

Photo

Forest Birds

O‘ahu ‘Elepaio

Chasiempis sandwichensis ibidis

SPECIES STATUS:

Federally Listed as Endangered

State Listed as Endangered

State recognized as endemic

Hawaii Natural Heritage Ranking G3—Rare with restricted range,
T1-subspecies critically imperiled globally

SPECIES INFORMATION: The O‘ahu ‘elepaio is a small, non-migratory, socially monogamous, monarchine flycatcher that defends all-purpose territories year-around. Extremely versatile in both foraging behavior and diet, it forages on all available plant species with a diversity of foraging maneuvers. Diet includes a wide range of arthropods. Finely woven, freestanding cup nests have been found in 20 plant species. 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. Fecundity is low (0.75 fledglings/pair).

DISTRIBUTION: Found only on O‘ahu, discrete populations are distributed equally between the Ko‘olau and Wai‘anae ranges, primarily in riparian valleys. Over half the current range is dominated by introduced plants. The current range represents only about 4% of the bird’s presumed historic range, which included most forested parts of O‘ahu.

Map distribution

ABUNDANCE: The current estimated population is less than 2000 birds, of which about 1770 are breeding individuals. They occur in six relatively large populations and several small populations.

LOCATION AND CONDITION OF KEY HABITAT: O‘ahu ‘elepaio populations occur in a variety of forest types and across a range of elevations. Common native plant species where ‘elepaio occur include papala kepau (*Pisonia umbellifera*), lama (*Diospyros sandwichensis*), mamaki (*Pipturus albidus*), kaulu (*Sapindus oahuensis*) and ‘ala‘a (*Pouteria sandiwiensis*). Common introduced plants in ‘elepaio habitat include strawberry guava (*Psidium cattleianum*), common guava (*Psidium guajava*), kukui (*Aleurites moluccana*), mango (*Mangifera indica*), and christmas berry (*Schinus terebinthifolius*). O‘ahu ‘elepaio are not found in very wet forests on windswept

summits or in very dry scrubland. Populations are higher in areas with tall riparian vegetation, a continuous canopy and dense understory. The species' adaptability to diverse environments is thought to reflect the high degree of habitat disturbance and abundance of alien plants in riparian valleys rather than actual preference for introduced plant species. Much of their current range is managed by the military or by the State Forest Reserve system. Most of this would be considered stable, though its condition varies as above.

THREATS: Due to their fragmented small populations and low fecundity, the following threats are of particular concern:

- 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 severely impact reproductive success. Control of rats with traps and poison resulted in a 112% increase in reproduction and a 66% increase in adult female survival.
- Habitat loss, especially at low elevations, has been a major cause of decline historically. However, areas of O'ahu that contain suitable forest and recently supported large 'elepaio populations are unoccupied, suggesting that other factors are probably more important.
- Genetic or stochastic processes may increase vulnerability to extinction, especially for the small fragment populations.
- Human actions, such as fires caused by military training activities and the potential introduction of additional predators also threaten areas designated as critical habitat for this species.

CONSERVATION ACTIONS: Past conservation efforts for the O'ahu 'elepaio include its official listing as an endangered species by both the USFWS and the state of Hawaii, the establishment of the O'ahu Forest National Wildlife Refuge as potential restoration habitat, and long term population and demographic surveys which have identified the most serious threats to its survival. In addition to common state-wide and island conservation actions, specific actions necessary for conservation include:

- Rat control to increase reproductive success and survival of adult females using snap traps and diphacinone bait stations is ongoing in the Honolulu Forest Reserve (DOFAW), at Shofield Barracks West and Makua Military Reservation (U.S. Army Environmental Division), in Honouliuli Preserve (The Nature Conservancy), and in Lualualei Valley (U.S. Navy and USDA). This activity should be continued and expanded.
- Habitat protection of remaining forest habitat on O'ahu. This includes prevention of loss to fire and development. The recently established O'ahu Forest National Wildlife Refuge may provide habitat in which to restore 'elepaio populations.
- Public outreach about the importance and benefits of rodent control.

MONITORING:

- Continue population and habitat condition surveys to assess efficacy of habitat management efforts.
- Continue demographic studies of reproductive success and survival, especially in the six core populations.

RESEARCH PRIORITIES:

DRAFT: Oahu elepaio, February 23, 2005

- Disease resistance and transmission. If resistant individuals are identified, translocation and/or captive propagation of these individuals may help recover populations.
- Determination of genetic population structure.
- Identify areas most suitable for restoration of populations or for creation of habitat dispersal links between existing populations.
- Continue efforts to develop techniques for captive propagation using surrogate species (Hawai`i 'elepaio).

References:

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