

Forest Birds

'Akiapola'au

Hemignathus munroi

SPECIES STATUS:

Federally Listed as Endangered

State Listed as Endangered

State recognized as endemic

Hawaii Natural Heritage Ranking G1—Critically imperiled

SPECIES INFORMATION: 'Akiapola'au are Hawaiian honeycreepers noted for their bill, which consists of a long, decurved upper mandible and a short, straight lower mandible. 'Akiapola'au tap branches with the lower mandible to locate prey, which they pry out with their upper mandible. Moth larvae, spiders and beetle larvae are predominant food items. "'Aki" are also known to drill holes in the trunks of certain 'ohi'a (*Metrosideros polymorpha*) trees for the purpose of drinking sap. Pairs are monogamous, with the female incubating and brooding while the male feeds her and the chicks. Nests are primarily in terminal 'ohi'a foliage and clutch size is usually one (2). Extended juvenile dependency means most pairs only produce one chick per year. Family groups with both hatch-year and second-year young are sometimes seen.

DISTRIBUTION: 'Akiapola'au occur in four distinct populations in mesic and wet montane forests dominated by 'ohi'a and koa, or in subalpine dry mamane/naio forest on Hawai'i island. Few 'Akiapola'au are found below 1300 meters (4300'). Historic records indicate they once occurred nearly island-wide.

ABUNDANCE: The population estimate based on 1990-95 surveys is 1109 – 1217 birds (90% CI). The Hawai'i Forest Bird Survey (Scott 1986) estimated 1500 ± 400 birds. Thus, there is evidence of a decline in population and range for this species.

LOCATION AND CONDITION OF KEY HABITAT: Primary current habitat is mesic and wet montane forests dominated by koa (*Acacia koa*) and 'ohi'a (*Metrosideros polymorpha*). A small population may still exist in subalpine mamane/naio forest (*Sophora chrysophylla* and *Myoporum sandwicense*). Recent studies (Pejchar 2004) have documented 'Akiapola'au home ranges entirely within young second-growth koa reforestation areas. The four distinct populations inhabit lands that are predominantly managed for conservation by the state of Hawaii as Forest Reserve. Additional habitat occurs across Hakalau Forest National Wildlife Refuge (USFWS),

state Natural Area Reserve, and patches of private land. Management of these areas is considered stable.

THREATS: 'Akiapola'au are subject to the same threats as other Hawaiian forest birds, but because of their very low reproductive rate they may be particularly vulnerable. Of particular concern are the following:

- Habitat degradation, caused primarily by grazing ungulates, fragments suitable forest habitats. This fragmentation may be a barrier to dispersal and recolonization of former range.
- Predation by rats, cats and mongoose probably limit 'Akiapola'au populations. Rat densities are high at Hakalau Forest NWR. Juveniles may be especially vulnerable to predators because of their loud, persistent begging.
- Disease may have limited the 'Akiapola'au to its current high elevation range. Its absence below 1350 meters (4500 feet) may indicate that it is particularly susceptible to mosquito-borne avian disease.

CONSERVATION ACTIONS: Protection and management of high-elevation native forests are the primary conservation actions benefitting 'Akiapola'au. These management steps have included the following:

- Population surveys to document status and trends are conducted annually in four areas with `aki populations. The middle Hamakua section, Ka'u, and south Kona areas should be added to this effort.
- Establishment of Hakalau Forest NWR for the protection of native forest birds. Forty-five percent of the refuge has been fenced and is nearly ungulate-free. Koa reforestation efforts are ongoing on degraded pastures at high elevations and `aki are using the young koa at least for foraging habitat (Strommer, unpub data).
- Research on foraging ecology, home range and territories, and use of young koa habitat has been completed.
- Fencing and ungulate removal in the 'Ola'a/Kilauea Partnership and Kapapala Forest Reserve enhanced habitat.
- Increase public education efforts to engender support for conservation of forest birds.
- Restore high-elevation forest habitat—plant trees, control ungulates.

MONITORING:

- Test survey methods for `akiapola`au, and continue regular population surveys with improved methods.
- Monitor small mammal populations to assess effectiveness of control efforts, especially in dry forest sites.
- Add Hamakua, upper Waiakea kipuka, Ka'u /Kapapala and south Kona to survey efforts.

RESEARCH PRIORITIES:

- Demographic studies to measure population structure, dispersal, survivorship, nesting success, phenology of nesting and molting, etc.
- Habitat selection and foraging ecology, particularly in young habitats.
- Response of 'Akiapola'au to control of mammalian predators.
- Development of captive propagation techniques to help affect recolonizations.
- Feasibility studies for reintroduction of 'Akiapola'au into protected areas of its former range (e.g., Pu'u Wa'wa'a, Hawaii Volcanoes National Park).

References:

U.S. Fish and Wildlife Service. 2003. Draft Revised Recovery Plan for Hawaiian Forest Birds. Region 1, Portland, OR. 428pp.

Pejchar, L. 2004. Home range size varies with habitat type in a Hawaiian honeycreeper: implications for native *Acacia koa* forestry. Ecological Applications **in press**.

Strommer, unpublished data.