

Oloma`o or Moloka`i thrush
(Myadestes lanaiensis rutha)

5-Year Review
Summary and Evaluation

U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
Honolulu, Hawai`i

5-YEAR REVIEW

Species reviewed: Oloma`o or Moloka`i thrush (*Myadestes lanaiensis rutha*)

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5-YEAR REVIEW
Oloma`o or Moloka`i thrush/ *Myadestes lanaiensis rutha*

1.0 GENERAL INFORMATION

1.1 Reviewers

Lead Regional Office:

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Cooperating Field Office(s):

N/A

Cooperating Regional Office(s):

N/A

1.2 Methodology used to complete the review:

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (USFWS) beginning on July 6, 2005. The evaluation of the status of the species was prepared by the lead PIFWO biologist and reviewed by the Hawaiian Birds Recovery Coordinator. The document was then reviewed by the Recovery Program Leader and acting Assistant Field Supervisor for Endangered Species, and Deputy Field Supervisor, before submission to the Field Supervisor for approval.

Information used to conduct this review was obtained from the following sources: the Revised Recovery Plan for Hawaiian Forest Birds (USFWS 2006), Birds of North America species account, No. 460 (Wakelee and Fancy 1999), Hawaiian Forest Bird Survey (Scott *et al.* 1986), Hawai`i Rare Bird Search 1994-1996 (Reynolds and Snetsinger 2001), and the most recent Hawaiian forest bird surveys on the island of Moloka`i in 2004. Information from these sources was used to determine the species' historical distribution, recovery criteria, threats, most recent documented sightings, and extinction probability. The Birds of North America species account (Wakelee and Fancy 1999) and the peer-reviewed Revised Recovery Plan for Hawaiian Forest Birds (USFWS 2006) summarized all early scientific information gathered about the species, while the Hawaiian Forest Bird Survey (Scott *et al.* 1986), the Hawai`i Rare Bird Search 1994 to 1996, which was conducted specifically to search for extremely rare and potentially extinct Hawaiian forest birds, and periodic forest bird surveys performed on a five-year rotating cycle on each of the main Hawaiian islands, provided the most

recent information about the continued presence of the species in areas where it was known historically. The above sources constitute the most recent, complete, and scientifically reliable information available for the evaluation of the taxon's current status.

1.3 Background:

1.3.1 Federal Register (FR) Notice citation announcing initiation of this review:

USFWS. Endangered and threatened wildlife and plants; Initiation of 5-year reviews of the Mariana Fruit Bat (*Pteropus mariannus mariannus*), Mariana Crow (*Corvus hawaiiensis*), Laysan Duck (*Anas laysanensis*), Kauai Akialoa (Honeycreeper) (*Hemignathus procerus*), Large Kauai Thrush (*Myadestes myadestinus*), Kauai Oo (Honeyeater) (*Moho braccatus*), Ou (Honeycreeper) (*Psittirostra psittacea*), Molokai Creeper (*Paroreomyza flammea*), Molokai Thrush (*Myadestes lanaiensis rutha*), Kauai Cave Wolf Spider (*Adelocosa anops*) Kauai Cave Amphipod (*Spelaeorchestia koloana*), *Alsinidendron obovatum* (No Common Name), *Amaranthus brownii* (No Common Name), *Chamaesyce celastroides* var. *kaenana* (Akoko), *Chamaesyce deppeana* (Akoko), *Chamaesyce herbstii* (Akoko), *Chamaesyce skottsbergii* var. *kalaeloana* (Ewa Plains Akoko), *Clermontia pyrularia* (Oha Wai), *Cyanea grimesiana* ssp. *obatae* (No Common Name), *Cyanea pinnatifida* (Haha), *Cyanea st.-johnii* (Haha), *Cyanea superba* (Haha), *Cyanea truncata* (Haha), *Cyrtandra dentata* (Haiwale), *Gouania vitifolia* (No Common Name), *Hedyotis degeneri* (No Common Name), *Hibiscadelphus woodii* (Hau Kuahiwi), *Castilleja levisecta* (Golden paintbrush), Fender's Blue Butterfly (*Icaricia icarioides fenderi*), *Erigeron decumbens* var. *decumbens* (Willamette Daisy), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's Lupine), *Lomatium bradshawii* (Bradshaw's Desert Parsley), and *Sidalcea nelsoniana* (Nelson's Checker-mallow). Federal Register 70(128):38972-38975.

1.3.2 Listing history

Original Listing

FR notice: USFWS. 1970. Title 50 – Wildlife and Fisheries. Chapter 1 – Bureau of Sport Fisheries and Wildlife, Fish and Wildlife Service, Department of Interior; Part 17 – Conservation of Endangered Species and other Fish and Wildlife; Appendix D – United States List of Endangered Native Fish and Wildlife. Federal Register 35(199):16047-16048.

Date listed: October 13, 1970

Entity listed: Subspecies

Classification: Endangered

Revised Listing, if applicable

FR notice: N/A

Date listed: N/A

Entity listed: N/A

Classification: N/A

1.3.3 Associated rulemakings:

N/A

1.3.4 Review History:

Species status [FY 2008 Recovery Data Call (September 2008)]:

Uncertain

Recovery achieved:

1 (0-25%) (FY 2008 Recovery Data Call)

1.3.5 Species' Recovery Priority Number at start of this 5-year review:

5

1.3.6 Current Recovery Plan or Outline

Name of plan or outline: Revised Recovery Plan for Hawaiian Forest Birds

Date issued: September 22, 2006

Dates of previous revisions, if applicable:

May 1984 (USFWS. 1984. Maui-Molokai Forest Birds Recovery Plan. Region 1, Portland, OR. 110 pages.)

2.0 REVIEW ANALYSIS

2.1 Application of the 1996 Distinct Population Segment (DPS) policy

2.1.1 Is the species under review a vertebrate?

Yes

No

2.1.2 Is the species under review listed as a DPS?

Yes

No

2.1.3 Was the DPS listed prior to 1996?

Yes

No

2.1.3.1 Prior to this 5-year review, was the DPS classification reviewed to ensure it meets the 1996 policy standards?

Yes

No

2.1.3.2 Does the DPS listing meet the discreteness and significance elements of the 1996 DPS policy?

Yes

No

2.1.4 Is there relevant new information for this species regarding the application of the DPS policy?

Yes

No

2.2 Recovery Criteria

2.2.1 Does the species have a final, approved recovery plan containing objective, measurable criteria?

Yes

No

2.2.2 Adequacy of recovery criteria.

2.2.2.1 Do the recovery criteria reflect the best available and most up-to date information on the biology of the species and its habitat?

Yes

No

2.2.2.2 Are all of the 5 listing factors that are relevant to the species addressed in the recovery criteria?

Yes

No

2.2.3 List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information:

Downlisting criteria:

Criterion 1. The species occurs in two or more viable populations or a viable metapopulation that represent the ecological, morphological, behavioral, and genetic diversity of the species (Factors A, C, and E).

This criterion has not been met. It is not known whether the species still exists.

Criterion 2. Either a) quantitative surveys show that the number of individuals in each isolated population or in the metapopulation has been stable or increasing for 15 consecutive years, or b) demographic monitoring shows that each population or the metapopulation exhibits an average intrinsic growth rate (λ) not less than 1.0 over a period of at least 15 consecutive years; and total population size is not expected to decline by more than 20 percent within the next 15 consecutive years for any reason (Factors A, C, and E).

This criterion has not been met. Survey effort has not been adequate to determine with confidence whether the species still exists.

Criterion 3. Sufficient recovery habitat is protected and managed to achieve Criteria 1 and 2 (Factor A).

This criterion has not been fully met. The remote Oloku`i Plateau and Kamakou Preserve are protected and managed. However, other areas of habitat where the species might occur are unfenced and vulnerable to damage by feral ungulates.

Criterion 4. The mix of threats that were responsible for the decline of the species have been identified and controlled (Factors A, C, and E).

This criterion has not been fully met. Most threats have been identified including disease, predation, and habitat damage by feral ungulates. However, each of these threats is only partly controlled. The threat from disease has been partly controlled by protecting forest habitat in some areas from feral pigs that create mosquito breeding sites, but mosquitoes are known to fly several kilometers in forested habitats and thus may still threaten forest birds even in pristine forest. Predator control and ungulate removal has been implemented in some areas where the species may still occur, but not in the entire suitable habitat area for the species.

The taxon may be delisted when the downlisting criteria described above have been satisfied for at least 30 consecutive years.

2.3 Updated Information and Current Species Status

2.3.1 Biology and Habitat

2.3.1.1 New information on the species' biology and life history:

No new information.

2.3.1.2 Abundance, population trends (e.g. increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:

No new information.

2.3.1.3 Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.):

No new information.

2.3.1.4 Taxonomic classification or changes in nomenclature:

There has been no change in taxonomy or nomenclature.

2.3.1.5 Spatial distribution, trends in spatial distribution (e.g. increasingly fragmented, increased numbers of corridors, etc.), or

historic range (e.g. corrections to the historical range, change in distribution of the species' within its historic range, etc.):

No new information.

2.3.1.6 Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem):

Oloma`o range historically included forested montane regions of East Moloka`i, Maui, and Lāna`i Islands; and the species was described as ubiquitous in the late 1800s throughout forests from lowlands to higher elevations on the Island of Moloka`i (Wakelee and Fancy 1999). Forested habitats on Lāna`i have all but disappeared the last century and have contracted greatly on East Moloka`i and Maui as result of agriculture, urbanization, and ungulate grazing.

2.3.1.7 Other:

Not applicable.

2.3.2 Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)

2.3.2.1 Present or threatened destruction, modification or curtailment of its habitat or range:

Habitat loss and degradation by agriculture, urbanization, cattle (*Bos taurus*) grazing, browsing by feral ungulate species, timber harvesting, and invasion of nonnative plant species into native-dominated plant communities have been some of the primary threats to this species (USFWS 2006). Feral pigs (*Sus scrofa*), and goats (*Capra hircus*) to a lesser degree, have had a long-term damaging effect upon native forests in the remaining oloma`o range by consuming and damaging understory vegetation, creating openings on the forest floor for nonnative weeds, transporting nonnative weed seeds into the forest, and causing soil erosion and disruption of seedling regeneration of native plants.

2.3.2.2 Overutilization for commercial, recreational, scientific, or educational purposes:

Overutilization is not known to be a current threat.

2.3.2.3 Disease or predation:

Predation by alien mammals such as black rats (*Rattus rattus*) and Polynesian rats (*Rattus exulans*) and diseases such as avian malaria (*Plasmodium relictum*) and avian pox (*Poxvirus avium*) carried by alien mosquitoes have also been primary threats to this species (USFWS 2006).

2.3.2.4 Inadequacy of existing regulatory mechanisms:

Goat, pig, and deer (*Axis axis*) hunting is allowed year-round or during certain months, depending on the area (Hawaii Department of Land and

Natural Resources 1999). However, public hunting does not adequately control the numbers of goats and pigs and deer to eliminate this threat to this species' habitat.

2.3.2.5 Other natural or manmade factors affecting its continued existence:

This species now occurs in such low numbers and in such restricted ranges, if it exists at all, that it is threatened by natural processes, such as inbreeding depression and demographic stochasticity, and by natural and man-made factors such as hurricanes, wildfires, and periodic vegetation die-back (USFWS 2006). Impacts of nonnative birds are not well understood, but include aggressive behavior towards native bird species, possible competition for food, nest sites, and roosting sites, and possibly supporting elevated predator population levels.

2.4 Synthesis

Reevaluation of conclusions regarding extinction probability based on the 1994 to 1996 Hawai'i Rare Bird Search (Reynolds and Snetsinger 2001), reexamination of data from the Hawaiian Forest Bird Survey (Scott *et al.* 1986, pages 16, 35, 69 to 71, and 95 to 96), and recent unconfirmed sightings (Hughes 2005, Wood 2005) indicates that the species' status is best described as uncertain.

The last well-documented visual detections of this species occurred in 1975 and 1980 at Kamakou and the Oloku'i Plateau on Moloka'i (Scott *et al.* 1977, 1986). The species was not detected during the most recent forest birds survey on Moloka'i in 2004 (which did not include the Oloku'i Plateau). However, there was an unconfirmed report as recently as 2005 (Hughes 2005, Wood 2005) of a sighting(s) near Pelekunu. Follow-up surveys did not detect oloma'o, and it is possible the sightings were of the Japanese bush-warbler (*Cettia diphone*), an introduced species that is considerably smaller than the oloma'o but substantially similar in coloration. The observers were not trained ornithologists, but they were aware of the presence of Japanese bush-warbler in the area and did not feel the bird(s) observed were Japanese bush-warblers (Hughes 2005, Wood 2005). The species was not detected during the 1994 to 1996 Hawai'i Rare Bird Search that included the Pelekunu-Kamakou area. However, the Hawai'i Rare Bird Search did not survey the Oloku'i Plateau. Probability of extirpation from the Pelekunu-Kamakou area was calculated to be ≥ 0.95 (Reynolds and Snetsinger 2001). However, the determination of extinction probability by Reynolds and Snetsinger (2001) should be considered valid only for the area they surveyed (Pelekunu-Kamakou) and not the Oloku'i Plateau. The Oloku'i Plateau, an area of 656 hectares (1,616 acres) and one of the most pristine areas of native forest left in Hawai'i, was not surveyed by the Hawai'i Rare Bird Search, and has not been systematically surveyed for rare Hawaiian forest birds since the Hawaiian Forest Bird Survey in 1980, when three oloma'o were detected, and the most recent Hawaii forest bird survey in 1988 when no oloma'o were detected.

As Reynolds and Snetsinger (2001) describe, there are instances where rare Hawaiian birds have been rediscovered after they were presumed extinct or have been found in larger populations than expected. The authors describe that although searches for oloma`o during the Hawai`i Rare Bird Search were conducted in habitats with historical records for the species and/or high native species diversity, the 1994 to 1996 Hawai`i Rare Bird Search did not search the Oloku`i Plateau, where the species was known historically, and which has not been surveyed for this species since 1988.

3.0 RESULTS

3.3 Recommended Classification:

Downlist to Threatened

Uplist to Endangered

Delist

Extinction

Recovery

Original data for classification in error

No change is needed

3.2 New Recovery Priority Number: N/A

Brief Rationale:

3.3 Listing and Reclassification Priority Number: N/A

Reclassification (from Threatened to Endangered) Priority Number: _____

Reclassification (from Endangered to Threatened) Priority Number: _____

Delisting (regardless of current classification) Priority Number: _____

Brief Rationale:

4.0 RECOMMENDATIONS FOR FUTURE ACTIONS

Given the low survey effort for this species and the difficulty of detecting forest birds in remote mountainous habitats in Hawai`i, the species' biological status is uncertain. This determination is based on reexamination of data from the 1994 1996 Hawai`i Rare Bird Search (Reynolds and Snetsinger 2001), the Hawaiian Forest Bird Survey (Scott *et al.* 1986), and recent possible sightings of the species (Hughes 2005, Wood 2005). Although results of the 1994 to 1996 Hawai`i Rare Bird Search and the most recent forest bird surveys on Moloka`i in 2004 suggest the oloma`o may be extinct, unconfirmed sightings in 2005 cast doubt as to whether this may be true, and additional targeted searches for this species are needed to confirm the species' status. Therefore, PIFWO recommends the following actions:

- Conduct intensive searches for the oloma`o on Moloka`i, using similar methodologies as those employed during the 1994 to 1996 Hawai`i Rare Bird Search (Reynolds and Snetsinger 2001). Include areas not surveyed during the 1994 to 1996 Hawai`i Rare Bird Search in these surveys, particularly the Oloku`i Plateau.
- Deploy autonomous recording units, or ARUs (Fitzpatrick 2002) in suitable habitats for this species. These field recording units record vocalizations of forest birds. The recordings can then be analyzed using computer programs to determine if the target species is present in the area. Use of this technology would greatly increase the amount of search time for this species.

5.0 REFERENCES

- Fitzpatrick, J.W. Ivory-bill quest. *Birdscope*, newsletter of the Cornell Lab of Ornithology, Spring 2002. <www.birds.cornell.edu>
- Hawaii Department of Land and Natural Resources. 1999. Amendment and Compilation of Chapter 13-123, Hawaii Administrative Rules, October 20, 1999. Rules Regulating Game Mammal Hunting. Division of Forestry and Wildlife, Honolulu. 49 pages.
- Reynolds, M.H., and T.J. Snetsinger. 2001. The Hawai`i Rare Bird Search 1994-1996. *Studies in Avian Biology* 22:133-143.
- Scott, J.M., S. Mountainspring, F.L. Ramsey, and C.B. Kepler. 1986. Forest bird communities of the Hawaiian Islands: their dynamics, ecology, and conservation. *Studies in Avian Biology* 9:69-71.
- Scott, J.M., D.H. Woodside, and T.L.C. Casey. 1977. Observations of birds in the Molokai Forest Reserve, July 1975. *Elepaio* 38:25-27.
- [USFWS] U.S. Fish and Wildlife Service. 1970. Title 50 – Wildlife and Fisheries. Chapter 1 – Bureau of Sport Fisheries and Wildlife, Fish and Wildlife Service, Department of Interior; Part 17 – Conservation of Endangered Species and other Fish and Wildlife; Appendix D – United States List of Endangered Native Fish and Wildlife. *Federal Register* 35(199):16047-16048.
- [USFWS] U.S. Fish and Wildlife Service. 1984. Maui-Molokai Forest Birds Recovery Plan. Region 1, Portland, OR. 110 pages.
- [USFWS] U.S. Fish and Wildlife Service. 2006. Revised Recovery Plan for Hawaiian Forest Birds. Region 1, Portland, OR. 622 pages.
- Wakelee, K.M. and S.G. Fancy. 1999. `Ōma`o (*Myadestes obscurus*), Kāma`o (*Myadestes myadestinus*), Oloma`o (*Myadestes lanaiensis*), and `Āmaui

(*Myadestes woahensis*). In The Birds of North America, No. 460 (Poole, A. and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Personal communications:

Hughes, Guy. 06/23/2005. E-mail to Ken Wood and Fern Duvall. Your Molokai sighting of a possible Olomao (*Myadestes lanaiensis*).

Wood, Ken. 06/23/2005. E-mail to Fern P. Duvall, with map attachment. Your Molokai sighting of a possible Olomao (*Myadestes lanaiensis*).

Signature Page
U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of Oloma`o or Moloka`i thrush (*Myadestes lanaiensis rutha*)

Current Classification: Endangered

Recommendation resulting from the 5-Year Review:

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

Appropriate Listing/Reclassification Priority Number, if applicable: _____

Review Conducted By:

Jay Nelson, Fish and Wildlife Biologist
Eric VanderWerf, (former) Hawaiian Birds Recovery Coordinator
Marilet A. Zablan, Recovery Program Leader and acting Assistant Field Supervisor for Endangered Species
Gina Shultz, Deputy Field Supervisor

Approved:  Date 29 July 2009
Acting Field Supervisor, Pacific Islands Fish and Wildlife Office