



Photo: Eric Nishibayashi

Forest Birds

'Apapane

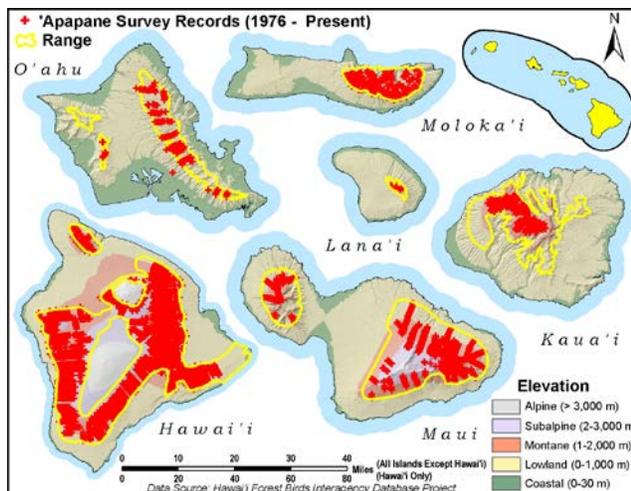
Himatione sanguinea

SPECIES STATUS:

State Recognized as Endemic
 NatureServe Heritage Rank G3 – Vulnerable
 IUCN Red List Ranking – Least Concern

SPECIES INFORMATION: The 'apapane is a small, crimson, primarily nectarivorous Hawaiian honeycreeper (Family: Fringillidae) and is an important 'ōhi'a (*Metrosideros polymorpha*) pollinator. It is the most abundant and widely distributed Hawaiian honeycreeper, and is often seen flying above the canopy in search of patches of flowering 'ōhi'a. Wide-ranging movements may facilitate disease transmission among native forest birds. 'Apapane often forage in conspecific flocks, likely to overwhelm 'i'iwi (*Vestiaria coccinea*) and 'ākohekohe (*Palmeria dolei*), which often defend flower-rich trees. Outside the breeding season, 'apapane also join mixed-species flocks. They feed on insects, which they glean from outer foliage and twigs in the upper- and mid-canopy. Sexual chasing and courtship feeding often precede nest building, a task shared by both male and female. Pairs defend small territories around nests. Females incubate three eggs and brood young; males feed females away from the nest. Both parents feed nestlings, and fledglings may remain with their parents for up to four months.

DISTRIBUTION: Occurs in native forests above 1,250 meters (4,100 feet) on the islands of Hawai'i, Maui, and Kaua'i. On O'ahu, occurs in the Ko'olau Range from 300 meters (975 feet) to summit at 946 meters (3,075 feet), and are less common in the Wai'anae Range above 600 meters (1,950 feet). Rare on Moloka'i and Lāna'i. Historically were common at low elevations on all islands with appropriate habitat.



ABUNDANCE: Based on Hawaiian Forest Bird Surveys (1976-1981): 1,080,000 ± 25,000 (95% confidence interval) birds on island of Hawai'i, 110,000 ± 9,000 on Maui (86% on Haleakalā), 39,000 ± 5,000 on Moloka'i, 540 ± 213 on Lāna'i, and 30,000 ± 1,500 on Kaua'i (O'ahu was not included in surveys). On Kaua'i, populations declined after the 1992 hurricane but have significantly increased since, estimated at 64,972 ± 2,014 (SE) birds in 2000. Rare on Moloka'i and Lāna'i.

LOCATION AND CONDITION OF KEY HABITAT: Mesic and wet forests dominated by 'ōhi'a and koa (*Acacia koa*), primarily at elevations greater than 1,250 meters (4,100 feet). The

primary reason for this limitation is the high density of cold-intolerant *Culex* mosquitoes, an important disease vector, below this elevation. Occupied habitats also contain kōlea (*Myrsine lessertiana*), naio (*Myoporum sandwicense*), and hapu' u tree ferns (*Cibotium* spp.). Māmāne (*Sophora chrysophylla*) is common in high-elevation foraging habitat. Although much of the species' current range is under State or Federal jurisdiction, habitat protection and restoration efforts vary considerably.

THREATS: Although populations appear stable on the islands of Hawai'i, Maui, and Kaua'i, they are likely susceptible to the same factors that threaten other native Hawaiian forest birds including habitat loss and degradation, predation by introduced mammals, and disease. For 'apapane the following is of particular concern:

- **Disease.** Of Hawai'i's native forest birds, 'apapane have the highest prevalence of avian malaria. Individuals infected with avian pox also are more likely to be infected with malaria. Foraging movements may increase their exposure to disease. 'Apapane breed in mid-elevation forests, which suggests some disease resistance.

CONSERVATION ACTIONS: 'Apapane likely benefited from actions to conserve other endangered forest birds on northeastern Haleakalā, Hakalau Forest National Wildlife Refuge, Hawai'i Volcanoes National Park, the 'Ōla'a/Kīlauea Watershed Partnership, and Alaka'i Wilderness Preserve and surrounding areas. These efforts include fencing, ungulate and small mammal control, forest restoration, habitat monitoring, and studies of disease and disease vectors. Future actions specific to the protection of 'apapane may include the following:

- Control mosquitos in degraded habitats.
- Conduct public education and outreach.
- Continue protection and management of wildlife sanctuaries and refuges.

MONITORING: Continue forest bird surveys and habitat monitoring on all islands.

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

- Determine if disease-resistant individuals exist and if so, if resistance is passed to offspring. Disease-resistant birds could be used to found of new populations.
- Determine the role of 'apapane in disease transmission between high- and low-elevation habitats.
- Conduct life history studies to quantify the population structure, dispersal patterns, survivorship, nesting phenology, and success of this poorly known species.

References:

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