



Photo: Jim Denny

Forest Birds

'Akikiki or Kaua'i Creeper

Oreomystis bairdi

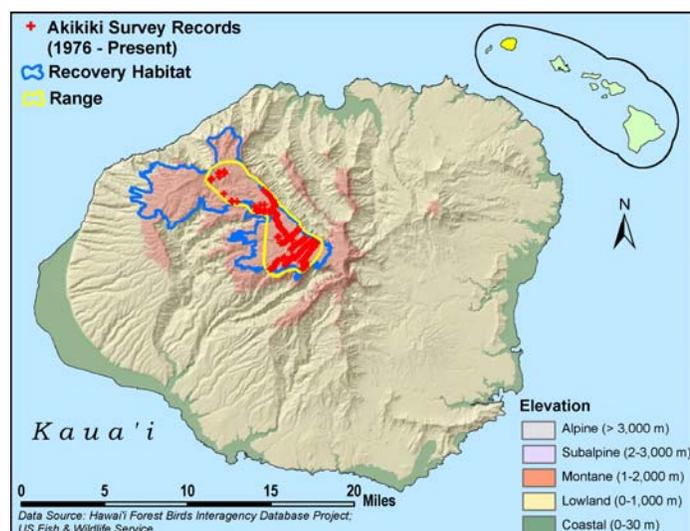
SPECIES STATUS:

Federal Candidate for Listing
 State recognized as Endemic
 NatureServe Heritage Rank G1 – Critically imperiled
 IUCN Red List Ranking – Critically endangered
 Draft Revised Recovery Plan for Hawaiian
 Forest Birds – USFWS 2003

SPECIES INFORMATION: The 'akikiki, or Kaua'i creeper, is a small, drab Hawaiian honeycreeper (Family: Fringillidae) endemic to the island of Kaua'i. Both males and females are predominantly dark gray to olive above, whitish below, and are indistinguishable in the field. 'Akikiki have pinkish legs and feet, and their short, slightly decurved bill also is pink. They are usually found in pairs, family groups, or small flocks (8 - 12 individuals); during the non-breeding season 'akikiki join mixed species foraging flocks. 'Akikiki gleans and probes the bark and lichens and moss on trunks, branches, and twigs of live and dead 'ohi'a (*Metrosideros polymorpha*) and koa (*Acacia koa*) trees for insects and spiders. The breeding biology of the species is poorly known, but their reproductive biology is likely similar to that of the closely related, and well-studied, Hawai'i creeper (*O. mana*). A long period of parental dependency makes double brooding unlikely. The 'akikiki is one of the least known extant Hawai'i forest birds.

DISTRIBUTION: 'Akikiki are restricted to a 36 square kilometer (13.8 square mile) area of the Alaka'i Wilderness Preserve. In 1973, the species occupied an 88 square kilometer (33.7 square mile) area. Historically, 'akikiki occupied both high- and low-elevation forests, although by the 1960s it was most common above 1,140 meters (3,750 feet) elevation. Subfossil remains suggest a prehistoric island-wide distribution.

ABUNDANCE: The Kaua'i Forest Bird Survey (2000), estimated the population at $2,448 \pm 1,200$ (SE) individuals. Density



estimates were 26 birds per square kilometer; 15 percent lower than in 1981.

LOCATION AND CONDITION OF KEY HABITAT: 'Akikiki occupy mesic and wet forests between 600 and 1,600 meters (2,000 – 5,300 feet) elevation. Rainfall and topography varies tremendously across the species' known range, resulting in enormous habitat variation. Thus key habitat variables are difficult to quantify. The montane forests of Kaua'i are dominated by 'ōhi'a and have a subcanopy comprised of 'ōlapa or lapalapa (*Cheirodendron* spp.) and 'ōhi'a hā (*Syzygium sandwicensis*). Common understory species include 'ōhelo (*Vaccinium calycinum*), kanawao (*Broussaisia arguta*), 'ōhā wai (*Clermontia* spp.), kāwa'u (*Ilex anomala*), kōlea (*Myrsine lessertiana*), na'ena'e (*Dubautia* spp.), and pūkiawe (*Styphelia tamieameiae*). The entire known range of this species is within the Alaka'i Wilderness Preserve.

THREATS: 'Akikiki are likely susceptible to the same factors that threaten other native Hawaiian forest birds, including: loss and degradation of habitat, predation by introduced mammals, and disease. For 'akikiki populations, the following are of particular concern:

- Disease. Mosquitoes (*Culex* spp.) likely are ubiquitous on Kaua'i, and avian malaria (*Plasmodium relictum*) and avian pox (*Poxvirus avium*) are likely the most important factors limiting the species' distribution. To date, ten 'akikiki have been tested for malaria. None had active infections or antibodies. These data are equivocal, indicating low transmission rates, possible resistance, or very high mortality.
- Habitat degradation. Pigs (*Sus scrofa*) and goats (*Capra hircus*) have contributed to the spread of non-native plants, but effects to 'akikiki are unknown. Perhaps more importantly, severe hurricanes in 1982 and 1992 resulted in heavy damage to native forests, possibly resulting in short-term reductions in arthropod food resources.
- Natural disasters. Hurricanes of 1982 and 1992 likely caused the death of an unknown number of individuals.
- Competition. Although little evidence exists, it has been suggested that competition with introduced Japanese white-eyes (*Zosterops japonicus*) may negatively affect 'akikiki. Non-native insects, especially yellow jackets (*Vespula* spp.) and ants (*Linepithema humile*), may compete with or prey on the native arthropods on which 'akikiki feed. The role of non-native insects in native Hawaiian forests is unclear.
- Predation. Although predation on adults or their nests has not been documented, rats (*Rattus* spp.), cats (*Felis silvestris*), Hawaiian short-eared owls (*Asio flammeus sandwichensis*), and barn owls (*Tyto alba*) occur throughout the forests of Kaua'i.
- Population size. Small populations are plagued by a variety of potentially irreversible problems that fall into three categories: demographic, stochastic, and genetic; the former are usually most problematic. Demographic factors include skewed sex ratios and stochastic factors include natural disasters. Habitat fragmentation exacerbates demographic and genetic problems.

CONSERVATION ACTIONS: The 'akikiki is a Federal candidate species for listing under the Endangered Species Act. Ongoing ecological studies are scheduled to produce a habitat suitability map that will be used to determine potential re-introduction sites. Captive propagation techniques are being developed for *Oreomystis* species at the Keauhou Bird Conservation Center that will benefit 'akikiki. In addition, 'akikiki likely have benefited from management activities designed to conserve other endangered forest birds including the establishment of the Alaka'i Wilderness Preserve, regular surveys of forest bird populations, monitoring of habitat conditions, studies of disease and disease vectors, control of feral

ungulates through public hunting, and public education efforts featuring Kauai's endangered forest birds. In addition to these efforts, future management specific to the recovery of 'akikiki may include the following:

- Aggressive ungulate control would likely improve the quality of 'akikiki habitat and facilitate the recovery of degraded, but potential habitat. Control of non-native plants should be part of forest restoration efforts.
- Eradication of rats and feral cats from the Alaka'i Wilderness Preserve.
- Prevent the introduction of the small Indian mongoose (*Herpestes auropunctatus*) and other potential predators.
- Public outreach and education.
- Continue protection and management of wildlife sanctuaries and refuges.

MONITORING: Continue forest bird surveys and habitat monitoring. This information is needed to assess the efficacy of habitat management efforts.

RESEARCH PRIORITIES: Research priorities for most Hawaiian forest birds include developing improved methods for controlling rats and feral cats in native forests, determining the ecological requirements of *Culex* mosquitoes at mid- and high-elevation forests, and developing methods to control mosquito populations. Research priorities specific to the 'akikiki include the following:

- Conduct life history studies to quantify the population structure, dispersal patterns, survivorship, nesting phenology and success of this poorly known species.
- Determine the susceptibility of this species to avian malaria and avian pox.
- Determine if competition with Japanese white-eyes occurs, and if so, determine its affect on 'akikiki populations.
- Determine the effects of recently established non-native insects on native arthropods, especially those that are part of the species' diet.

References:

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