



Photo: DOFAW

## Forest Birds

# ‘Ākohekohe or Crested Honeycreeper

*Palmeria dolei*

### SPECIES STATUS:

Federally listed as Endangered

State listed as Endangered

State recognized as Endemic

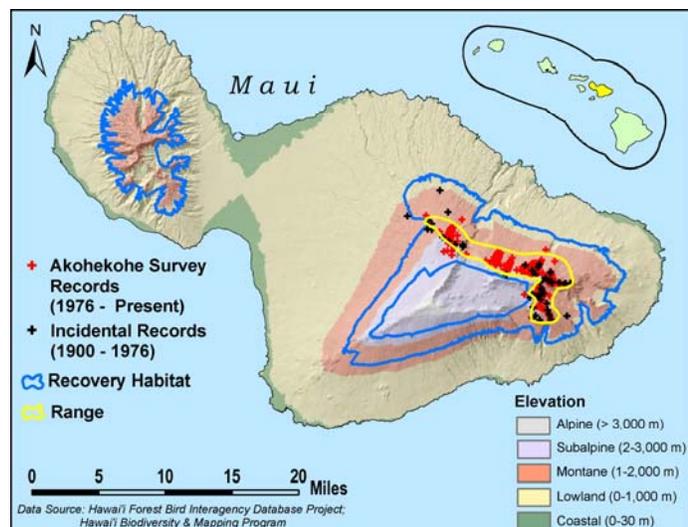
NatureServe Heritage Rank G1 – Critically imperiled

IUCN Red List Ranking – Vulnerable

Draft Revised Recovery Plan for Hawaiian Forest Birds – USFWS 2003

**SPECIES INFORMATION:** The ‘ākohekohe, or crested honeycreeper (Family: Fringillidae), is the largest extant honeycreeper on Maui Nui (Lāna‘i, Moloka‘i, Maui, and Kaho‘olawe). Although primarily black, the plumage of the ‘ākohekohe is striking. Depending on their location, feathers are tipped with orange-yellow, gray, silver, or white. Orange feathers surround the eyes and extend over the nape, orange or yellow-white feathers cover the thighs, and the epaulettes are white with orange tips. Finally, the ‘ākohekohe has a distinctive plume of white feathers that curl forward over the bill. The species does not sing, but produces a random series of buzzes, croaks, and whistles. ‘Ākohekohe are primarily nectarivorous, feeding mainly on ‘ōhi‘a (*Metrosideros polymorpha*), but also from the flowers of other trees and shrubs. Like ‘apapane (*Himatione sanguinea*) and i‘iwi (*Vestiaria coccinea*), ‘ākohekohe are strong fliers and will move from low to high elevations in search of blooming ‘ōhi‘a. Arthropods, mainly gleaned from ‘ōhi‘a, are also part of the species’ diet. ‘Ākohekohe may spend up to 70 percent of the day foraging. ‘Ākohekohe aggressively defend feeding and nesting territories year-around. Females build open-cup nests primarily in ‘ōhi‘a, and females incubate the clutch of one or two eggs and broods nestlings; male feeds female on nest. Fledglings can forage independently ten to 14 days after leaving the nest. Pairs successfully fledge two to three broods per season.

**DISTRIBUTION:** ‘Ākohekohe are restricted to a 58 square kilometer (22 square mile) area on the northeastern slope of Haleakalā at 1,100 to 2,300 meters (3,600 – 7,550 feet) elevation. Subfossil evidence indicates the species also occurred in Maui’s lowland dry forests. Currently they occupy five percent of their historic range. Also occurred in the forests of eastern Moloka‘i.



**ABUNDANCE:** The Hawaiian Forest Bird Survey (1980), estimated the population at 3,800 ± 700 (95% CI) individuals. Surveys in 1992 and 1995-97 indicated similar densities across the same range.

**LOCATION AND CONDITION OF KEY HABITAT:** 'Ākohekohe occur in wet and mesic montane forests dominated by 'ōhi'a and 'ōlapa (*Cheirodendron trigynum*); koa (*Acacia koa*) and kāwa'u (*Ilex anomala*) occur at lower densities. Nearly all birds occur in forest between 1,500 and 2,100 meters (5,000 - 6,000 feet) elevation in rugged, steep terrain with a dense understory. The entire known range of the species occurs within State (e.g., Forest Reserve and Natural Area Reserve) or Federally (e.g., National Park) managed lands.

**THREATS:** 'Ākohekohe 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 'ākohekohe populations, the following are of particular concern:

- Disease. Similar to 'apapane and 'i'iwi, movements between low and high elevation foraging sites may increase their exposure to mosquito-borne diseases.
- Habitat degradation. Feral pig (*Sus scrofa*) damage to understory vegetation may reduce the availability of nectar producing plants important to 'ākohekohe, especially those flowering when 'ōhi'a nectar is less available.
- 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:** Captive propagation of 'ākohekohe has been attempted, but to date has been unsuccessful. 'Ākohekohe likely have benefited from management activities designed to conserve endangered forest bird species on the northeastern slope of Haleakalā including fencing, ungulate and small mammal control, forest restoration, monitoring of habitat conditions, and studies of disease and disease vectors. In addition to these efforts, future actions specific to the protection of 'ākohekohe populations may include the following:

- Establishment of a second 'ākohekohe population is important to reduce the chances that a catastrophe could result in the species' extinction. Potential re-introduction sites (e.g., west Maui and Moloka'i) are limited because of the presence of mosquitoes.
- Continue attempts at establishing a captive population, especially if a second wild population cannot be establish.
- Additional fencing and feral pig control would likely improve understory conditions in occupied habitat and potentially facilitate expansion of 'ākohekohe populations.
- 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 'ākohekohe include the following

- Determine if disease resistant individuals exist and if so determine if resistance is passed to offspring. Disease-resistant individuals could be used to establish new populations.
- Determine the role of 'ākohekohe in transmitting disease between high and low elevation habitats.

**References:**

Berlin KE, VanGelder EM. 1999. 'Akohekohe (*Palmeria dolei*). In *The Birds of North America*, No. 400 (Poole A, Gill F, editors). Philadelphia, (PA): The Academy of Natural Sciences; and Washington DC: The American Ornithologists' Union.

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