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First observations of Least Tern (*Sternula antillarum*) eggs and other breeding observations on the island of O‘ahu, Hawai‘i

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ABSTRACT—The Least Tern (*Sternula antillarum*) commonly breeds along coastal beaches and major interior rivers of North America and the Caribbean. Least Terns have been observed in Hawai‘i since the 1970s; however, few breeding attempts have been documented. Nests have been discovered on the northwestern Hawaiian island of Midway Atoll and the southeastern Hawaiian island of Hawai‘i. While nesting is thought to also occur on the islands of O‘ahu and French Frigate Shoals based on observations of juvenile Least Terns, no observations of nests had been recorded for these islands prior to this study. In this paper we describe 2 accounts of discovering Least Tern eggs in the Ki‘i Unit of the James Campbell National Wildlife Refuge on O‘ahu, as well as several observations of breeding behavior in wetlands within the Pearl Harbor region of O‘ahu. Received 14 January 2020. Accepted 18 May 2021.

Key words: behavior, breeding, ground, Hawai‘i, nesting, shorebird.

Primeras observaciones de los huevos y otras observaciones reproductivas del charrán *Sternula antillarum* en la isla de O‘ahu, Hawái

RESUMEN (Spanish)—El charrán *Sternula antillarum* anida comúnmente a lo largo de playas costeras y grandes ríos interiores en Norteamérica y el Caribe. Este charrán ha sido observado en Hawái desde la década de 1970; sin embargo, se han documentado pocos intentos reproductivos. Se han descubierto nidos en la isla hawaiana atolón Midway y en la isla hawaiana suroriental de Hawái. Si bien se piensa que también se encuentran en las islas O‘ahu y French Frigate Shoals con base en observaciones de charranes juveniles, no se han registrado nidos en estas islas previas a este estudio. En este artículo describimos 2 reportes del descubrimiento de huevos de este charrán en la unidad Ki‘i del James Campbell National Wildlife Refuge en O‘ahu, así como varias observaciones de comportamiento reproductivo en humedales en la región Pearl Harbor de O‘ahu.

Palabras clave: anidación, ave playera, comportamiento, Hawái, reproducción, suelo.

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The Least Tern (*Sternula antillarum*) commonly breeds along coastal beaches and major interior rivers of North America and the Caribbean (Thompson et al. 2020). Nests are typically built on open beaches and islands free of vegetation (Burger and Gochfeld 1990, Smith and Renken

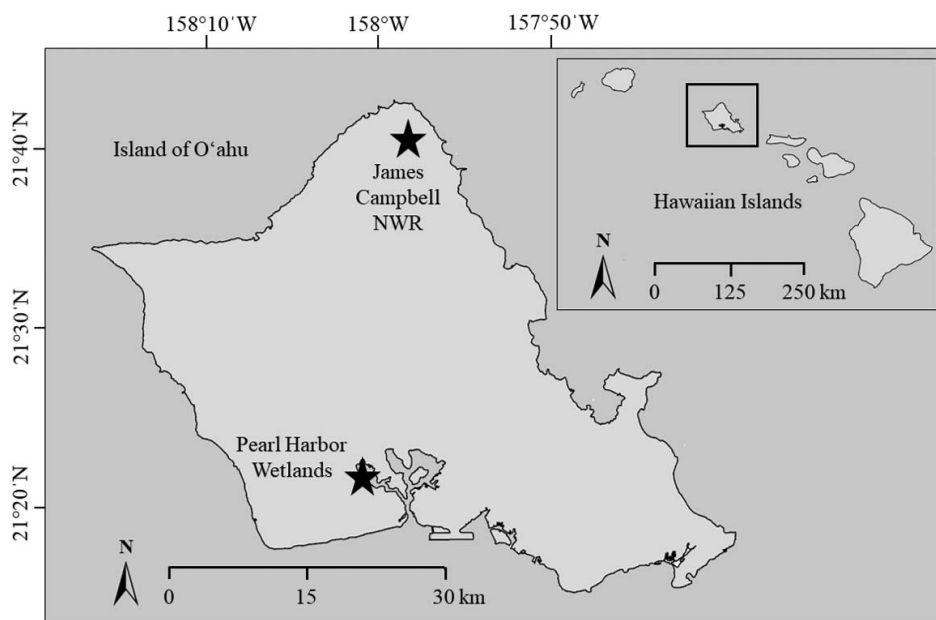


Figure 1. James Campbell National Wildlife Refuge (NWR) and Pearl Harbor wetlands on the island of O'ahu, Hawai'i.

1991). Before egg-laying, courtship consists of elaborate aerial displays and calling by males, after which the male offers fish to the female (Wolk 1974). Least Tern nests consist of a simple scrape in sand, shell, or other fragmented material. A typical clutch is 2 or 3 eggs, with both adults incubating and caring for young. Least Terns often display aggressive behavior when defending nests and young (Wolk 1974).

The Least Tern is an uncommon migrant in the Hawaiian Islands, with documented occurrences in the northwestern Hawaiian Islands on Kure Atoll, Midway Atoll, Laysan, and French Frigate Shoals, and in the southeastern Hawaiian Islands on O'ahu, Maui, and Hawai'i (Pyle and Pyle 2017). Least Terns have been observed in Hawai'i from March to December since the 1970s; however, very few breeding attempts have been confirmed.

Pyle et al. (2001) observed incubation at a nest by a pair of Least Terns on Midway Atoll, and nesting has continued sporadically on Midway since then (EAV, pers. obs.). On Hawai'i Island, Szczyt et al. (2014) confirmed Least Tern nesting using DNA from an unviable egg, and Baird et al. (2016) recorded 2 Least Tern nests. Adult Least Terns with juveniles have been recorded on O'ahu and French Frigate Shoals, suggesting local

reproduction (Pyle and Pyle 2017). However, no Least Tern nests have been confirmed on these islands.

Here we describe 2 Least Tern nests with eggs that we discovered in 2019 while surveying waterbirds in the Ki'i unit of James Campbell National Wildlife Refuge (NWR) on the island of O'ahu. We also provide details about 2 other likely breeding events by Least Terns on O'ahu in 2002 and 2017 in wetlands within the Pearl Harbor region of O'ahu, in which recently fledged juveniles were observed, but the nest was not found.

We found the first Least Tern nest on 8 July 2019 in the easternmost pond of the Ki'i Unit of James Campbell NWR on O'ahu (Fig. 1). We first saw 5 adult terns sitting on a small island in the middle of the pond. Adults were characterized by gray rumps and tails, white undersides, yellow bills, black caps, and short rectrices (Pratt et al. 1987, Clapp 1989, Conant et al. 1991, Pyle et al. 2001). As we moved closer to the island, the terns began circling the pond and performing defensive behaviors, which included calling loudly and diving down toward observers ("dive-bombing"). One adult was observed flying in circles with a small fish in its beak,

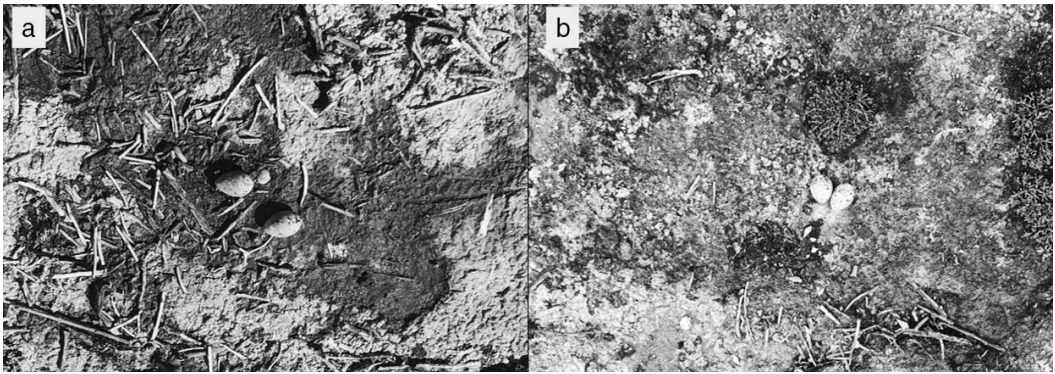


Figure 2. Least Tern nests found at Ki'i Unit of the James Campbell National Wildlife Refuge on the island of O'ahu in Kahuku, Hawai'i on (a) 8 July 2019 and (b) 3 August 2019. Photos by K. Harmon.

giving short, intermittent calls, which is typical of courtship behavior in Least Terns (Wolk 1974). Once we reached the island, we found 2 small, speckled, brown eggs in a small depression in the ground where the adult terns had previously been resting (Fig. 2a). These eggs resembled eggs of Hawaiian Stilts (*Himantopus mexicanus knudseni*), which commonly nest in this area, but were much smaller in size. There was no living vegetation surrounding the eggs, only dead pickleweed (*Batis maritima*). When observers returned on 15 July 2019 the nest was empty and no chicks were observed nearby.

We found the second Least Tern nest on 3 August 2019 in the same pond of the Ki'i unit, but on a different small island than the first nest. One adult tern was first observed sitting in the middle of the island. As we moved closer to the island, the adult flushed from the island and 2 eggs were observed in a small depression in the ground (Fig. 2b). The eggs were located next to a small piece of vegetation but were not concealed. These eggs appeared rounder and lighter in color than the first 2 eggs found in July, which is more consistent with other Least Tern eggs (Thompson et al. 2020). In an effort to minimize disturbance, we did not place cameras at the nest, nor did we monitor it daily. Although the specific fate of this nest is unknown, we believe at least 1 chick was fledged at James Campbell NWR that year, because EAV observed a juvenile giving begging calls and following an adult in this location on 26 September 2019.

While Least Tern adults have been observed previously in James Campbell NWR (Pyle and

Pyle 2017), no observations of Least Tern nests or eggs have been recorded. Indeed, our accounts are the first observations of Least Tern eggs on the island of O'ahu. As Least Terns typically leave the Hawaiian Islands during the nonbreeding season (Pyle and Pyle 2017), we believe the observed individuals in this paper migrated to their wintering ranges after breeding. We suspect that 2 or possibly 3 other nesting attempts have been made at 2 wetlands in the Pearl Harbor area of O'ahu. On 21 August 2002, EAV observed a family group of 4 Least Terns, 2 of which were juveniles, in the Pouhala Marsh State Wildlife Sanctuary adjacent to West Loch of Pearl Harbor. On 29 June 2017, EAV observed a Least Tern in the Honouliuli Unit of the Pearl Harbor NWR that called frequently and carried a fish for 25 min before eating it. On 6 October 2017, EAV observed an adult and juvenile at the refuge. One or 2 terns were frequently observed at a nearby private golf course and may have nested there in 2017. In 2018, an adult Least Tern was observed at Honouliuli on 5 June carrying a fish and trying to present the fish to a stilt chick. It appeared to be looking to court but no other tern was in the area. The bird was observed there many more times throughout the summer by refuge staff. We also observed adult Least Terns displaying courtship behavior in July and August of 2019 at Honouliuli; however, we did not discover any Least Tern nests in this wetland. Our observations contribute to the breeding ecology of the Least Tern and suggest a need to increase surveys for Least Tern nests in the Hawaiian Islands and across the Pacific.

Acknowledgments

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