



Marine Reptiles

Honu or Green sea turtle

Chelonia mydas

SPECIES STATUS:

Federally Listed as Threatened

State Listed as Threatened

State Recognized as Indigenous

IUCN Red List - Endangered

SPECIES INFORMATION: Mature males are distinguished from females by their longer, thicker tails. Little information exists on the feeding behavior of post-hatchlings and juveniles in pelagic waters, but most likely they are exclusively carnivorous (e.g., soft-bodied invertebrates and fish eggs). Subadult and adult turtles in nearshore benthic environments are almost completely herbivorous; feeding primarily on macroalgae and seagrasses. Research from the Caribbean suggests that green sea turtles are a keystone species that help to maintain healthy seagrass beds. Hawaiian honu exhibit slow growth rates, even compared to other populations, with an average annual growth rate of 1–5 centimeters (0.5 to 2 inches) per year. Turtles reach sexual maturity at about 35 to 40 years of age. Females in the Northwestern Hawaiian Islands (NWHI) breed once every two or more years, while males may breed every year. Honu mate at sea and approximately 25 to 35 days after mating females swim onshore to excavate a nest and lay eggs. Females may lay up to six clutches per season, often returning to the same site for each clutch every 12 to 15 days. Each clutch contains 100 eggs and sex determination is temperature-dependent. Incubation takes about 60 days and hatchlings emerge from their nests at night. Both males and females often haul out between nesting intervals to bask in the sun.

DISTRIBUTION: Occurs around all the Hawaiian Islands. Important foraging areas are along the coasts of O‘ahu, Moloka‘i, Maui, Lānai, Hawai‘i, Lisianski Island, and Pearl and Hermes Reef. Ninety percent of nesting occurs on French Frigate Shoals of the NWHI, with small numbers of nests on the other islands and atolls of the NWHI and Main Hawaiian Islands (MHI). Hawaiian turtles only migrate throughout the 2,450-kilometer (1,500-mile) expanse of the Hawaiian Archipelago, and so make up a discrete population. Worldwide, green sea turtles occur throughout tropical, subtropical, and to a lesser extent, temperate waters, and they nest in more than 80 countries.

ABUNDANCE: The French Frigate Shoals annual nesting population is estimated at 400 breeding females, with an increasing population trend. Worldwide, approximately 100,000 to 150,000 females nest each year.

LOCATION AND CONDITION OF KEY HABITAT: Honu are most often found in shallow, protected or semi-protected, water around coral reefs and coastal areas. These habitats contain

sea grasses and algae for foraging and shelter from predators such as tiger sharks. Key foraging habitat can be found around most of the Hawaiian Islands, but they often return to the same foraging areas after the breeding season. Foraging habitat is degraded on the south coast of Moloka'i; Kāne'ōhe Bay, O'ahu; Hanalei Bay, Hanamaulu Bay, and Nawiliwili Harbor, Kaua'i; Maalaea Bay, Kihei, and Lahaina, Maui; and Hilo Bay, Hawai'i. Cleaning stations and resting habitats are important habitats for turtles as well. Nesting occurs on minimally disturbed sandy beaches, which is critical to the survival of the honu. The condition of nest beaches in the NWHI is relatively good compared to other areas because the NWHI are designated as a refuge with little development, and predation on eggs and hatchlings is low.

THREATS:

- Disease. Fibropapillomatosis (FP), a tumor-forming disease associated with herpesvirus, occurs on honu in Hawai'i. FP tumors are external and can impede critical functions such as swimming, eating, breathing, vision, and reproduction. Prevalence of FP peaked in the mid-1990s and has since declined around most Hawaiian islands, except around watersheds with high nitrogen outputs, where rates are increasing.
- Habitat degradation. Alien seaweeds are displacing important foraging, resting, and cleaning habitats. Other threats include loss or degradation of foraging habitats along coastal areas due to development, sedimentation, soil erosion, or sewage.
- Fisheries bycatch. Mortality of adult and juvenile turtles results from fisheries bycatch. Due to federally mandated take reduction measures implemented by Hawaiian longline fisheries, bycatch rates have been reduced by approximately 90 percent since 2004. However, bycatch remains a threat in other regions.
- Predation. Eggs and hatchlings are preyed on by introduced species (e.g., mongoose, rats, dogs, feral pigs, and cats) on the MHI. Predation on hatchlings by seabirds, fish, and sharks in the open ocean is a threat, although the extent of predation is unknown.
- Human disturbance and activities. Snorkeling and other recreational activities may cause disturbance or stress to honu. Injury or mortality from collisions with boats is also a threat.
- Marine debris. Entanglement by, or ingestion of, marine debris is a source of mortality.
- Climate change. Effects of climate change, such as increased temperatures, sea level rise, ocean acidification, and increased storm frequency leading to erosion, could have a variety of effects on honu, such as decreased reproductive success, loss or degradation of nesting habitat, and changes in juvenile and adult distribution.

CONSERVATION ACTIONS: Actions specific to honu should include the following:

- Protect, restore, and manage nesting, foraging, and resting habitats and cleaning stations.
- Reduce marine debris in the marine environment and on beaches.
- Continue partnerships with local conservation groups to monitor and conserve turtles, respond to stranding, and conduct research and outreach programs.
- Conduct education and outreach efforts, particularly to address threats such as fishing interactions, marine recreation interactions, and marine debris.

MONITORING:

- Continue to monitor nesting sites.
- Continue to monitor abundance and distribution.
- Continue to monitor the occurrence and effects of FP.
- Continue to monitor turtles harmed or killed by marine debris and from fisheries bycatch.

RESEARCH PRIORITIES:

- Examine the environmental factors associated with FP.
- Evaluate effects of tourist activities on turtles.
- Determine distribution, abundance, and status of post-hatchlings, juveniles, and adults in the marine environment.

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