

Photo

Forest Birds

Hawai'i 'Elepaio

Chasiempis sandwichensis

SPECIES STATUS:

State recognized as endemic
Hawaii Natural Heritage Ranking G3—Rare with restricted range

SPECIES INFORMATION: Hawai'i 'elepaio are small, non-migratory, socially monogamous, monarchine flycatchers that defend all-purpose territories year-around. Three subspecies are recognized: *C. s. ridgwayi*, *C. s. sandwichensis*, and, *C. s. bryani*. Extremely versatile in both behavior and diet, they forage on all available plant species with a diversity of foraging maneuvers. Diet includes a wide range of arthropods. Courtship, with singing and chasing, precedes breeding. Finely woven, freestanding cup nests are found in 'ohi'a (*Metrodiseros polymorpha*) and in other plant species in proportion to their abundance. Sexes participate nearly equally in all aspects of reproduction. Clutch size is usually 2 (1-3); eggs hatch at 18 days; nestlings are fed for 16 days, and fledglings are fed for more than a month. Foraging skills appear to develop during the long period (up to 10 months) that fledglings remain on natal territories.

DISTRIBUTION: 'Elepaio are found in most forested areas above 600 meters (2000'). Isolated populations occur in Kohala and on the west slope of Mauna Kea. Distribution is sparse in the saddle area which includes forested kipuka isolated by lava flows between Mauna Kea and Mauna Loa.

Map distribution

ABUNDANCE: Total population estimates for each subspecies during the Hawaii Forest Bird Survey (1976-1981) were as follows:
C. s. ridgwayi—150,000 in three populations;
C. s. sandwichensis—63,000; *C. s. bryani*—2500.
Densities peak between 1300 and 1900 meters (4500-6500').

LOCATION AND CONDITION OF KEY HABITAT: Hawai'i 'elepaio populations occur in a variety of forest types and across a range of elevations, but are most common in wet or mesic forests at higher elevations. The highest 'elepaio densities are in 'ohi'a (*Metrodiseros polymorpha*) or mixed 'ohi'a-koa (*Acacia koa*) forests above 1100 meters (3600'). Densities are lower in dry forests, scrub, and at low elevations. *C. s. bryani* occurs in dry mamane-naio forest (*Sophora chrysophylla* and *Myoporum sandwicense*) at high elevations on Mauna Kea. The condition of 'elepaio habitat varies considerably. Some areas are protected and actively managed for forest bird conservation; others have no active management at all. The former includes ungulate-free forests with relatively intact understory, while the latter includes forests suffering from

extensive habitat degradation as the result of feral ungulates and invasive alien weeds. Much of the species' current range is under state or federal jurisdiction. As a result, management can be considered stable even if habitat quality varies.

THREATS: Hawai'i 'elepaio are subject to the same threats as other Hawaiian forest birds. These include loss and degradation of habitat, predation by introduced mammals, and avian disease. For 'elepaio populations, specific threats include:

- Introduced disease, particularly avian pox (*Poxvirus avium*), is known to reduce both nesting success and adult survival. Annual survival and reproductive success of birds with active pox lesions is lower than that in healthy birds.
- Nest predation by rats, (*Rattus rattus*), is thought to impact reproductive success as well as mortality of adult females.
- Habitat loss and degradation, especially at low elevations, has been a major cause of decline historically. Population densities at Hakalau Forest NWR are lower in degraded open forest than in dense forest.
- Competition with introduced avian species may adversely affect 'elepaio populations.

CONSERVATION ACTIONS: No actions specifically target Hawai'i 'elepaio, but actions taken to conserve endangered forest bird species at Hakalau Forest National Wildlife Refuge, Hawai'i Volcanoes National Park, Pu'u La'au, and the 'Ola'a/Kilauea Partnership almost certainly benefit 'elepaio as well. These efforts include fencing and ungulate control, small mammal control, forest restoration, monitoring and disease research. Specific actions directed towards 'elepaio in the future may include:

- Protection and restoration of high elevation native forests. This must include elimination of feral ungulates and introduced plant species in native habitats.
- Predator control has been attempted with some success in Hawaiian forests. If sustained throughout breeding season, it may allow increased reproductive success of native forest birds.
- Hawai'i 'elepaio have been used as surrogates to develop captive propagation techniques for the endangered O'ahu subspecies.
- Screening for disease resistance is underway in some populations.
- Public education and outreach**.

MONITORING:

- Continue population and habitat condition surveys to assess efficacy of habitat management efforts.

RESEARCH PRIORITIES:

- Disease resistance and transmission. If resistant individuals are identified, translocation and/or captive propagation of these individuals may help recover populations.
- Quantitative investigation of diet to determine dietary overlap and possible competition with introduced avian species.
- Continue efforts to develop techniques for captive propagation to benefit O'ahu 'elepaio.

References:

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

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VanderWerf, E. A. 1998. 'Elepaio (*Chasiempis sandwichensis*). In *The Birds of North America*, No. 344 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.