



Photo: DOFAW

Waterbirds

'Alae ke'oke'o or Hawaiian Coot

Fulica alai

SPECIES STATUS:

Federally listed as Endangered

State listed as Endangered

State recognized as endemic

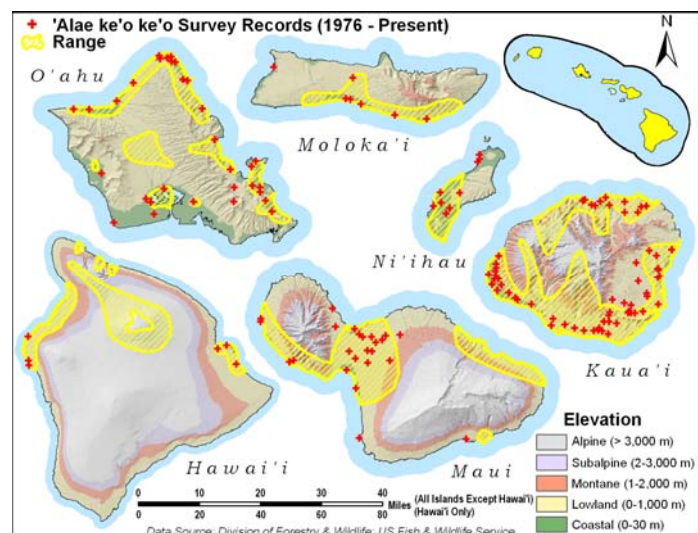
NatureServe Heritage Rank G2 - Imperiled

IUCN Red List Ranking - Vulnerable

Recovery Plan for Hawaiian Waterbirds - USFWS 1999

SPECIES INFORMATION: The 'alae ke'oke'o or Hawaiian coot is a small waterbird (Family: Rallidae) endemic to Hawai'i. Adult males and females have a black head, a slate gray body with white undertail feathers, and a prominent white frontal shield and bill; feet are lobed rather than webbed and are greenish-gray. The Native Hawaiian considered 'alae ke'oke'o (Hawaiian coot) to be a deity, but also considered it good to eat. Life history and breeding biology are poorly known. The species is somewhat gregarious and uses freshwater and brackish wetlands, including agricultural (e.g., taro fields) wetlands and aquaculture ponds. 'Alae ke'oke'o (Hawaiian coot) are generalists and feed on land, from the surface of the water, or will dive; also will graze on grass adjacent to wetlands. Food items include seeds and leaves, snails, crustaceans, insects, tadpoles, and small fish. The species will travel long distances, including between islands, when local food sources are depleted. Nesting habitat includes freshwater and brackish ponds, irrigation ditches, and taro fields. Floating nests are constructed of aquatic vegetation and found in open water or anchored to emergent vegetation. Open water nests are usually composed of mats of water hyssop (*Bacopa monnieri*) and Hilo grass (*Paspalum conjugatum*). Nests in emergent vegetation are typically platforms constructed from buoyant stems of species such as bulrush (*Scirpus* spp.). Nesting occurs year round, but most activity occurs between March and September. Nest initiation is tied to rainfall as appropriate water levels are critical to nest success. Clutch size range from three to ten eggs, and precocial young hatch after a 25 day incubation period.

DISTRIBUTION: 'Alae ke'oke'o (Hawaiian coot) occur in coastal plain wetlands usually below 400 meters (1,320 feet) elevation on all the MHI except for Kaho'olawe; however, breeding is restricted to relatively few sites. About 80 percent of the population occurs on Kaua'i (Hanalei, *Hawaii's Comprehensive Wildlife Conservation Strategy* October 1, 2005



Hulē'ia, Opaeka'a), O'ahu (coastal wetlands and reservoirs such as Lake Wilson and Nu'uuanu Reservoir, Kahuku Point and along the windward shore), and Maui (Kanhā and Keālia Ponds, Nu'u Pond). The remaining 20 percent of the population occurs in coastal ponds and playa wetlands, such as Paialoa Pond on Moloka'i, the Lāna'i City wastewater treatment, 'Aimakapā and 'Ōpae'ula ponds on the Kona Coast, and Waiākea and Loko Waka ponds on the island of Hawai'i.

ABUNDANCE: Island-wide population, based on semi-annual waterbird counts conducted by DOFAW, suggests that the population is stable and is estimated at between 2,000 and 4,000 individuals.

LOCATION AND CONDITION OF KEY HABITAT: 'Alae ke'oke'o (Hawaiian coot) generally occur in lowland wetland habitats with suitable emergent plant growth interspersed with open water, especially freshwater wetlands and taro fields, but also freshwater reservoirs, canefield reservoirs, sewage treatment ponds, brackish wetlands, and rarely saltwater habitats. However, on Kaua'i, some birds occur in plunge pools above 1,495 meters (4,900 feet) elevation and on the island of Hawai'i, stock ponds up to 2,000 meters (6,600 feet) elevation. The species typically forages in water less than 30 centimeters (12 inches) deep, but will dive in water up to 120 centimeters (48 inches) deep. Compared to 'alae'ula (Hawaiian moorhen), 'alae ke'oke'o (Hawaiian coot) prefer to forage in more open water. Logs, rafts of vegetation, narrow dikes, mud bars, and artificial island are important for resting. Ephemeral wetlands support large numbers during nonbreeding season and may provide a key habitat. Some important habitats are located in National Wildlife Refuges and State sanctuaries (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: Similar to the rest of Hawaiian native waterbirds, 'alae ke'oke'o (Hawaiian coot) are threatened by:

- **Habitat loss.** In the last 110 years, approximately 31 percent of coastal plain wetlands have been lost. A shift from wetland agriculture to other agriculture crops also has reduced the amount of wetland habitats.
- **Introduced predators.** 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*) all potentially prey on adult or young 'alae ke'oke'o (Hawaiian coot).
- **Altered hydrology.** Modifications to wetland habitats for flood control or to make them suitable as municipal water sources are generally incompatible with 'alae ke'oke'o (Hawaiian coot) 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 population monitoring and basic life history research. In addition to common statewide and island conservation actions, specific actions directed at 'alae ke'oke'o (Hawaiian coot) should include:

- Restoration of wetland habitat as well as continued management of existing habitat.

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 using managed wetlands and those located in unmanaged wetlands.

References:

IUCN Red List of Threatened Species. Available at: <http://www.redlist.org>.

Pratt DH, Brisbin IL. 2002. Hawaiian coot (*Fulica alai*). In *The Birds of North America*, No. 697 (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.