushing them toward extinction on Floreana (Grant *et al.* 2005, p. 501).

The Galapagos National Park Service and the CDF are working to control and eradicate domestic and feral cats on all of the islands (Charles Darwin Research Station 2006c). This plan includes working with communities to gain acceptance of and compliance with the sterilization or removal of domestic cats, and the development of an eradication program to eliminate feral cats from natural areas on all populated islands, such as Floreana (Charles Darwin Research Station 2006c).

## Summary of Factor C

*Philornis downsi*, an introduced parasitic fly, poses a significant threat to the survival of the medium tree finch. The larvae feed on finch nestlings causing mortality, reduced nestling growth, lower fledgling success, and a reduction in hemoglobin levels, which all combine to severely affect the recruitment dynamics of the species. The medium tree finch has the highest *P. downsi* parasite intensity of all the finch species found on Floreana, and the second highest of any finch species studied on the Galapagos Islands. Although a project examining the biology of *P. downsi* and how to control it was begun in 2008, a long-term control method for the parasitic fly has not yet been developed. As a result, the medium tree finch and its reproductive success will continue to be negatively impacted by *P. downsi*. Therefore, we find that parasitism by *Philornis downsi* is a significant threat to the continued existence of the medium tree finch.

Introduced predators on Floreana, such as black rats and cats, feed on eggs and nestlings of birds, causing dramatic reductions in native populations. One study found that 33 percent of medium tree finch nests experienced nestling predation, while egg depredation was observed in 22 percent of the nests. Although nest predation was not observed directly, rats are most likely responsible for much of the predation. In an effort to help restore endemic species on the Galapagos Islands, one goal of CDF was to develop programs to eradicate introduced rats and cats on all islands. Even though an effort to eliminate rats from the Galapagos petrel nesting area in the highlands of Floreana has begun, it has not yet been completed. Furthermore, we do not have any information to indicate that an eradication program for cats has begun on the island of Floreana. Therefore, we find that predation is a threat to the continued existence of the medium tree finch.

## D. Inadequacy of Existing Regulatory Mechanisms

The medium tree finch is identified as a "critically endangered" species under Ecuadorian law and Decree No. 3,516—Unified Text of the Secondary Legislation of the Ministry of Environment of 2002 (ECOLEX 2003b). Decree No. 3,516 of 2002 summarizes the law governing environmental policy in Ecuador and provides that the country's biodiversity be protected and used primarily in a sustainable manner (ECOLEX 2003b). Appendix 1 of Decree No. 3,516 lists the Ecuadorian fauna and flora that are considered threatened or in danger of extinction. Species are categorized as critically endangered (En peligro crítico), endangered (En peligro), or vulnerable (Vulnerable).

Resolution No. 105—Regulatory Control of Hunting Seasons and Wildlife Species in the Country and Agreement No. 143—Standards for the Control of Hunting Seasons and Licenses for Hunting of Wildlife, regulate and prohibit commercial and sport hunting of all wild bird species, except those specifically identified by the Ministry of the Environment or otherwise permitted (ECOLEX 2000; ECOLEX 2003a). The Ministry of the Environment does not permit commercial or sport hunting of the medium tree finch because of its status as a "critically endangered" species (ECOLEX 2003b). However, we do not consider hunting (Factor B) to be a threat to the medium tree finch, so this law does not address any of the threats to the species.

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). Ecuador designated 97 percent of the Galapagos land area as the National Park, leaving the remaining 3 percent distributed between the inhabited areas on Santa Cruz, San Cristóbal, Isabela, and Floreana Islands (Jackson 1985, p. 230; Schofield 1989, p. 236). A disproportionate amount of the limited moist highlands falls in the remaining 3 percent (Stewart 2006, p. 105). The land is divided into various zones signifying the level of human use (Parque Nacional Galápagos n.d.(b)). Although Floreana Island includes a large “conservation and restoration” zone, it does include a significant “farming” zone (Parque Nacional Galápagos n.d.(b)), where agricultural and grazing activities continue to impact the habitat.

In March 1998, the National Congress and the Ecuadorian President enacted the Law of the Special Regimen for the Conservation and Sustainable Development of the Province of the Galapagos, which 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).

As a result, 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)). Inspectors are stationed at points of entry and exit on the Galapagos Islands and Continental Ecuador, where they check freight and luggage for permitted and prohibited items (Charles Darwin Foundation n.d.(d)). 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 on 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 on the Galapagos Islands (Causton *et al.* 2006, p. 121).

The April 2007 World Heritage Centre–IUCN monitoring mission report assessed the state of conservation on the Galapagos Islands based on information gathered during their monitoring mission and multiple meetings, and found continuing problems (UNESCO World Heritage Centre 2007). The report found deficiencies that preclude the full application and enforcement of the Special Law for Galapagos (UNESCO World Heritage Centre 2007). Also, although the risk from invasive species is rapidly increasing, the report found that the Agricultural Health Service of Ecuador (SESA) and SICGAL do not have adequate staff and capacity to deal with the nature and scale of the problem (UNESCO World Heritage Centre 2007). SICGAL estimates that 779 invertebrates entered the Galapagos Islands via aircraft in 2006 (UNESCO World Heritage Centre 2007). In addition, the report found that the staff of the Galapagos National Park lack 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 (UNESCO World Heritage Centre News 2007b). UNESCO World Heritage Centre reports that, despite an excellent legal framework, national government institutions encounter difficulties in ensuring full application of laws (UNESCO World Heritage Centre News 2007b).

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, due to threats to this site posed by invasive species, increasing tourism, and immigration, in June 2007, the World Heritage Committee placed the Galapagos on the “List of World Heritage in Danger,” with the intent of increasing support for the islands’

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. dollars (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.

### Summary of Factor D

Ecuador has developed numerous laws and regulatory mechanisms to administer and manage wildlife on the Galapagos Islands. However, these laws and regulatory mechanisms do not target reducing the threats to this species. The medium tree finch is listed as “critically endangered” under Ecuadorian law. Although 97 percent of the land on the Galapagos Islands is designated as the National Park, some of the land on Floreana is identified as a “farming” zone, where agricultural and grazing activities continue to threaten the habitat of the species. Additional regulations have created an inspection and quarantine system in order to prevent the introduction of nonnative species. However, this program does little to eradicate species already introduced to the Galapagos Islands. Therefore, we find that the existing regulatory mechanisms are inadequate to mitigate the current threats to the medium tree finch.

### E. Other Natural or Manmade Factors Affecting Its Continued Existence

We are not aware of any scientific or commercial information that indicates other natural or manmade factors affecting the continued existence of the medium tree finch pose a threat to this species. As a result, we are not considering other natural or manmade factors to be a contributing factor to the continued existence of the medium tree finch.

### Status Determination for the Medium Tree Finch

We have carefully assessed the best available scientific and commercial information regarding the past, present, and potential future threats faced by the medium tree finch. The species is currently at risk throughout all of its range primarily due to the immediate

and ongoing threat of the introduced parasitic fly, *Philornis downsi*. The clearing of native vegetation for agriculture and ranching, the destruction and degradation of habitat caused by introduced animals and plants (Factor A), predation (Factor C), and inadequate existing regulatory mechanisms (Factor D) are also considered to be threats to this species.

*Philornis downsi* is the greatest current threat to the survival of Darwin's finches on the Galapagos Islands (O'Connor *et al.* 2008a, in preparation). As shown in numerous studies (Dudaniec *et al.* 2006; Fessel and Tebich 2002; Fessel *et al.* 2006b; O'Connor *et al.* 2008a), the fitness costs of *P. downsi* parasitism in finches may be severe, with high incidences of nestling mortality, as well as lower fledgling success, reduced nestling growth, and reduced hemoglobin levels in nestlings.

Currently, the medium tree finch has the highest *Philornis downsi* parasite intensity of all the finch species found on Floreana, and the second highest of any finch species studied on the Galapagos Islands. *Philornis downsi* has been found in 100 percent of medium tree finch nests, causing parasitism of all nestlings.

A recent study (O'Connor *et al.* 2008a) showed that only 6.3 percent of active medium tree finch nests produced fledglings, with the majority (54 percent) of nestling mortality caused by *Philornis downsi* parasitism. With severely low reproductive success, the medium tree finch is likely to provide very little recruitment into the breeding population. Since finches are not known to suffer from a similar type of endemic parasite, it appears that they have not yet developed an adaptive response or defense mechanism against *P. downsi*. Therefore, a long-term control method for *P. downsi* is needed in order to eliminate this threat to the species.

The medium tree finch is found primarily in the moist highland forests (*i.e.*, the *Scalesia* zone) on the island of Floreana, which currently covers approximately 21 km<sup>2</sup> (8 mi<sup>2</sup>). Because of the significant amounts of moisture and fertile soil available in the highlands, approximately 4 km<sup>2</sup> (1.5 mi<sup>2</sup>) of the highland forests on Floreana have been altered or cleared for agricultural purposes.

Although the Galapagos National Park covers 97 percent of the land on the Galapagos Islands, the remaining 3 percent includes a large portion of the moist highlands on inhabited islands, such as Floreana, which allows farming to continue in this area today. Introduced animals, both domestic

livestock and feral populations, have magnified the negative effects of clearing large areas of native vegetation for agriculture and ranching. Herbivores destroy the species' habitat on Floreana by trampling and grazing heavily on native vegetation, including *Scalesia pedunculata*, the tree primarily used by the medium tree finch for nesting and foraging. Introduced fruit trees, which have seeds easily spread by cattle and pigs, grow quickly and shade native seedlings of *Scalesia pedunculata*. Even though the Galapagos National Park Service encourages ranchers to fence in their cattle on Floreana, cattle still stray into native vegetation to graze.

Other introduced species, such as black rats and cats, prey on the eggs and nestlings of birds. One study (O'Connor *et al.* 2008a) found that 33 percent of medium tree finch nests experienced nestling predation, while egg depredation was observed in 22 percent of the nests. Agricultural areas close to the breeding sites of the medium tree finch allow for the continued persistence and movement of introduced predators, mainly rats, into the habitat of the medium tree finch.

Although an eradication program has been developed on Floreana to eliminate some of the introduced species, such as donkeys, goats, and rats, we are not aware of current programs to remove other introduced herbivores or introduced predators from Floreana. In addition, the programs to eliminate donkeys and rats from Floreana have not yet been completed; therefore, these introduced species continue to pose a threat to the medium tree finch and its habitat.

Even though the medium tree finch is listed as a "critically endangered" species under Ecuadorian law and its range includes the Galapagos National Park, existing regulatory mechanisms do not adequately protect the habitat of the species, and have not reduced the threats of introduced predators or parasitism by *Philornis downsi*, the primary threat to the medium tree finch.

Sulloway (2008a, in litt.) recently conducted an analysis of the relative numbers of tree finch specimens in the California Academy of Sciences' collections, comparing them to the frequencies found by Dr. Sonia Kleindorfer between 2000 and 2006. His analysis indicates that the medium tree finch is much less common today than it was prior to 1961 (Sulloway 2008a, in litt.). Specifically, the odds of seeing a medium tree finch today are approximately 25 percent what they would have been more than 50 years ago (Sulloway 2008a, in litt.). As reported by Sulloway (2008a, in litt.) and

O'Connor *et al.* (2008b, in preparation), the population density of the medium tree finch is declining. Sulloway (2008b, in litt.) suggests that the decline in the population of the medium tree finch that he reported over the last 50 years is probably not due to the effects of human activities or introduced species. He based this response on the idea that the population of the medium tree finch had done fine for over a century, during which time settlers, introduced animals, and introduced plants had been present on Floreana (Sulloway 2008b, in litt.). More likely, he explains, the source of any significant and sustained changes in population densities of the medium tree finch since the early 1960s is parasitism by *Philornis downsi* (Sulloway 2008b, in litt.). Based on our analysis, we determined that the medium tree finch is currently at risk throughout all of its range primarily due to the immediate and ongoing threat of the introduced parasitic fly, *P. downsi*. However, the clearing of native vegetation for agriculture and ranching, and the destruction and degradation of habitat caused by introduced animals and plants are also considered to be threats to the species.

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." Based on the immediate and ongoing significant threats to the medium tree finch throughout its entire range, as described above, we determine that the medium tree finch is in danger of extinction throughout all of its range. Therefore, on the basis of the best available scientific and commercial information, we are proposing to list the medium tree finch as an endangered species.

#### 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 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 medium tree finch is not native to the United States, no critical habitat is being proposed for designation in this rule.

Section 8(a) of the Act authorizes 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 medium tree finch. These prohibitions, under 50 CFR 17.21, 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 a commercial activity, or to sell or offer for sale in interstate or foreign commerce, any endangered 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.

We may issue permits to carry out otherwise prohibited activities involving endangered and threatened wildlife species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 for endangered species, and at 17.32 for threatened species. With regard to endangered wildlife, a permit must be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities.

#### Peer Review

In accordance with our joint policy with National Marine Fisheries Service, "Notice of Interagency Cooperative Policy for Peer Review in Endangered Species Act Activities," published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert

opinions of at least three appropriate independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our proposed rule is based on scientifically sound data, assumptions, and analyses. We will send copies of this proposed rule to the peer reviewers immediately following publication in the **Federal Register**. We will invite these peer reviewers to comment during the public comment period, on our specific assumptions and conclusions regarding the proposal to list the medium tree finch as endangered.

We will consider all comments and information we receive during the comment period on this proposed rule during our preparation of a final determination. Accordingly, our final decision may differ from this proposal.

#### Public Hearings

The Act provides for one or more public hearings on this proposal, if we receive any requests for hearings. We must receive your request for a public hearing within 45 days after the date of this **Federal Register** publication (see DATES). Such requests must be made in writing and be addressed to the Chief of the Division of Scientific Authority at the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** at least 15 days before the first hearing.

#### Required Determinations

##### *Regulatory Planning and Review* (Executive Order 12866)

The Office of Management and Budget has determined that this rule is not significant under Executive Order 12866.

##### *National Environmental Policy Act* (NEPA)

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. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

##### *Clarity of the Rule*

We are required by Executive Orders 12866 and 12988, and by the Presidential Memorandum of June 1,

1998, to write all rules in plain language. This means that each rule we publish must:

- (a) Be logically organized;
- (b) Use the active voice to address readers directly;
- (c) Use clear language rather than jargon;
- (d) Be divided into short sections and sentences; and
- (e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

#### References Cited

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

#### Author

The primary author of this proposed rule is Monica A. Horton, Division of Scientific Authority, 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.

#### Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

#### **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 a new entry for "Tree finch, medium" in alphabetical order under "BIRDS" to the List of Endangered and Threatened Wildlife to read 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							
*	*	*	*	*	*	*	*
Tree finch, medium .....	<i>Camarhynchus pauper</i>	Ecuador (Galapagos Islands).	Entire .....	E		NA	NA
*	*	*	*	*	*	*	*

\* \* \* \* \*

Dated: November 25, 2008.

**H. Dale Hall,**

*Director, U.S. Fish and Wildlife Service.*

[FR Doc. E8-28998 Filed 12-5-08; 8:45 am]

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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 21**

[FWS-R9-MB-2008-0109; 91200-1231-9BPP]

RIN 1018-AW11

**Migratory Bird Permits; Revision of Expiration Dates for Double-Crested Cormorant Depredation Orders**

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

**ACTION:** Proposed rule; availability of draft environmental assessment; request for public comment.

**SUMMARY:** We, the U.S. Fish and Wildlife Service, propose to extend our two existing depredation orders for double-crested cormorants (*Phalacrocorax auritus*) in the Code of Federal Regulations (CFR) at 50 CFR 21.47 and 21.48 so that we can continue to authorize take of double-crested cormorants without a permit under the terms and conditions of the depredation orders and gather data on the effects of double-crested cormorant control actions. If we do not extend these depredation orders, any action to control depredating double-crested cormorants will require a permit. We have prepared a draft environmental assessment (DEA) to analyze the environmental impacts associated with our proposed extensions. We invite the public to comment on the DEA and our proposed extension. The DEA is posted at <http://www.fws.gov/migratorybirds>.

**DATES:** We will accept comments on the DEA, the proposed extension, or both, that are received or postmarked on or before January 22, 2009.

**ADDRESSES:** You may submit comments on the DEA or the proposed extension by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the instructions for submitting comments.

- *U.S. mail or hand-delivery:* Public Comments Processing, Attn: RIN 1018-AW11; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 222; Arlington, VA 22203-1610. We will not accept e-mails or faxes. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide (see the Public Comments section below for more information).

**FOR FURTHER INFORMATION CONTACT:** Terry Doyle, Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Division of Migratory Bird Management, 4401 North Fairfax Drive, Mail Stop 4107, Arlington, VA 22203-1610, or telephone 703-358-1825.

**SUPPLEMENTARY INFORMATION:**

**Background**

The U.S. Fish and Wildlife Service is the Federal agency delegated the primary responsibility for managing migratory birds. This delegation is authorized by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 *et seq.*), which implements conventions with Great Britain (for Canada), Mexico, Japan, and the Soviet Union (Russia). Part 21 of title 50 of the CFR covers migratory bird permits. Subpart D deals specifically with the control of depredating birds and currently includes eight depredation orders. A depredation order is a regulation that allows the take of specific species of migratory birds, at specific locations and for specific purposes, without a depredation permit.

The depredation orders at 50 CFR 21.47 and 21.48 for double-crested cormorants allow for take of the species under the provisions of our 2003 Environmental Impact Statement (EIS) (68 FR 47603), in which we assessed the

impacts of the depredation orders and determined that they would not significantly affect the status of the species. The EIS is available by contacting us at the address in the **FOR FURTHER INFORMATION CONTACT** section. The depredation orders are scheduled to expire in April 2009. We have no data to suggest that the orders have had any significant negative effect on double-crested cormorant populations. Extending the orders for an additional five years will not, in the judgment of Service biologists, pose a significant, detrimental effect on the long-term viability of double-crested cormorant populations.

**Public Comments**

You may submit your comments and materials concerning our proposed rule and DEA by one of the methods listed in the **ADDRESSES** section. We will not accept comments sent by e-mail or fax or to an address not listed in the **ADDRESSES** section.

If you submit a comment via <http://www.regulations.gov>, your entire comment, including any personal identifying information, will be posted on the Web site. If you submit a hardcopy comment that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy comments on <http://www.regulations.gov>.

**Required Determinations**

*Regulatory Planning and Review (E.O. 12866)*

The Office of Management and Budget (OMB) has determined that this proposed rule is not significant under E.O. (E.O.) 12866. OMB bases its determination upon the following four criteria:

(a) Whether the rule will have an annual effect of \$100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the