



Photo: NRCS

Waterbirds

Ae'ō or Hawaiian Stilt

Himantopus mexicanus knudseni

SPECIES STATUS:

Federally listed as Endangered

State listed as Endangered

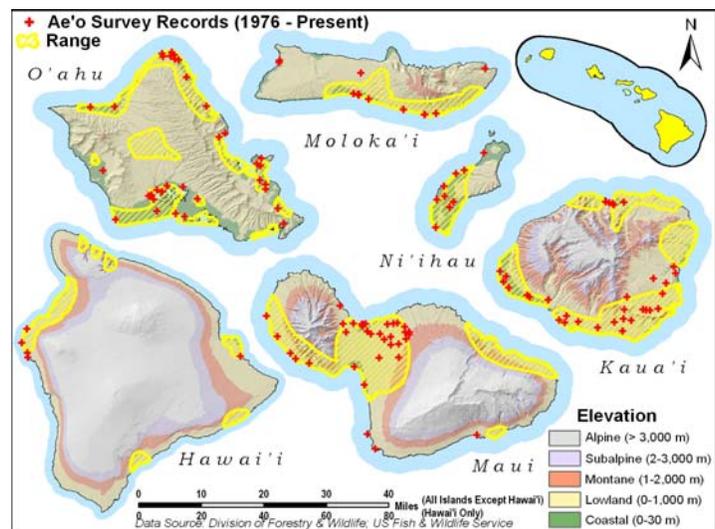
State recognized as Indigenous

NatureServe Heritage Rank G5 - Secure

Recovery Plan for Hawaiian Waterbirds - USFWS 1999

SPECIES INFORMATION: The ae'ō or Hawaiian stilt is a slender, graceful waterbird (Family: Recurvirostridae) that is considered distinct from the North American subspecies, *H. m. mexicanus*. Adult males and females are mostly black above and white below with a long, thin black bill and long, delicate pink legs. Foraging habitat consists of ephemeral fresh, brackish, or salt water habitats. Water depth and vegetation density are important determinants of the suitability of foraging habitat. Ae'ō (Hawaiian stilt) prefers sites with a water depth of less than 24 centimeters (nine inches), limited and low growing vegetation, or exposed tidal flats. The species is opportunistic and preys on a variety of animals that inhabit shallow water or mudflats, including polychaete worms, small crabs, insects, and small fish. Ae'ō (Hawaiian stilt) frequently move among wetland habitats in search of food. Breeding habitat differs from foraging habitat and individuals move between the two habitats daily. Nesting occurs on freshly exposed mudflats with some low growing vegetation, also will nest on islands in fresh and brackish ponds or artificial floating nest structures. Ae'ō (Hawaiian stilt) 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 (i.e., capable of leaving nest shortly after hatching) chicks hatch approximately 24 days later. Both parents incubate eggs and brood young, and fledglings remain with their parents for several months. Inter-island movements by ae'ō (Hawaiian stilt) are suspected.

DISTRIBUTION: Ae'ō (Hawaiian stilt) are generally found in wetland habitats below 200 meters (660 feet) elevation on all the MHI except for Kaho'olawe. On O'ahu, most of the population can be found on the north and windward coast at Kahuku Point on the James Campbell National Wildlife Refuge, Kahuku Point oyster ponds, Amorient aquaculture ponds, and Roland and Nu'upia ponds in Kāne'ohe. Smaller numbers use wetland habitats associated with Pearl Harbor and along the leeward coast. On Kaua'i, stilts are found in large river



valleys including Hanalei, Wailua, and Lumaha'i, on the Mānā Plains, and at reservoirs and sugarcane effluent ponds in Līhue and Waimea. Ae'o (Hawaiian stilt) populations move annually between Kaua'i and Ni'ihau in response to water level changes in Ni'ihau's ephemeral lakes. On Maui, most populations use the coastal wetlands of Kanahā and Keālia, smaller numbers use reservoirs and aquaculture habitats. On Moloka'i, the southern coastal wetlands and playa lakes are important habitats. On Lāna'i, a small population of ae'o (Hawaiian stilt) are permanent residents at the Lāna'i City wastewater treatment ponds. Finally, on the island of Hawai'i, the largest number of ae'o (Hawaiian stilt) 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 Waipi'o, Waimanu, and Pololū. Historically, ae'o (Hawaiian stilt) certainly occurred on Ni'ihau, Kaua'i, O'ahu, Maui, and Moloka'i; there are no documented records of the species on the island of Hawai'i prior to 1961.

ABUNDANCE: Island-wide population, based on semi-annual waterbird counts conducted by DOFAW, suggests that the population is stable or slightly increasing, but count numbers are variable. Between 1993 and 2003, excluding 2001, the average annual number of ae'o (Hawaiian stilt) counted has been approximately 1,300 individuals; in 2001 an average of 2,680 individuals was recorded. Historic population estimates are variable.

LOCATION AND CONDITION OF KEY HABITAT: Ae'o (Hawaiian stilt) use a variety of wetland habitats, but have specific habitat requirements. Preferred foraging habitats are early successional marshlands with shallow water, and perennial, low growing vegetation or exposed tidal flats (see species information); other wetland habitats that share 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 Moloka'i, Maui, and Ni'ihau provide important habitats for ae'o (Hawaiian stilt) as do prawn farms and anchialine pools. Preferred nesting habitats are sites adjacent to or low-relief islands in bodies of fresh, brackish, or salt water. 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 pasture lands where visibility is good and predator populations are low. Some important habitats are located in National Wildlife Refuges or on State lands (see distribution) and receive management attention. However, other important habitats are not protected. These mostly include wetlands facing development or those used for agriculture or aquaculture. Examples include: playa lakes on Ni'ihau, Opaeka'a marsh, Lumaha'i wetlands on Kaua'i, Amorient prawn farms, Lā'ie wetlands, Uko, Punaho'olapa, and Waihe'e marshes, Waialua lotus fields, and Waipi'o Peninsula ponds on O'ahu, Paialoa and 'Ō'ō'ia playa fishponds on Moloka'i, and Opa'e'ula, and Waiākea-Loko Waka ponds on the island of Hawai'i.

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, ae'o (Hawaiian stilt) 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 predators. Ae' o (Hawaiian stilt) are especially vulnerable to predation by dogs (*Canis domesticus*), 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*) as well as by pueo or Hawaiian short-eared owl (*Asio flammeus sandwichensis*), and 'auku'u or black-crowned night herons (*Nycticorax nycticorax hoactli*); all potentially prey on adult or young ae' o (Hawaiian stilt).
- Altered hydrology. Modifications to wetland habitats for flood control or to provide municipal water sources are generally incompatible with ae' o (Hawaiian stilt) populations.
- Non-native invasive plants. Several species of invasive plants, including pickleweed (*Batis maritima*), water hyacinth (*Eichornia crassipes*), and mangrove (*Rhizophora mangle*) reduce open water, mudflats, or shallows.
- Avian diseases. The most important disease affecting Hawaiian waterbirds is botulism (*Clostridium botulinum*).
- Environmental contaminants. Fuel and oil spills are the most important contaminant threat to Hawaiian waterbirds.

CONSERVATION ACTIONS: The goals of conservation actions are not only to protect current populations and key breeding habitats, but also to establish additional populations, thereby reducing the risk of extinction. The State of Hawai'i and the USFWS have protected 23 percent of the State's remaining coastal plain wetlands. In 1997, Ducks Unlimited developed a comprehensive, cooperative plan to protect and restore wetlands used by native waterbirds. Efforts directed at this species included prohibiting hunting, population monitoring, and basic life history research. In addition to common statewide and island conservation actions, specific actions directed at ae' o (Hawaiian stilt) should include:

- Restoration of wetland habitat as well as continued management of existing habitat.
- Development of more effective predator control methods.

MONITORING: Continue statewide surveys of populations in known and likely habitats. This information is needed to assess the efficacy of habitat management efforts.

RESEARCH PRIORITIES:

- Conduct long-term demographic studies to determine basic reproductive biology, population trends, survival rates, and limiting factors as well as feeding habits. Design studies to facilitate comparisons between populations near urban areas and those located in more rural locations.

References:

Robinson JA, Reed JM, Skorupa JP, Oring LW. 1999. Black-necked stilt (*Himantopus mexicanus*). In *The Birds of North America*, No. 449 (Poole A, Gill F, editors). Philadelphia, (PA): The Academy of Natural Sciences; and Washington DC: The American Ornithologists' Union.

U.S. Fish and Wildlife Service. 1999. Draft revised recovery plan for Hawaiian waterbirds, Second Revision. Portland, (OR): U.S. Fish and Wildlife Service. 107 pp.