



Photo: Mark Collins

## Forest Birds

# Hawai'i 'Elepaio

*Chasiempis sandwichensis sandwichensis*

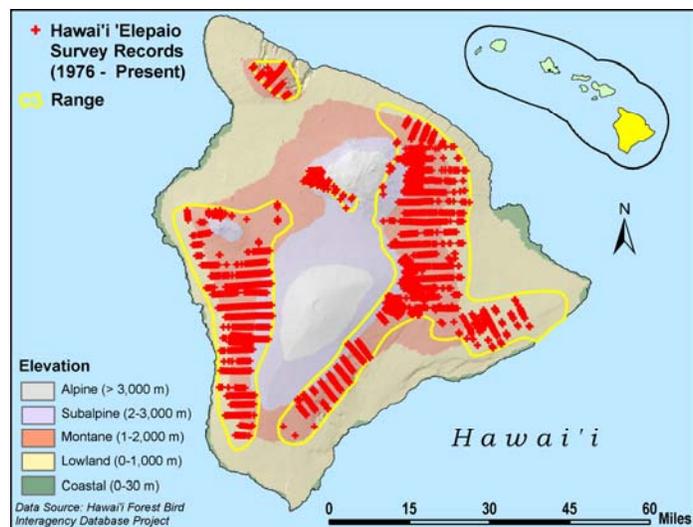
### SPECIES STATUS:

State recognized as Endemic  
 NatureServe Heritage Rank G3 – Rare with restricted range  
 IUCN Red List Ranking – Endangered

**SPECIES INFORMATION:** The Hawai'i 'elepaio is a small, adaptable monarch flycatcher (Family: Monarchiade) endemic to the island of Hawai'i at the subspecies level. 'Elepaio also occur on Kaua'i (*C. s. sclateri*) and O'ahu (*C. s. ibidis*); the latter subspecies is federally listed as endangered. Some authors recognize two additional subspecies on the island of Hawai'i (*C. s. ridgewayi* and *C. s. bryani*). Adult males and females are dark brown above and white below with variable amounts of brown streaking; males have black throats and females have white throats. The bird's name is derived from its primary song which is a shrill whistle given only by males. 'Elepaio use virtually all available substrates for foraging including the air, ground, logs, rock crevices, snags, and all parts of trees. Equally diverse in the use of foraging maneuvers, 'elepaio capture a wide range of arthropod prey by flycatching, gleaning while perched or hovering, and direct pursuit; foraging maneuvers vary depending on plant species from which prey is being captured and habitat type. The Hawai'i 'elepaio may prefer 'ohi'a (*Metrodieros polymorpha*) and kāwa'u (*Ilex anomola*) for foraging. Pairs remain together throughout the year and long-term pair bonds are common; one pair was together for 11 years. Unlike Hawaiian honeycreepers, both males and females participate almost equally in all aspects of rearing. Finely woven cup nests are built in 'ohi'a and in other trees in proportion to their availability. Clutch size is usually two and second nests are attempted, often while fledglings from first are still being fed. Young are fed by parents for at least a month, but remain on their natal territory for up to ten months.

**DISTRIBUTION:** Hawai'i 'elepaio occur in most forested areas above 600 meters (2,000 feet) elevation. Isolated populations occur in Kohala and on the western slope of Mauna Kea. Original distribution likely included all forested areas of the island.

**ABUNDANCE:** The Hawaiian Forest Bird Surveys (1976-79, 1983), estimated the statewide population of all subspecies at more than 270,000 individuals. The island of Hawai'i is home to three populations (150,000 individuals) of *C. s. ridgewayi*, plus one population each of *C. s. sandwichensis* (63,000) and *C. s. bryani* (2,500).



Kaua'i population has been estimated at 40,000, while the O'ahu population is estimated to be between 1,200 and 1,400. Highest density of birds occur between 1,300 and 1,900 meters (4,500-6,500 feet) elevation.

**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. Highest densities occur in 'ōhi'a or mixed 'ōhi'a-koa (*Acacia koa*) forests above 1,100 meters (3,600 feet). Much of the current range of the Hawai'i 'elepaio is managed for conservation by State and Federal agencies or private conservation partnerships.

**THREATS:** Hawai'i 'elepaio are likely susceptible to the same factors that threaten other native Hawaiian forest birds, including: loss and degradation of habitat, predation by introduced mammals, and disease. For Hawai'i 'elepaio populations, the following are of particular concern:

- **Predation.** On O'ahu, predation by black rats (*Rattus rattus*) has been implicated in the loss of nests and death of adult females. Rat control in these populations resulted in large increases in nest success and in the survival of adult females.
- **Disease.** Avian pox (*Poxvirus avium*) is known to reduce both nesting success and adult survival. On O'ahu, annual survival and reproductive success of birds with active pox lesions are lower compared to healthy birds; no information on the effect of avian malaria (*Plasmodium relictum*).
- **Habitat loss and degradation.** Historic habitat loss and degradation, especially at low elevations, is considered a major cause of declines. In Hakalau Forest National Wildlife Refuge, population densities are lower in degraded, open forests than in intact, dense forests.

**CONSERVATION ACTIONS:** Hawai'i 'elepaio likely have benefited from management activities designed to conserve other endangered forest birds species at Hakalau Forest National Wildlife Refuge, Hawai'i Volcanoes National Park, Pu'u Lā'au, and the 'Ōla'a/Kīlauea Watershed Partnership. These efforts include fencing, ungulate and small mammal control, forest restoration, habitat monitoring, and studies of disease and disease vectors. In addition to these efforts, future management specific to the Hawai'i 'elepaio may include the following:

- Protection and restoration of high elevation native forests, including the elimination of feral ungulates and non-native invasive plant species.
- Public education and outreach about the importance and benefits of rodent control.
- Continue protection and management of wildlife sanctuaries and refuges.

**MONITORING:** Continue forest bird surveys and habitat monitoring. This information is needed to assess the efficacy of habitat management efforts.

**RESEARCH PRIORITIES:** Research priorities for most Hawaiian forest birds include developing improved methods for controlling rats (*Rattus* spp.) and feral cats (*Felis silvestris*) in native forests, determining the ecological requirements of *Culex* mosquitoes at mid- and high-elevation forests, and developing methods to control mosquito populations. Research priorities specific to the Hawai'i 'elepaio include the following:

- Continue to screen individuals for disease resistance. If resistant individuals are identified, translocation and/or captive propagation of these individuals may help recover populations.

- Continue efforts to develop techniques for captive propagation to benefit Hawai'i 'elepaio.

**References:**

Scott JM, Mountainspring S, Ramsey FL, Kepler CB. 1986. Forest bird communities of the Hawaiian islands: their dynamics, ecology and conservation. Lawrence, (KS): Cooper Ornithological Society.

U.S. Fish and Wildlife Service. 2003. Draft revised Recovery plan for Hawaiian forest birds. Portland, (OR): U.S. Fish and Wildlife Service. 428 pp.

VanderWerf EA. 1998. 'Elepaio (*Chasiempis sandwichensis*). In The Birds of North America, No. 344 (Poole A, Gill F, editors.). Philadelphia, (PA): The Academy of Natural Sciences; and Washington DC: The American Ornithologists' Union.