



Photo: NRCS

Waterbirds

'Alae 'Ula or Hawaiian Moorhen

Gallinula chloropus sandvicensis

SPECIES STATUS:

Federally listed as Endangered

State listed as Endangered

State recognized as Indigenous

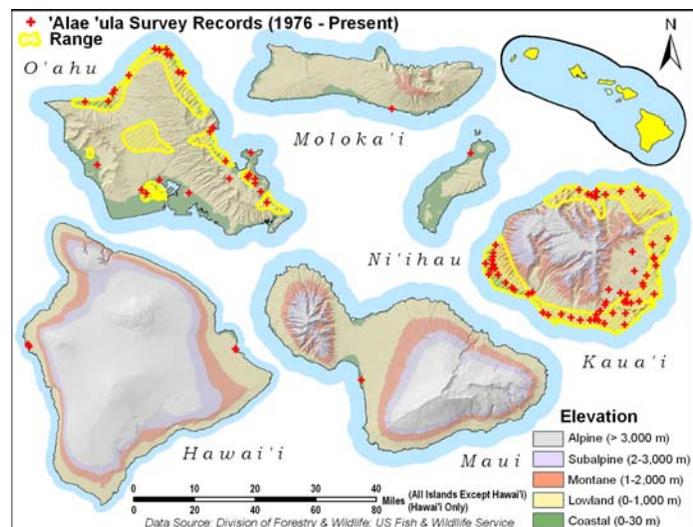
NatureServe Heritage Rank G5 - Secure

Recovery Plan for Hawaiian Waterbirds - USFWS 1999

SPECIES INFORMATION: The 'alae 'ula or Hawaiian moorhen is a small, striking waterbird (Family: Rallidae), and is one of 12 recognized subspecies; *G. c. sandvicensis*, endemic to Hawai'i. 'Alae 'ula (Hawaiian moorhen) is very similar to its North American relative in appearance; adult males and females are black above and dark slate blue below, with a white stripe on their flanks, and a prominent red shield over their red and yellow bill. Feet are lobed rather than webbed, and males are larger than females. In Hawaiian mythology, a moorhen brought fire to humans, which explains the red on its forehead, a symbol of the scorching from the fire. The species' life history and breeding biology are poorly known. The species uses a variety of freshwater habitats and can be somewhat secretive, although it is often seen swimming across open water. 'Alae 'ula (Hawaiian moorhen) are opportunistic feeders and their diet likely varies with habitat, but includes algae, grass seeds, plant material, insects, and snails. Nesting habitat is restricted to areas with standing freshwater less than 61 centimeters (24 inches) deep with dense emergent vegetation. Nesting occurs year round, but most activity occurs between March and August. Nesting phenology is apparently tied to water levels and the presence of appropriately dense vegetation. Platform nests are constructed in dense vegetation over water. The particular species of emergent plant used for nest construction is not as important as stem density and vegetation height. Five to six eggs are laid and hatch after 22 days. Although chicks are precocial and can swim shortly after hatching, they are dependent on their parents for several weeks.

DISTRIBUTION:

'Alae 'ula (Hawaiian moorhen) generally occur in wetland habitats below 125 meters (410 feet) elevation on the islands of Kaua'i and O'ahu, although there have been reports from Ke'anae Peninsula on Maui and from the island of Hawai'i. On Kaua'i, the largest populations occur in the Hanalei and Wailua river valleys. 'Alae 'ula



(Hawaiian moorhen) also occur in the irrigation canals on the Mānā Plains of western Kauaʻi and in taro fields. On Oʻahu, the species is widely distributed with most birds found between Haleʻiwa and Waimanalo; small numbers occur at Pearl Harbor and the leeward coast at Lualualei Valley. Historically, ʻalae ʻula (Hawaiian moorhen) occurred on all the MHI except for Lānaʻi and Kahoʻolawe.

ABUNDANCE: ʻAlae ʻula (Hawaiian moorhen) are quite secretive and current survey methods are inadequate to accurately estimate population size. Island-wide population, based on semi-annual waterbird counts conducted by DOFAW, suggests that the population is increasing, but count numbers are variable. Between 1993 and 2003, the average annual number of ʻalae ʻula (Hawaiian moorhen) counted has been just under 300 individuals. The species was common at the turn of the last century, but by the 1940s its status was considered precarious.

LOCATION AND CONDITION OF KEY HABITAT: ʻAlae ʻula (Hawaiian moorhen) occur in freshwater marshes, wetland agricultural areas (e.g., taro patches), reedy margins of water courses (e.g., streams, irrigation ditches), reservoirs, and wet pastures, and infrequently, brackish water habitats. Important breeding areas are found on the Hanalei National Wildlife Refuge on Kauaʻi, and the Kahuku and ʻUkoʻa wetlands and Waialua lotus fields on Oʻahu. Key habitat features for ʻalae ʻula (Hawaiian moorhen) include dense stands of robust emergent vegetation near open water, floating or barely emergent mats of vegetation, and water depths less than one meter (3.3 feet). 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: Opaekaʻa marsh, Lumahaʻi wetlands on Kauaʻi, and Amorient prawn farms, Lāʻie wetlands, Uko, Punahoʻolapa, and Waiheʻe marshes, Waialua lotus fields, and Waipiʻo Peninsula ponds on Oʻahu.

THREATS: Similar to the rest of Hawaiian native waterbirds, ʻalae ʻula (Hawaiian moorhen) 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.** 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 ʻalae ʻula (Hawaiian moorhen).
- **Altered hydrology.** Modifications to wetland habitats for flood control or to provide municipal water sources are generally incompatible with ʻalae ʻula (Hawaiian moorhen) 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, basic life history research, and re-introduction efforts. In 1983, the USFWS translocated six 'alae 'ula (Hawaiian moorhen) to Moloka'i. In addition to common statewide and island conservation actions, specific actions directed at 'alae 'ula (Hawaiian moorhen) should include:

- Restoration of wetland habitat as well as continued management of existing habitat.
- Re-introduce 'alae 'ula (Hawaiian moorhen) to Maui Nui and Hawai'i.

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:

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

References:

Bannor BK, Kiviat E. 2002. Common moorhen (*Gallinula chloropus*). In *The Birds of North America*, No. 685 (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.