## **BROWN NODDY**

Anous stolidus

Other: Common Noddy, Noio koha

A.s. pileatus

## breeding visitor, indigenous

Brown Noddy is a Pantropical species (Cramp and Simmons 1985, AOU 1998) that breeds fairly commonly on Johnston, Wake, the Hawaiian, and other archipelagos across the Pacific (King 1967, Amerson and Shelton 1976, Harrison 1983, Higgins and Davies 1996, AOU 1998, Wiles 2005, Rauzon et al. 2008). In the late 1800s Brown Noddies were only found breeding in the Northwestern Hawaiian Islands (Wilson and Evans 1899, Henshaw 1902a), perhaps because accessible nesting populations around the Southeastern Islands were exploited by native Polynesians (E 1[12]:1-4; Munro 1944). Breeding in Hawaii occurs primarily in May-October, with numbers at colonies diminishing in November-March, especially in islands to the NW. When not breeding they disperse widely throughout the tropical and subtropical Pacific, although they are found more commonly near islands (King 1970). See Chardine and Morris (1996) for more information on the natural history and biology of this species.

Brown Noddies breed on every island group within the Northwestern Hawaiian Islands, with a total population size of about 80,000 breeding pairs (Table). The largest populations breed on Nihoa (30,000 pairs), Necker (13,000), Laysan (12,500), and Lisianski and French Frigate (10,000 each), with 1,000-2,000 pairs breeding on, in descending order, Pearl and Hermes, Gardner Pinnacles, Kure, and Midway (Table). As with other ground-nesting seabirds, populations on Midway were affected by human activities and the introduction of rats, with <50 noted during the 1940s (Fisher and Baldwin 1946, Fisher 1949), but populations increased both here and on Kure following the removal of rats, to about 1000 pairs in the mid 2010s; populations also steadily increased at French Frigate between the 1980s and 2010s (cf. Hatfield et al. 2011, Reynolds et al. 2013b). At Kure and Midway the majority of breeding individuals depart colonies and no breeding has been recorded during Dec-Mar, whereas on Laysan and colonies to the SE, breeding occurs year-round but with much reduced numbers during winter. Information on the history of the species and data on breeding phenology for each Northwestern Island, compiled as part of the POBSP, can be found in the Atoll Research Bulletins for each breeding locality (see Seabird Page).

In the *Southeastern Hawaiian Islands*, Brown Noddies breed on Kaula Rock and Lehua Islets off *Ni'ihau* (Caum 1936; <u>Table</u>); estimates from the 1980s were of 15-25,000 and 300-500 breeding pairs, respectively (Harrison 1990), but summer counts from Kaula in the 1980s through 2015 suggest about 4000 pairs there (USNC 2016), and the colony on Lehua appears to have extinguished, probably due to predation by Barn Owls and/or rats (VanderWerf et al. 2007). The only other breeding colonies in the Southeastern Islands occur on islets off the E coast of *O'ahu*, including Manana, Mokumanu, and Mokolea Rock, where an estimated 22,010 pairs breed (<u>Table</u>). In the 1900s they bred commonly on Mokumanu (*cf.* Seale 1900) but were absent from Manana (Northwood 1940b), perhaps due to its greater accessibility to humans (*E* 1[12]:1-4; Munro 1944), since restricted through greater conservation efforts at this state sanctuary. Most nesting on these islets occurs in Mar-Oct, with reduced numbers breeding in Nov-

Feb (Richardson and Fisher 1950). Other early reports of nesting on Southeastern Islands (e.g., Dole 1879) result from confusion with <u>Black Noddy</u>. On the Honolulu <u>Christmas</u> <u>Bird Count</u>, Brown Noddies were recorded on only 17 of 64 counts during1944-2007, with the highest counts being of 149 in Dec 1975 and 56 in Dec 1972; no discernable trends were apparent, but the species was only recorded on 4 counts between 1990 and 2014, suggesting a decline in numbers or in conditions when the species is present around O'ahu in winter.

Brown Noddies are regularly observed offshore and from these and other Southeastern Islands, including *Kaua'i*, *Moloka'i*, *Lana'i*, *Maui*, and *Hawai'i I*, where they feed in association with sub-surface schools of tuna (Hebshi et al. 2008). Large numbers can be observed streaming towards or away from breeding colonies, i.e., 2500 observed off La'ie Point, O'ahu, during the late afternoon of 4 Oct 2015, returning to the colony on Moku Manu. Higher counts from single day boat trips (away from breeding colonies) include 60 between Kaua'i and Ni'ihau 3 Sep 2002 and 100+ off Kona, Hawai'i I, 2-7 Apr 2002. Likewise, *at sea*, they are found in moderate numbers, usually foraging with other terns and seabirds associated with tuna (King 1970, Rowlett 2002). Numbers both offshore and at sea are higher in summer than in winter. They are very rarely observed sitting or flying over Southeastern Islands, although one was found dead in Kaunakakai, Moloka'i 14 Feb 1901 (BPBM 1687) and they are occasionally turned into the SLP and <u>SOS</u> rehabilitation facilities, primary young birds found during summer (e.g., BPBM 175932). One reported sitting on a telephone wire in Honolulu 5 Sep 1961 (*E* 22:55) may have represented a different species.

The subspecies of Brown Noddy that breeds throughout the central Pacific and Indian Oceans, including the Hawaiian Islands, is *A.s. pileatus*.

## Acronyms and Abbreviations

## Literature cited

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