

Brown Noddy

Anous stolidus pileatus

Hawaiian: Noio koha

Family: Laridae; Subfamily: Sterninae

Identification

The Brown Noddy is a medium-sized tern-like bird. They have a dark brown plumage overall with a darker tail and wingtips and an ashy-white forehead. Their crown is sharply demarcated from black lores and merges evenly into a gray nape. Their tail is long, narrow and wedge-shaped and they have a black bill and dark brown feet and legs. Plumage of both sexes is similar, but males are significantly larger than females. Juvenal plumage is similar to adult plumages, except juveniles are darker with little white on the head.

Brown Noddies can be distinguished from the similar Black Noddy (*Anous minutus*) by being distinctly larger and stouter. They also have a browner overall plumage, a proportionately shorter, thicker bill, and their cap is not as white. At sea, the Brown Noddy may look similar to a Shearwater (*Puffinus* spp.) due to dark coloration, but may be distinguished by long tail, lack of white under parts and underwings, and a more direct flight pattern, similar to small gulls.

Survival and Lifespan

Lifespan of Brown Noddies is at least 25 years. Annual survival for males is 70-96% and for females 67-98%.

Distribution

Breeding (Apr-Oct; year-round possible)

Brown Noddies are an abundant species with pantropical distribution. They breed on tropical and subtropical islands and islets in colonies numbering from a few pairs to hundreds or thousands. In Hawaii, they nest throughout the archipelago from Kure Atoll to Hawaii Island including all the Northwest Hawaiian Islands and several offshore islets in the main archipelago (Kaula [Niihau], Moku Manu and Manana [Oahu]). Brown Noddies typically remain near (within 100 km) their breeding colonies year-round.

Marine

Brown Noddies rarely stray out of warm tropical and subtropical waters. During the non-breeding season the birds are distributed at sea typically within 100 km of breeding sites where they associate with large tuna schools.

Breeding Ecology

Brown Noddies breed in large, dense colonies where they nest on the ground, on cliffs or in trees or shrubs (Commonly naupaka, *Scaevola sericea*). Pairs stay together throughout the year, but there is little information on the length of pair bonds. Both parents incubate the single egg, and share parental duties. Egg-laying in Hawaiian colonies is protracted with eggs laid in nearly all months, but the peak is in March - August. Fledging occurs between 40-56 days after hatching, but post-fledging feeding continues for several weeks. Birds first breed at three to seven years of age.

Feeding and Prey

- Feeding guild – TUNA BIRD
- Food capture – Unlike most temperate terns, they do not dive for food, but capture prey found at the water's surface or just below. They forage low over the water by seizing prey while in the air (air-dipping) or splashing bill-first into the water without submerging fully. Unlike many other terns, Brown Noddies do not carry prey in their bill.
- Foraging distribution – This species feeds in the nearshore to offshore range and they are not as pelagic as the Sooty Tern (*Sterna fuscata*).

- Microhabitat for foraging – Brown Noddies usually forages in large, multispecies flocks of hundreds to thousands of birds. Flocks typically feed over foraging schools of predatory fishes (eg., jacks [Carangidae], tuna, Dolphinfish [Coryphaenidae]) or small cetacea which drive prey species to the surface making them available.
- Diet – Brown Noddies feed mainly on small fish and squid, but their diet varies with location. Samples collected mainly from adults in Hawaii comprised 66% fish, 33% squid, and 1% crustacea and marine insects by volume. There were 33 fish and 2 squid families represented; the commonest by mean percent volume were: goatfish (28%), flying squid (28%), jacks (10%), and flying fishes (9%) with mean lengths of fish prey ranging from 24 - 93 mm and of squid 40 - 60 mm.

Threats and Status

In Hawaii, the population is estimated at 112,000 breeding pairs with the largest populations occurring on Nihoa (35,000 pairs) and Kaula (35,000 pairs). The worldwide population is estimated at 500,000 - 1,000,000 breeding pairs.

Main threats to the species include:

- Predation – Adults and nests of burrowing and ground-nesting species are extremely vulnerable to predation by introduced mammals. Although all sites in Northwest Hawaiian Islands are free of rats, cats, and dogs, the Main Hawaiian Islands support large populations of non-native mammalian predators. Native predators such as 'Iwa or Great Frigatebirds (*Fregata minor*), black-crowned night herons (*Nycticorax nycticorax*), Laysan Finches (*Telespiza cantans*), and shorebirds will depredate eggs and chicks, especially when adults are flushed from nests by human disturbance.
- Fisheries – In Hawaii, overfishing may directly or indirectly harm seabird populations; harvest of Skipjack and Yellowfin Tuna (*Thunnus albacare*) could eliminate predatory fish needed to drive prey species to the surface.
- Invasive species – Non-native plants, specifically Golden Crown-beard (*Verbesina encelioides*), degrade nesting habitat by out-competing native shrubs and filling in open areas needed for nesting. Also, introduced big-headed ants (*Pheidole megacephala*) at Kure and Midway may cause nestling mortality and facilitate the destruction of native vegetation by supporting a nonnative scale insect.

Selected Readings

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USFWS Midway Species Account: <http://midway.fws.gov/wildlife/brno.html>