

Waterbirds

Nēnē or Hawaiian Goose

Branta sandvicensis



Photo: Jack Jeffery

SPECIES STATUS:

Federally listed as Endangered

State listed as Endangered

State recognized as Endemic

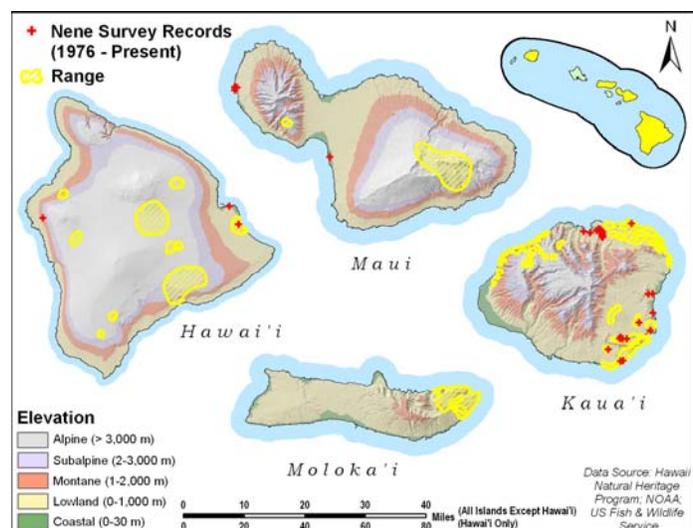
NatureServe Heritage Rank G1 - Critically imperiled

IUCN Red List Ranking - Vulnerable

Revised Recovery Plan for the Nēnē or Hawaiian Goose (*Branta sandvicensis*) – USFWS 2004

SPECIES INFORMATION: Historically, at least five species of geese (family: Anatidae) occurred in Hawai'i; today, only the nēnē, or Hawaiian goose, survives. Adult males and females are mostly dark brown or sepia with a black face and crown, cream-colored cheeks, and a buff neck with black streaks. Females are smaller than males. Compared to other geese, nēnē are more terrestrial and have longer legs and less webbing between their toes; these differences likely facilitate nēnē walking on lava flows. Nēnē graze and browse on the leaves, seeds, flowers, and fruits of at least 50 native and non-native grasses, sedges, composites, and shrubs. Composition of diet varies with location and habitat, and the species may require a diverse suite of food plants. Currently, several species of non-native grass are important in high-elevation habitats. Nēnē disperse seeds and therefore play an important ecological role, especially in influencing the species composition of early successional plant communities. Historically, flocks moved between high-elevation feeding habitats to lowland nesting areas. Pairs mate for life and engage in relatively simple courtship displays in which the male attacks or threatens potential competitors, runs back to his mate, and calls loudly. Nēnē have an extended breeding season and eggs can be found in all months except May, June, and July, although the majority of birds nest between October and March, and most clutches are laid between October and December. Nēnē nests consist of a shallow scrape, moderately lined with plant materials and down. Pairs typically return to previous years' nests sites, typically in dense vegetation; when available, kīpuka may be preferred. Females lay between two and five eggs which hatch after 30 days. Young are precocial and are not fed by their parents; however, young remain with their parents for up to one year.

DISTRIBUTION: Nēnē occur between sea level and 2,400 meters (7,800 feet) elevation on the island of Hawai'i, Maui, Kaua'i, and Moloka'i. Historically the



species was found on all MHI and likely were widespread.

ABUNDANCE: Current population is estimated at between 1,300 and 1,500 individuals with 378 birds on the island of Hawai'i (148 at Hawai'i Volcanoes National Park and 230 scattered throughout the rest of the island, including Hakalau Forest National Wildlife Refuge, Kahuku, Keauhou, Kīpuka 'Āinahou, Kea'au, and Pu'u Wa'awa'a), 295 to 325 birds on Maui (200-230 at Haleakalā National Park, 95 on west Maui), 720 birds on Kaua'i (including Hanalei National Wildlife Refuge, Kilauea National Wildlife Refuge, Crater Hill, Kīpū Kai and the Nā Pali Coast), and 74 birds on Moloka'i. All populations have been or are currently being supplemented by captive-bred birds. In 1951, the wild nēnē population was estimated at 30 individuals. Information on historical abundance is limited by a lack of information on the historical distribution and composition of native plant communities.

LOCATION AND CONDITION OF KEY HABITAT: Nēnē historically occurred in lowland dry forest, shrubland, grassland, and montane dry forest and shrubland. Habitat preferences of contemporary populations are likely biased as preferences may be influenced by the location of release sites of captive-bred birds. Birds currently use a wide variety of habitats including coastal dune vegetation and non-native grasslands (e.g., golf courses, pastures, rural areas), sparsely vegetated low and high elevation lava flows, mid-elevation native and non-native shrubland, early successional cinderfall, cinder deserts, native alpine grasslands and shrublands, and open native and non-native alpine shrubland-woodland community interfaces. On the island of Hawai'i, nēnē can be found from sea level to 2,400 meters (7,900 feet) elevation, on Maui from sea level to 2,348 meters (7,700 feet) elevation, on Kaua'i from sea level to 183 meters (600 feet) elevation, and on Moloka'i from sea level to 274 meter (900 feet) elevation. Breeding areas encompass a variety of habitats including beach strand, shrubland, grassland, and lava rock, and occur at a range of elevations. On the island of Hawai'i and Maui, most nests are built under native vegetation such as pūkiawe (*Styphelia tameiameia*), 'a'ali'i (*Dodonaea viscosa*), and 'ōhi'a (*Metrosideros polymorpha*). On Kaua'i however, most nesting areas are dominated by non-native species and nēnē often nest under Christmas berry (*Schinus terebinthifolius*), shrub verbena (*Lantana camara*), and ironwood (*Casuarina* spp.). The condition of habitats occupied by nēnē varies considerably. Many of the areas used by the species are managed by the State of Hawai'i and the USFWS.

THREATS: Historical threats included habitat loss and degradation, hunting, and predation by rats (*Rattus* spp.), cats (*Felis silvestris*), dogs (*Canis domesticus*), and the small Indian mongoose (*Herpestes auro-punctatus*). Current threats include predation by the above suite of non-native mammals, exposure in high-elevation habitats, nutritional deficiency due to habitat degradation which may result in low productivity, a lack of lowland habitat, human-caused disturbance and mortality (e.g., road mortality, disturbance by hikers), behavioral problems related to captive propagation, and inbreeding depression.

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. Past and current actions include captive propagation and release of captive-bred individuals into the wild, predator control, habitat enhancement, research and monitoring, private conservation efforts, formation of the Nēnē Recovery Action Group, and public education. In addition to common statewide and island conservation actions, specific management directed toward nēnē should include:

- Identify and protect all habitats used by nēnē including foraging habitat, breeding grounds, and summer flocking areas.
- Increase predator control effort and effectiveness and habitat enhancement and restoration efforts, especially in native grasslands and shrublands.
- Prevent the introduction of the small Indian mongoose (*Herpestes auropunctatus*) on Kaua'i and the establishment of other potential predators on all islands.
- Develop standardized monitoring protocols.
- Minimize the potential for human-nēnē interactions or conflicts through increased public education.
- Develop a statewide, long-range management plan for all populations.

MONITORING:

- Continue surveys of populations and their distribution in known and likely habitats.
- Monitor the efficacy of predator control techniques.

RESEARCH PRIORITIES:

- Conduct studies on diet and nutrition, particularly as it relates to the nutritional value of non-native versus native vegetation, focusing on the needs of goslings and breeding females.
- Determine the role of disease in limiting populations. If disease is determined to be problematic in some populations, determine the prevalence of disease-resistant individuals.
- Refine predator control methods.
- Conduct studies to examine other potential limiting factors and to determine the carrying capacity of different habitats.

References:

Banko PC, Black JM, Banko WE. 1999. Hawaiian goose (*Branta sandvicensis*). In *The Birds of North America*, No. 434 (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. 2004. Draft revised recovery plan for the Nene or Hawaiian Goose (*Branta sandvicensis*). Portland, (OR): U.S. Fish and Wildlife Service. 148 + xi pp.