
Photo: NRCS

Waterbirds

Aeʻo
or Hawaiian stilt

Himantopus mexicanus knudseni

SPECIES STATUS:
Federally Listed as Endangered
State Listed as Endangered
State Recognized as Indigenous
NatureServe Heritage Rank G5 - Secure
Recovery Plan for Hawaiian Waterbirds - USFWS 2011

SPECIES INFORMATION: The aeʻo or Hawaiian stilt is a slender, graceful waterbird (Family: Recurvirostridae) that is considered distinct from the North American subspecies, *H. m. mexicanus*. Adults are mostly black above and white below with a long, thin black bill and long, delicate pink legs. Foraging habitat consists of ephemeral freshwater, brackish water, or saltwater habitats. They are opportunistic and prey on a variety of animals that inhabit shallow water or mudflats, including polychaete worms, small crabs, insects, and small fish. Aeʻo frequently move among wetland habitats in search of food. Breeding and foraging habitats differ, and individuals move between the two daily. Nesting occurs on freshly exposed mudflats with some low-growing vegetation; individuals also will nest on islands in freshwater and brackish water ponds or artificial floating nest structures. They aggressively defend their nests, calling and diving at intruders and performing broken-wing displays to attract potential predators away from their nests. Nesting occurs between March and August and peaks in May and June. Generally, three to four eggs are laid, and the precocial chicks hatch approximately 24 days later. Both parents incubate eggs and brood young, and fledglings remain with their parents for several months.

DISTRIBUTION: The aeʻo generally is found in wetland habitats below 200 meters (660 feet) elevation on all the Main Hawaiian Islands except for Kahoʻolawe.
On Oʻahu, most of the population can be found on the north and windward coast at Kahuku Point on the James Campbell National Wildlife Refuge, in Kahuku Point oyster ponds, in Amorient aquaculture ponds, and in Roland and Nuʻupia ponds in Kāneʻohe.

Smaller numbers use wetland habitats associated with Pearl Harbor and the leeward coast. On Kauaʻi, the aeʻo is found in large river valleys, including Hanalei, Wailua, and Lumahaʻi valleys; on the Mānā Plains; and at reservoirs and sugarcane effluent ponds in Līhue and Waimea. Populations move annually between Kauaʻi and Niʻihau in response to water level changes in Niʻihauʻs ephemeral lakes. On Maui, most aeʻo use the coastal wetlands of Kanahā and Keālia; smaller numbers use reservoirs and aquaculture habitats. On Molokaʻi, the southern coastal wetlands and playa lakes are important habitats. On Lānaʻi, a few aeʻo are permanent residents

at the Lānaʻi City wastewater treatment ponds. On the island of Hawaiʻi, the largest number of aeʻo are found on the Kona coast, especially in anchialine ponds, from Kawaihae Harbor south to Kailua. Other habitats include Makalawena and Aimakapā ponds; Cyanotech Ponds; the Kona wastewater treatment ponds; wetlands along the Hāmākua Coast; and the Kohala River valleys of Waipiʻo, Waimanu, and Pololū. Historically, aeʻo occurred on Niʻihau, Kauaʻi, Oʻahu, Maui, and Molokaʻi; there are no documented records of the species on the island of Hawaiʻi prior to 1961. Interisland movements by aeʻo are suspected.

ABUNDANCE: On the basis of biannual waterbird counts conducted by the Division of Forestry and Wildlife, the population is estimated at between 1,100 and 2,100 birds, with an increasing trend.

LOCATION AND CONDITION OF KEY HABITAT: Aeʻo use a variety of wetland habitats but have specific habitat requirements. Water depth and vegetation density are important determinants of foraging habitat suitability, and the species prefers sites with a water depth of less than 24 centimeters (9 inches). Preferred foraging habitats are early successional marshlands with shallow water and perennial low-growing vegetation or exposed tidal flats; other wetland habitats with similar characteristics also are used. Examples include freshwater habitats (ephemeral lakes, reservoirs, settling basins, natural or manmade ponds, and sugar settling basins), brackish water habitats (coastal ponds, silted fish ponds, and estuaries), and saltwater habitats (inshore reefs, silted beach areas, and tidal flats). Ephemeral lakes on Molokaʻi, Maui, and Niʻihau provide important habitats for aeʻo as do prawn farms and anchialine pools. Preferred nesting habitats are low-relief islands in bodies of fresh, brackish, or salt water and sites adjacent to these areas. Examples include reservoirs, settling basins, natural or manmade ponds, marshes, taro patches, silted fish ponds, salt evaporation pans, and other wetlands. Loafing areas are usually open mudflats or open flooded pasturelands where visibility is good and predator populations are low. Some important habitats are located in National Wildlife Refuges or on State lands and receive management attention with others remain unprotected. These mostly include wetlands facing development or those used for agriculture or aquaculture, such as playa lakes on Niʻihau; Opaekaʻa marsh; Lumahaʻi wetlands on Kauaʻi; Amorient prawn farms; Lāʻie wetlands; Uko, Punahoʻolapa, and Waiheʻe marshes; Waialua lotus fields; Waipiʻo Peninsula ponds on Oʻahu; Paialoa and ʻŌʻōʻia playa fish ponds on Molokaʻi; and Opaeʻula and Waiākea-Loko Waka ponds on the island of Hawaiʻi.

THREATS: Historically, the species was a popular game bird, and hunting contributed to population declines until its prohibition in 1939. Similar to the rest of the Hawaiian native waterbirds, aeʻo are threatened by:

- Habitat loss. In the last 110 years, approximately 31 percent of coastal plain wetlands have been lost. A shift in wetland agriculture to other agriculture crops also has reduced the amount of wetland habitats.
- Introduced and native predators. Adults and young are vulnerable to predation by dogs (*Canis familiaris*), rats (*Rattus* spp.), feral cats (*Felis silvestris*), the small Indian mongoose (*Herpestes auropunctatus*), cattle egrets (*Bulbulcus ibis*), barn owls (*Tyto alba*), and bullfrogs (*Rana catesbeiana*). They also are vulnerable to predation by pueo or Hawaiian short-eared owl (*Asio flammeus sandwichensis*) and ʻaukuʻu or black-crowned night herons (*Nycticorax nycticorx hoactli*).
- Altered hydrology. Altering wetland habitats for flood control or to allow them to serve as municipal water sources makes them generally unsuitable for aeʻo.

- Nonnative invasive plants. Several species of invasive plants, including pickleweed (*Batis maritime*), water hyacinth (*Eichornia crassipes*), and mangrove (*Rhizophora mangle*) reduce open water, mudflats, or shallows.
- Avian diseases. Botulism outbreaks result in mortality. West Nile virus and avian flu may pose a risk to Hawaiian waterbirds if these diseases reach Hawai'i.
- Environmental contaminants. Fuel and oil spills in wetlands result in toxicity and habitat degradation.
- Climate change. Sea level rise due to climate change may result in a loss of coastal wetland habitats used by Hawaiian waterbirds.

CONSERVATION ACTIONS: The State of Hawai'i, the U.S. Fish and Wildlife Service (USFWS), and private organizations and landowners have protected 82 percent of the core wetlands for Hawaiian waterbirds and 17 percent of their supporting wetlands. Other actions specific to conservation of ae'o and other Hawaiian waterbirds should include the following:

- Continue to manage, restore, and protect core and supporting wetland habitats.
- Eliminate or reduce populations of introduced predators.

MONITORING: Continue annual statewide surveys of populations and habitat monitoring to detect changes in population trends.

RESEARCH PRIORITIES:

- Analyze annual survey data for correlations, including use of specific wetlands, time of year, and state of wetlands, in order to improve management for ae'o.
- Conduct a population viability analysis to identify population numbers and time spans that can serve as predictors for the long-term recovery of the ae'o.
- Use climate change models to predict sea-level rise, and assess key wetlands to protect/create in light of the analysis.

References

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