



## Seabirds Play a Vital Role

**Description:** Seabirds have adapted to life within the marine environment and often spend months at sea feeding on fish and invertebrates. Some species roost on land, while others return only when it is time to build nests and rear young. Seabirds tend to have a long life span (20 to 60 years), have fewer young than other birds, and invest a lot of time in their offspring. Many species nest in colonies. Ecologically, seabirds are an important resource as they play a significant role in cycling nutrients from the ocean to the land. The presence of seabirds is a strong indicator of the health of their environments. Many species are currently threatened by loss of nesting and roosting habitat, introduced predators, disease, ingestion of litter, and fishing by-catch.

**Cultural Significance:** Seabirds and humans share a long history. A contributing factor to the Polynesian colonization of the Pacific Islands may have been the use of seabirds for navigation. Noddies, boobies, and terns have different ranges when flying from land to the open ocean to feed, and early seafarers may have determined distance to an island by the species foraging nearby. Seabirds were also an early food source, which ultimately contributed to the demise of many seabird species. Polynesians utilized other parts of seabirds, including bones for tool construction and feathers for helmets and capes. In Hawaii, Kāhili (feather standards) were adorned with tern and tropicbird feathers. On Samoa, Fiji, and Tonga, tropicbird streamers (central tail feathers) were used in headdresses and as articles of trade.

**Species Status:** Rare, threatened, and endangered seabird species are of primary concern to the Pacific Island Network (PACN). Two species within these categories are the endangered Hawaiian petrel (*Pterodroma sandwichensis*) and threatened Newell's shearwater (*Puffinus auricularis newelli*). Both are found in Hawai'i Volcanoes National Park (HAVO), Haleakalā National Park (HALE), and Kalau-papa National Historical Park (KALA).

According to fossil remains, the Hawaiian

petrel, or 'ua'u, was once the most numerous seabird in the main Hawaiian Islands, and it nested in a wide elevation range. Colonies are now confined to high-elevation subalpine habitat where mongooses are absent, although cats are not deterred from predating colonies in this habitat. 'Ua'u nest in burrows in small numbers at HAVO, and in much larger colonies at HALE.

The Newell's shearwater, or 'a'o, was also abundant and widespread on the main Hawaiian Islands, but is now reduced to a few remnant breeding colonies on the islands of Moloka'i and Hawai'i. Its stronghold remains Kaua'i, but even there the population may be in decline. The 'a'o breeds in burrows or deep rock crevices at higher elevations, frequently below dense vegetation. Owing to the presence of predators, this species has been known to nest on steep slopes exceeding 65°.



Photo by J. Jeffrey

'A'o or Newell's shearwater (*Puffinus auricularis newelli*)

'Ua'u or Hawaiian Petrel (*Pterodroma sandwichensis*)



**Inventories:** Several inventories to assess the presence of seabirds were conducted in PACN parks. An inventory at HALE used a combination of audio call-count surveys and visual surveys to detect seabirds within park boundaries. A HAVO inventory focused on colony searches and radar surveys to identify species, flight corridors, and colony sites. Ornithological radar surveys conducted at both HAVO and KALA detected movements, flight directions, and behaviors of flying shearwaters and petrels. An inventory in the National Park of American Samoa (NPSA) was conducted to

Fua'o or Red-footed booby chick (*Sula sula rubripes*)



assess distribution and relative abundance of seabirds along the coastlines of Tutuila Island and at high elevations on Ta'u Island.

**Monitoring:** The National Park Service is developing a Seabird monitoring protocol to focus on the Hawaiian petrel and Newell's shearwater at HAVO, HALE and KALA, and on low-elevation seabird species at NPSA. Goals of Hawaiian petrel monitoring include detection of changes in nest densities within known colonies, assessment of reproductive success and predation rates in these colonies, and changes in the distribution of colonies. The presence of both species at KALA will be determined using auditory and visual identification methods. The distribution and relative abundance of seabirds at NPSA will be monitored through dawn boat surveys of park shoreline.

**Conservation and Management:** Because seabirds show remarkable site fidelity, returning to the same burrow or nest yearly, colonial nesting areas are in need of protection. PACN Parks provide important seabird breeding and roosting habitat and offer a measure of protection from human activities and predators. At HALE and HAVO, introduced predators and ungulates have been removed on park lands through fencing of sensitive areas and intensive trapping programs. Also, access to small islands near KALA is carefully regulated to minimize seabird disturbance and prevent introductions of invasive species. Outreach programs to educate the public about the importance of seabirds, and the effects of human disturbance at nest sites, have begun at several parks. These efforts, in conjunction with long-term monitoring, will help parks to maintain, protect, and enhance our seabird resources.

—G. Ackerman & D. Hu

### For more information:

1. [http://www.fws.gov/pacific/migratorybirds/Seabird\\_Conservation\\_Plan\\_pdf.htm](http://www.fws.gov/pacific/migratorybirds/Seabird_Conservation_Plan_pdf.htm)
2. <http://www.state.hi.us/dlnr/dofaw/cwcs>