



Photo: Chris Eckart

Forest Birds

Hawai'i 'Amakihi

Hemignathus virens

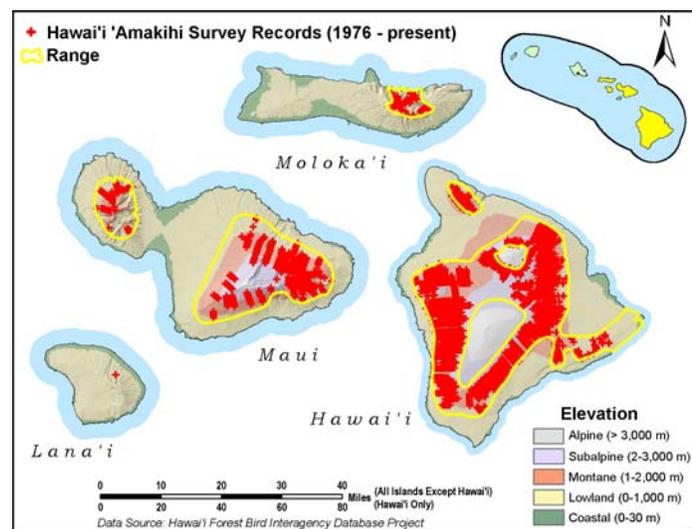
SPECIES STATUS:

State recognized as Endemic
NatureServe Heritage Rank G3 – Vulnerable

SPECIES INFORMATION: The Hawai'i 'amakihi is a small, generalist Hawaiian honeycreeper (Family: Fringillidae) that occurs on the islands of Hawai'i, Maui, and Moloka'i. Until 1995, the Hawai'i 'amakihi, and the O'ahu (*H. flavus*) and Kaua'i 'amakihi (*H. kauaiensis*) were considered a single species: the common 'amakihi (*H. virens*). Plumage of all species is similar; males are yellow-green to olive with black lores. Females are generally similar, but duller. All have decurved bills. Plumage of male Hawai'i 'amakihi is bright yellow-green above, and there is some inter-island variation, especially among females. The Hawai'i 'amakihi is brighter and smaller than the Kaua'i 'amakihi. Hawai'i 'amakihi are generalized foragers that most often glean arthropods from the leaves, blossoms, twigs, branches, and less frequently from tree trunks of a variety of trees, ferns, and shrubs. Feeds on nectar predominately from the flowers of 'ohi'a (*Metrosideros polymorpha*), māmane (*Sophora chrysophylla*), and native lobelias (Campanulaceae), but also forages on flowers of a number of other native and non-native plants. Hawai'i 'amakihi also eats fruit from native and non-native plants, but predominately from pilo (*Coprosma* spp.). Forages alone, in pairs, in family groups, or in mixed flocks. Courtship behavior somewhat complex and includes courtship chases, advertising displays, and courtship feeding. Pairs will remain together for successive breeding seasons. Pair selects nest site; female builds an open-cup nest and lays two or three eggs. Only females incubate eggs and brood nestlings. Males deliver food to females who then feed nestlings. Fledglings are dependent on parents for up to three months. The Hawai'i 'amakihi usually raise two broods in a season.

DISTRIBUTION: Hawai'i 'amakihi occur between 300 and 2,900 meters (1,000 – 9,500 feet) on the islands of Hawai'i, Maui and Moloka'i; not common below 500 meters (1,625 feet). The species is widely distributed on the islands of Hawai'i and Maui. Original range likely included all forested regions of the above islands as well as those on Lāna'i, where it was least seen in 1976.

ABUNDANCE: The Hawaiian Forest Bird Survey (1976-1983) estimated the Hawai'i 'amakihi population at 870,000 ± 5,612 (95% CI) individuals on the



island of Hawai'i, 44,000 ± 1,786 birds on east Maui, 3,000 ± 408 on west Maui, and 1,800 ± 357 individuals on Moloka'i. Populations on the islands of Hawai'i and Maui are probably stable; the Moloka'i population is probably declining.

LOCATION AND CONDITION OF KEY HABITAT: Hawai'i 'amakihi occupy a wide range of habitats on the islands of Hawai'i and Maui. These include native shrubland and dry, mesic, and wet forests in montane and subalpine communities. 'Amakihi densities are highest on the island of Hawai'i in subalpine 'ōhi'a scrub in Ka'ū, and in māmane/naio (*Sophora chrysophylla* and *Myoporum sandiwiense*) forests on Mauna Kea. 'Amakihi also are common in koa (*Acacia koa*) reforestation areas at higher elevations. On Maui, 'amakihi are common in subalpine dry communities dominated by 'ōhi'a, māmane, pūkiawe (*Styphelia tameiameia*) and 'a'ali'i (*Dodonea viscosa*). They also occupy some non-native tree plantations on Maui, although these are near areas where native vegetation persists. Habitat on Moloka'i is restricted to the 'ōhi'a forests of the eastern half of the island. The condition of this habitat varies considerably. Much of the species' current range is under State or Federal jurisdiction.

THREATS: Although Hawai'i 'amakihi populations appear stable they 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.

CONSERVATION ACTIONS: Hawai'i 'amakihi likely have benefited from management activities designed to conserve other endangered forest birds in the Hakalau Forest National Wildlife Refuge, Hawai'i Volcanoes National Park, and the 'Ōla'a/Kīlauea Watershed Partnership. These efforts include fencing, ungulate and small mammal control, forest restoration, habitat monitoring, and studies of disease and disease vectors. In addition to these efforts, future management specific to the Hawai'i 'amakihi may include the following:

- Translocation of captive bred individuals to Lāna'i and Kaho'olawe.
- Public education and outreach.
- 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 (*Rattus* spp.) and feral cats (*Felis silvestris*) in native forests, determining the ecological requirements of *Culex* mosquitoes at mid- and high-elevation forests, and developing methods to control mosquito populations. Currently, USGS/BRD personnel are conducting the following research on Hawai'i 'amakihi: genetic analyses to determine the species' phylogenetic status and examining the relationship between genetic diversity and disease resistance. Additional research priorities include the following:

- Conduct life history studies to quantify the population structure, dispersal patterns, survivorship, nesting phenology and success, especially for Maui and Moloka'i populations.
- Conduct studies to determine if competition with Japanese white-eyes (*Zosterops japonicus*) occurs, and if so, determine its effect on Hawai'i 'amakihi populations.
- Translocation experiments using Hawai'i 'amakihi would be valuable in re-establishing this and other Hawaiian honeycreeper populations.

References:

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- Scott JM, Mountainspring S, Ramsey FL, Kepler CB. 1986. Forest bird communities of the Hawaiian islands: their dynamics, ecology and conservation. Lawrence, (KS): Cooper Ornithological Society.