

GREAT FRIGATEBIRD

Fregata minor

Other: *Iwa*

F.m. palmerstoni

breeding visitor, indigenous

Great Frigatebird is nearly a pantropical species, being absent only from the Atlantic Ocean north of the equator (King 1967, Harrison 1983, Marchant and Higgins 1990, Metz and Schreiber 2002). It is a common breeder at Johnston and Wake atolls (Amerson and Shelton 1976, Rauzon et al. 2008). In the Northwestern Islands it breeds in Mar-Oct, it roosts in large numbers on certain islets of the Southeastern Islands, and is a fairly common sight soaring over most islands (although less common over Hawai'i I) throughout the year. POBSP data indicate a slight depression in monthly counts during Nov-Feb, especially in the more northwestern of the islands; when not breeding, it appears to disperse widely throughout tropical and subtropical seas, with vagrants recorded N to California (CBRC 2007), and individuals banded at Kure recovered as far away as the Marshall and Philippine Is (Woodward 1972). Hadden (1941) records a large movement of birds from Midway toward Kure on 29 Dec 1938. A frigatebird, probably Great, is present in the fossil record of Ulupau Head, O'ahu, indicating presence in the islands for at least 200,000 years (James 1987).

There was much confusion about the naming of frigatebirds in the 1800s. Early ornithologists in Hawaii (Isenbeck *in* Kittlitz 1834, Dole 1869, Stejneger 1888, Wilson and Evans 1899, Rothschild 1900) considered the Hawaiian population to be the same species as Ascension Island Frigatebird (*F. aquila*) of the c. Atlantic Ocean, although Cassin (1858) and Dole (1879) correctly assigned them to "*palmerstoni*" based on Gmelin's (1789) "*Pelecanus palmerstoni*" from Palmerston I in the Cook Is group. Wilson and Evans acknowledged that *F. minor*, then considered restricted to the S Pacific, might also occur in Hawaii. It was left to Mathews (1914) and Rothschild (1915) to clarify the taxonomy, identifying the Hawaiian birds as the species *minor* and attributing them to the widespread Pacific subspecies "*palmerstoni*". Magnificent Frigatebirds (*F. magnificens*) could reach the Hawaiian Islands from the Americas and are difficult to distinguish from Great Frigatebirds in most plumages (Harrison 1983, 1987; Howell 1994, Pyle 2008). Observers in Hawaii have made attempts to identify Magnificent Frigatebirds, but without success.

Great Frigatebirds breed on all *Northwestern Hawaiian Islands* except **Gardner Pinnacles** (where roosting birds are frequently noted), with an overall estimated breeding population size of >10,000 pairs during the 1980-mid 2010s ([Table](#)). The largest breeding colony was found on **Nihoa** (ca. 4,000 pairs), followed by **Laysan**, **Lisianski** and **Necker**, **French Frigate** ([HRBP](#) 5702; where population sizes were stable during the 1980s-2000s; Hatfield et al. 2011, Reynolds et al. 2013b), **Pearl and Hermes**, **Kure**, and **Midway** ([Table](#)). Populations on Lisianski and Laysan were reduced after rabbits decimated breeding vegetation in the 1800s and early 1900s but both vegetation and breeding populations have since recovered (Fefer et al. 1987). Substantial numbers of roosting, non-breeding birds have resulted in counts at colonies that are often twice as high or more as the totals of breeders, and numbers of both breeding and non-breeding

birds have shown substantial inter-annual variation. Roost counts of 1,994 individuals on the Midway [Christmas Bird Count](#) in Dec 2003, 758 in French Frigate 23 Dec 2007, 381 on Kure 18 Aug 2007 (Vanderlip 2007), and 962 on Laysan 1 Mar 2012 were notable. Information on the history of Great Frigatebird 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](#)).

W. Beresford *in* Dixon (1789) noted frigatebirds "breeding" on Kaula Rock, where feathers were collected by Polynesians for short cloaks (King 1779, Cook and King 1784), but this may have referred to roosting birds. Caum (1936) casually noted Great Frigatebirds nesting on Lehua Islet off *Ni'ihau* in 1931-1932, VanderWerf et al. (2007) observed courting birds there, and two were seen carrying sticks in Dec 2011, suggesting occasional breeding. Otherwise, only two breeding records of single nests exist for the *Southeastern Hawaiian Islands*, on Mokumanu Islet off *O'ahu* in summer 1970 (*E* 31:18, *E* 32:98-99; Shallenberger and Myers 1971 include a photo of a chick) and in summer 2008. This is also the site of the largest roost counts in the Southeastern Islands, at times exceeding 1,000 birds (e.g., Richardson and Fisher 1950, 1,153 counted there as part of the Honolulu [Christmas Bird Count](#) on 26 Dec 1971; *E* 32:70); higher numbers are undoubtedly present in Jul-Sep when totals at other roosts can be 3-4 times as high as winter counts. Large numbers commuting to and from this roost site are frequently seen flying along or just off the NE coast of O'ahu; Honolulu [Christmas Bird Count](#) data further indicate a peak in abundance around the island during the 1950s-1970s ([Graph](#)), likely reflecting increase in seabird activity related to sewage deposition off Honolulu during this period (see [Pomerine Jaeger](#)).

Roosting sites (along with high counts) off other Southeastern islands include Kaula Rock SW of Ni'ihau (up to 1,415 noted in Apr 2013. USNC 2016; and a mostly white leucisitic bird photographed there 16-18 Apr 1984, *E* 46:19; [HRBP](#) 1447); Lehua Islet off *Ni'ihau* (up to 350 on 24 Aug 2015); Mokuaeae Islet off Kilauea Point NWR, *Kaua'i* (up to 700 in Jul 2000; see also Byrd and Zeillemaker 1981); Moku-Ho'oniki Islet off *Moloka'i* (up to 4 birds on 9 Sep 1981; *E* 50:77) and up to four birds and evidence of a larger roost on a remote rocky cliff in the Kawaikapu Preserve near the ne. corner of Moloka'i, noted in Aug 2016 ([HRBP](#) 6326); and Moku Mana (up to 54 on 14-15 Aug 1998), Alau (up to 150 on 15 May and 26 Jun 2015; cf. [HRBP](#) 5633), and Molokini (up to 131 on 2 Aug 2012) islets off *Maui*. During storms (or periods of approaching storms) flocks of frigatebirds can be seen soaring in swirls over the Southeastern Islands. Counts of these can be >100 over Kaua'i, O'ahu, and Maui (e.g., >300 over Punaluu, Oahu, 25 Jul 1981, 225 over Waipi'o Peninsula, O'ahu, 16 Aug 1985, and 100-200 along the N coast of Maui in Oct-Dec 2007), and occasionally > 20 over the other islands (e.g., 30 over *Kaho'olawe* 14 Aug 2002; 25 over Hapuna Beach, *Hawai'i*, 28 Jun 1978 [*E* 39:61]; 30+ over Honomaliu Bay, Hawai'i, 29 May 1988 [*E* 48:65], and 28 over Pololu Valley, Hawai'i. 24 Jul 2014). The high count for *Lana'i* was of 8 over Kauumlapau Harbor 11 Jan 1980. At least 21 Great Frigatebirds were found stranded on O'ahu in 1990-2003 and turned into the SLP rehabilitation facility and one was turned into the [SOS](#) program on Kaua'i between 2008 and 2016 ([SOS data](#)).

Densities of Great Frigatebirds *at sea* drop quickly > 9 km from shore; they frequently feed by kleptoparasitizing tropicbirds and boobies (Gilardi 1994), a more

productive activity near roosting and breeding colonies than at sea. Although Rowlett (2002; [HICEAS data](#)) recorded them on 69 of 93 observing days at sea around the Hawaiian Islands in Aug-Nov 2002, daily counts were usually 0-2 when > 45 km from an island. King (1970) also recorded Great Frigatebirds in low numbers throughout the year in his study area S and E of the Southeastern Islands, with little indication of seasonal patterns. Spear et al. (1999) recorded only 3 during 144 hrs of surveys SE of Hawai'i I. in spring and fall 1984-1991.

[Acronyms and Abbreviations](#)

[Literature cited](#)

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