

Photo

Forest Birds

Puaiohi

Myadestes palmeri

SPECIES STATUS:

Federally Listed as Endangered

State Listed as Endangered

State recognized as endemic

Hawaii Natural Heritage Ranking G1—Critically imperiled

SPECIES INFORMATION: The puaiohi, or small Kaua'i thrush, is the smaller of two medium-sized solitaires known from Kaua'i. Its diet includes fleshy fruits, insects, snails and other invertebrates. Fruit dominates the diet in non-breeding season, but insects are important during breeding season. Puaiohi nest in cavities or on ledges concealed by or lined with vegetation on cliff faces, or sometimes in cavities in trees. Clutch size is usually two (1-3). Females build the nests, incubate and brood, and are the primary provisioners while chicks are in the nest. Hatch-year and second-year birds are known to assist in nest defense and feeding of nestlings and fledglings. Young are highly sedentary for 2-4 days after fledging. Females readily re-nest after both successes and failures: this can lead to high rates of nest success and productivity. Survival and dispersal are poorly understood.

DISTRIBUTION: The total population exists above 1050 meters (3450') in stream drainages and on associated ridges on the southern and central plateau of the Alaka'i Wilderness Preserve on Kaua'i. Historic range included mesic to wet forest containing steep walled ravines adjacent to the Alaka'i. Puaiohi have been considered rare since the late 1800's.

Map distribution

ABUNDANCE: Total estimated population is between 200 and 300 individuals in an area less than 20 square kilometers. Densities peak at 16 breeding pairs, plus floaters, per square kilometer and decline with decreasing elevation. Captive breeding programs have also released a total of 95 birds.

LOCATION AND CONDITION OF KEY HABITAT: Puaiohi are found in deeply dissected, steep-walled terrain in stream valleys and on associated ridges of the Alaka'i Wilderness Preserve. This area is in wet montane forest dominated by 'ohi'a (*Metrosideros polymorpha*) and 'olapa (*Cheirrodendron* spp.). Their former range included mesic areas dominated by 'ohi'a/koa (*Acacia koa*): these areas are now largely dominated by introduced plant species including fire tree (*Myrica faya*) and strawberry guava (*Psidium cattleianum*). Puaiohi appear to have specific habitat requirements and remain in areas with year-round food supply and nest

sites; densities are currently low in apparently suitable habitat. The Alaka'i Wilderness Preserve is managed by the state of Hawaii and the habitat therein is considered stable.

THREATS: Threats to the puaiohi are likely similar to threats faced by other Hawaiian forest birds. These include but are not limited to:

- Disease. Only five puaiohi have been tested for disease; none had lesions or scars and one carried malarial antibodies. Infection and survival rates are impossible to ascertain from these data, which could indicate either very low infection or very high mortality.
- Predation. Two years data confirmed rat predation in 14% and 22% of nest failures and three adult female deaths. Additionally, the habit of new fledglings to remain within two meters of the ground for several days probably makes them vulnerable to feral cats.
- Competition. Several introduced birds share the same habitat and may compete with the puaiohi for food and nest resources.
- Habitat degradation. Feral pigs and goats, and subsequent weed invasions have had a damaging effect on native forests in remaining puaiohi habitat. Hurricanes in 1982 and 1992 also disturbed areas of native forest. Introduced invertebrates may harm the forest ecosystem by limiting important native plant species, or reducing populations of specialized native insects. Introduced invertebrates may also become a food source for puaiohi.

CONSERVATION ACTIONS: Puaiohi, like other forest birds on Kaua'i, benefit from legal protection, public education efforts, regular surveys of bird populations and habitat conditions, and feral ungulate control via hunting in the more accessible areas of the preserve. In addition to common state-wide and island conservation actions, specific actions towards puaiohi conservation include:

- An intensive field ecology and behavior study was initiated in 1995. Results from that study are the basis of current management actions.
- Captive propagation and reintroduction techniques were developed using the 'oma'o (*Myadestes obscurus*) as a surrogate. A captive breeding flock was established in 1996 and 34 birds have been released, with 31 of these surviving to independence. Some of these birds have bred in the wild.
- Rat control using snap traps and rodenticides should be implemented in core puaiohi nesting habitat.

MONITORING:

- Continue regular surveys of Kaua'i forest bird populations and habitat conditions to measure effectiveness of management actions.
- Continue reintroductions of captive-bred puaiohi to augment natural dispersal.
- Monitor survival and reproductive success of released birds to ascertain effectiveness of propagation and reintroduction program.

RESEARCH PRIORITIES:

- Development of small mammal control programs for feral cats and rodents.
- Disease resistance and transmission. If resistant individuals can be identified, translocation and/or captive propagation of these individuals may help recover populations.

References:

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