

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Oreomystis bairdi

COMMON NAME: Kauai creeper or Akikiki

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: February 2003

STATUS/ACTION (Check all that apply):

New candidate

Continuing candidate

Non-petitioned

Petitioned - Date petition received: \_\_\_\_

90-day positive - FR date: \_\_\_\_

12-month warranted but precluded - FR date: \_\_\_\_

Is the petition requesting a reclassification of a listed species?

Listing priority change

Former LP: \_\_\_\_

New LP: \_\_\_\_

Latest date species first became a Candidate: November 15, 1994

Candidate removal: Former LP: \_\_\_\_ (Check only one reason)

A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

F - Range is no longer a U.S. territory.

M - Taxon mistakenly included in past notice of review.

N - Taxon may not meet the Act's definition of a species. @

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Birds, Fringillidae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Hawaii (Kauai)

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Hawaii (Kauai)

LEAD REGION CONTACT (Name, phone number): Scott McCarthy, 503-231-6131

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Pacific Islands (Ecological Services), Marilet A. Zablan, 808-541-3441

## BIOLOGICAL INFORMATION:

This species is endemic to the island of Kauai, and is most common in mesic and wet forests from 600 to 1,600 meters (m) (1,968 to 5,248 feet (ft)) elevation. It generally forages on trunks, branches, and twigs of live and dead trees, and occasionally forages in sub-canopy shrubs, and it feeds primarily on insects, insect larvae, and spiders gleaned and extracted from bark, lichens, and moss (Foster et al. in press). The Kauai creeper was considered common from high to low elevation in native forests in the late 1800s (Perkins 1903), and was locally abundant in and near the Alakai Swamp as late as the early 1960s (Richardson and Bowles 1964). In 1968-1973, the island-wide population was estimated to number  $6,832 \pm 966$  birds (Sincock et al. 1984). In 1981, the Hawaii Forest Bird Survey estimated there were approximately  $1650 \pm 450$  Kauai creepers in a 25 square kilometers (9.7 square miles) area of the southeastern Alakai, in the vicinity of what is now known as Sincock=s Bog (Scott et al. 1986). Sincock et al. (1984) had estimated the population in this same area to be  $2300 \pm 700$  birds. However, the range of the population has been contracting, resulting in an overall decline in numbers (Department of Land and Natural Resources (DLNR) 1984; Foster et al. in press). Results of conducted in 1989, 1994, and 2000 currently are being analyzed by U.S. Geological Survey-Biological Resources Division (BRD) researchers, and will allow examination of more recent population trends.

## THREATS:

### A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Feral pigs and goats have had a long term damaging effect upon native forest habitat in the Alakai region, opening space for weeds, and transporting weed seeds into the forest. The negative impacts of feral ungulates on forested ecosystems in Hawaii include soil erosion, disruption of beneficial plant regeneration, and spreading of alien weeds (Cabin et al. 2000). Continued habitat degradation resulting from the invasion of many non-native weeds is likely to continue changing the forest structure and integrity.

### B. Overutilization for commercial, recreational, scientific, or educational purposes.

Not known to be a threat.

### C. Disease or predation.

Avian diseases transmitted by the introduced southern house mosquito (Culex quinquefasciatus), including both pox (Poxvirus avium) and malaria (Plasmodium relictum), are thought to play a major role in limiting the distribution of the Kauai creeper. Mosquitoes are present to the highest elevations on Kauai (C. Atkinson, BRD, unpubl. data, cited in LaPointe 2000). Mistnetting of forest birds from 1994-97 at three locations, Pihea-Alakai Swamp Trail, Koiae Camp, and Sincock=s Bog, documented 2-5 percent of all birds with active malaria infections, and up to 12 percent with malarial antibodies (C. Atkinson, BRD, unpubl. data, cited in LaPointe 2000). Malarial infection rates were highest in the west, at Pihea, and lowest in Sincock=s Bog. To date, 10 Kauai creepers have been tested for disease. Of these, none had either active infections or evidence of past infection with malaria (C. Atkinson, BRD, unpubl. data, cited in LaPointe 2000). However, it is impossible to tell from these limited data how

serious disease is as a limiting factor for this species; low infection rates could reflect either low transmission rates or high mortality of infected birds.

Predation on Kauai creepers and their nests has not been documented. However, introduced mammals such as black rats (Rattus rattus), Polynesian rats (R. exulans), Norway rats (R. norvegicus), and feral cats (Felis domesticus) are present in the Alakai swamp on Kauai (Tweed et al. 1999) and are potential predators on roosting or incubating adults, nests, or young. Two species of owls, the native Pueo (Asio flammeus sandwichensis) (C. Atkinson, BRD, unpubl. data, cited in LaPointe 2000).

D. The inadequacy of existing regulatory mechanisms.

There are no protective regulations for this species.

E. Other natural or manmade factors affecting its continued existence.

Hurricanes in 1983 and 1992 significantly reduced habitat by destroying forests and promoting the spread of alien weeds.

FOR RECYCLED PETITIONS:

- a. Is listing still warranted? \_\_\_
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions?\_\_\_
- c. Is a proposal to list the species as threatened or endangered in preparation? \_\_\_
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP: The remaining populations of this taxon are located on State and private lands.

PRELISTING:

The Hawaii Forest Bird Recovery Team, assembled by the Service, is in the process of revising the Hawaiian Forest Bird Recovery Plan, which will include the Kauai Creeper as a candidate species. A draft of the revised plan is expected in Spring of 2002.

In March 2000, the Hawaii State Division of Forestry and Wildlife, BRD, and the Service conducted a systematic survey of forest bird populations throughout the Alakai. The surveys included the majority of intact native forest on Kauai above about 1,200 m (3,936 ft). The data are currently being analyzed and will provide: (1) an up-to-date population estimate for the Kauai creeper; (2) an analysis of population trends over the past 20 years; (3) an up-to-date distribution map; and (4) a habitat suitability map for Kauai creeper.

The Forest Reserve Act of 1903 and subsequent predator control were important actions that have protected watersheds in Hawaii. The Act has been strengthened and re-titled DLNR Title 13, Chapter 104 Rules Regulating Activities Within Forest Reserves and provides protection to native forest values from certain degrading factors caused by human activities. The Hawaii Department of Land and Natural Resources Regulation (Administrative Rule No. 1, Chapter 3),

established the 4,022 hectare (9,939 acre) Alakai Wilderness Preserve in 1964, recognizing the pristine forest values of that area and the need to control potential degrading factors.

Dr. Carter Atkinson of BRD has initiated forest bird disease studies on several of the main Hawaiian islands, including Kauai, focusing primarily on blood borne diseases within the range of endangered and candidate Hawaiian forest birds, including the Kauai creeper. This research is aimed at understanding the significance of disease and confirming the long held theory that diseases brought to Hawaii by introduced exotic birds and the establishment of alien vectors of disease such as mosquitoes have had a major part in the decline and extinction of native birds in Hawaii.

#### REFERENCES:

- Cabin, R.J., S.G. Weller, D.H. Lorence, T.W. Flynn, A.K. Sakai, D. Sandquist, and L.J. Hadway. 2000. Effects of long-term ungulate exclusion and recent alien species control on the preservation and restoration of a Hawaiian tropical dry forest. *Conservation Biology* 14:439-453.
- Department of Land and Natural Resources, State of Hawaii. 1986. Limited surveys of forest birds and their habitats in the State of Hawaii. Job Progress Report, DLNR, Hawaii (W-18-R-10: RII-D).
- Foster, J.T., J.M. Scott, and P.W. Sykes, Jr. In press. 'Akikiki (*Oreomystis bairdi*). in *The Birds of North America* (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, DC.
- LaPoint, D. 2000. Avian malaria in Hawaii: the distribution, ecology, and vector potential of forest dwelling mosquitos. Unpublished Ph.D. dissertation. University of Hawaii at Manoa.
- Perkins, R.C.L. 1903, *Vertebrata*. Pp. 365-466 in D. Sharp (ed.). *Fauna Hawaiiensis*. Vol. 1, part IV. The University Press, Cambridge, England.
- Richardson, F. and J. Bowles. 1964. A survey of the birds of Kauai, Hawaii. *B. P. Bishop Mus. Bull.* 227.
- 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 of Avian Biology* No. 9, Cooper Ornithological Society, Allen Press, Lawrence, Kansas.
- Sincock, J.L., R.E. Daehler, T. Telfer, and D.H. Woodside. 1984. Kauai forest bird recovery plan. U.S. Fish and Wildlife Service, Portland, Ore.
- Tweed, E.J., J. Foster, and B.L. Woodworth. 1999. Initiating Recovery of the Critically Endangered Hawaiian Solitaire, the Puaiohi. Annual Report to Cooperators. Pacific Island Ecosystems Research Center, U.S. Geological Survey-Biological Resources Division.

LISTING PRIORITY (\* after number)

THREAT
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Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5 *
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

**Rationale for listing priority number:**

*Magnitude:*

*Imminence:*

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Rowan Gould March 6, 2003  
Regional Director, Fish and Wildlife Service Date

Concur: \_\_\_\_\_  
Director, Fish and Wildlife Service Date

Do not concur: \_\_\_\_\_  
Director, Fish and Wildlife Service Date

Director's Remarks:

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Date of annual review: February 2003  
Conducted by: \_\_\_\_\_

Comments:

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