STATUS OF THE LEAST STORM PETREL *HYDROBATES MICROSOMA* IN PERU

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ABSTRACT

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The occurrence of the Least Storm Petrel *Hydrobates microsoma* in Peru has been considered somewhat hypothetical by some authors, as its presence was previously supported only by sight records dating back to 1982. In this note, I confirm the presence of the species in Peru based on the re-examination of three specimens deposited in the Natural History Museum of Los Angeles. I also provide a summary of the historical records of its occurrences in Peru. Least Storm Petrel should be considered an uncommon boreal migrant in Peruvian marine waters.

Key words: Least Storm Petrel, *Hydrobates microsoma*, Peru, southern distribution, confirmation record

The Least Storm Petrel *Hydrobates microsoma* is the smallest member of the Hydrobatidae family. It measures 13 to 15 cm in length, has a wingspan of 32 to 36 cm, and weighs 14 to 22 g (Brooke, 2004; Carboneras, 1992; Harrison, 1983; Sibley, 2014). All plumages are similar regardless of age and sex, characterized by a blackish-brown body and flight feathers, with a pale wing bar on the greater coverts (although this bar can vanish by late autumn). The species' wings are long and narrow, and its tail is wedge-shaped (Harrison, 1983; Howell, 2012).

The Least Storm Petrel's breeding grounds are almost entirely restricted to two localities: San Benito Island off western Baja California and the northern islands in the Gulf of California. Little is known about its breeding biology. Limited observations, however, indicate that the species nests within rock crevices where it lays a single egg from late May to July, with fledging occurring between August and October (Bedolla-Guzmán et al., 2017; Carboneras, 1992; Harrison, 1983). During the non-breeding season, from September to May, the species migrates south, close to the coast and in pelagic waters off central America, eventually reaching Colombia, Ecuador, and northern Peru (even reported as far as 10°S) (Bedolla-Guzmán et al., 2017; Carboneras, 1992; Harrison, 1983; Howell, 2012; Howell & Zufelt 2019; Pitman, 1986; Spear & Ainley, 2007, 2008).

On 08 March 1982 at 15h00, R. L. Pitman collected the first three known specimens of Least Storm Petrel for Peru from a zodiac 61.1 km offshore from Punta Yacila, in the district and province of Paita, Department of Piura (05°08′0″S, 81°43′0″W), northern Peru. The specimens were deposited in the Natural History Museum of Los Angeles (Fig. 1). In the same year, Parker et al. (1982) reported the species as a possible migrant into Peru coastal waters, presumably based on a sighting, although no supporting information was provided and no specimens were collected. These specimens, and several field observations, formed the basis for the distribution map in Pitman (1986), which showed the species occurring at varying densities as far south as central Peru. Unfortunately, both the reference and the specimens have been overlooked by subsequent authors.

Following the initial reports of specimens and sightings in the 1980s, Spear & Ainley (2007, 2008), based on multiple sightings during extensive at-sea surveys conducted between 1980 and 1995 (see also Pitman, 1986), considered the Least Storm Petrel to be regular but uncommon in Peruvian waters, occurring as far south as approximately 5°S. Since then, additional records have been reported online. The first of these occurred on 18 March 2009, when two Least Storm Petrels were sighted by B. Allen in the Department of Tumbes, 46.3 km from the coast (3°51′11.9″S, 81°14′38.0″W). On 21 March 2018, F. Schmitt recorded 11 individuals in the Department of Tumbes, 153.7 km from land (3°36′02.9″S, 81°55′08.7″W). On 23 February 2019, an unknown number of birds were reported by M. Pennington, 57.4 km offshore in the Department of Piura

Fig 1. Specimens of Least Storm Petrel *Hydrobates microsoma* collected in Piura, Peru, by R. L. Pitman on 08 March 1982, and deposited in the Natural History Museum of Los Angeles.

(4°58′04.9″S, 81°35′57.0″W). More recently, on 25 and 26 March 2023, F. Schmitt, while leading a Wings birding tour, recorded 11 individuals at multiple locations: between 45.2 and 55.9 km offshore in Piura (6°28′11.1″S, 81°13′23.3″W; 6°34’30.5″S, 81°10′34.8″W; and 6°39′59.7″S, 81°08′02.8″W) and between 114 and 126 km offshore in Lambayeque (7°15′20.7″S, 80°50′49.5″W; and 7°30′41.1″S, 80°40′02.1″W) (eBird, 2025) (Fig. 2).

Now considered an uncommon boreal winter migrant in waters from Central America to the northern coast of Peru—occurring between November and March (Clements & Shany, 2001; Howell & Zufelt, 2019; Schulenberg et al., 2007; Schulenberg et al., 2010; Spear & Ainley, 2007, 2008)—the Least Storm Petrel is nevertheless still regarded as hypothetical in Peruvian waters by some authors, due to the absence of formal records such as photographs or specimens (Plenge, 2022). That position is no longer tenable, even setting aside the extensive observational record. In May 2019, I examined the three specimens in the Natural History Museum of Los Angeles collected by R. L. Pitman. Each specimen was preserved using different techniques: one was deposited as a study skin (LACM10043), one as a flat skin (LACM 101445), and one as an osteological specimen (LACM 101846). Sex and weight data were collected from the museum catalogue for all three specimens. Morphometric measurements, including total length, wing length, tarsus length, inner tail length, bill length from the base, and bill length from the internal edge of nares, were obtained from the study skin (LACM10043), while wingspan was taken only from the flat skin specimen (LACM 101445) (Table 1). All measurements fell within the expected range for Least Storm Petrel, consistent with published measurements (Fig. 3). If, as reported by Howell (2012), Least Storm Petrels from Baja California are larger than those from the Gulf of California (wing length 115–126 mm versus 113–121 mm, respectively), the Peruvian specimens most closely resemble the population from Baja California. However, due to the small number of specimens available, it is not possible to confirm their origin with certainty. The combination of morphometric data and physical appearance—blackish-brown body and flight feathers with a pale wing bar—confirms the identification of these specimens as Least Storm Petrel.

The dates of each record (February through March) coincide with the timing of the Least Storm Petrel’s boreal migration into Peruvian waters (Schulenberg et al., 2010; Spear & Ainley, 2007, 2008). Although confirmed records to date are limited to waters off northern Peru, it is possible that some individuals may reach latitudes further south, particularly during periods of elevated sea surface temperatures associated with ENSO events. Increased ocean temperatures in the Humboldt Current may cause other species to

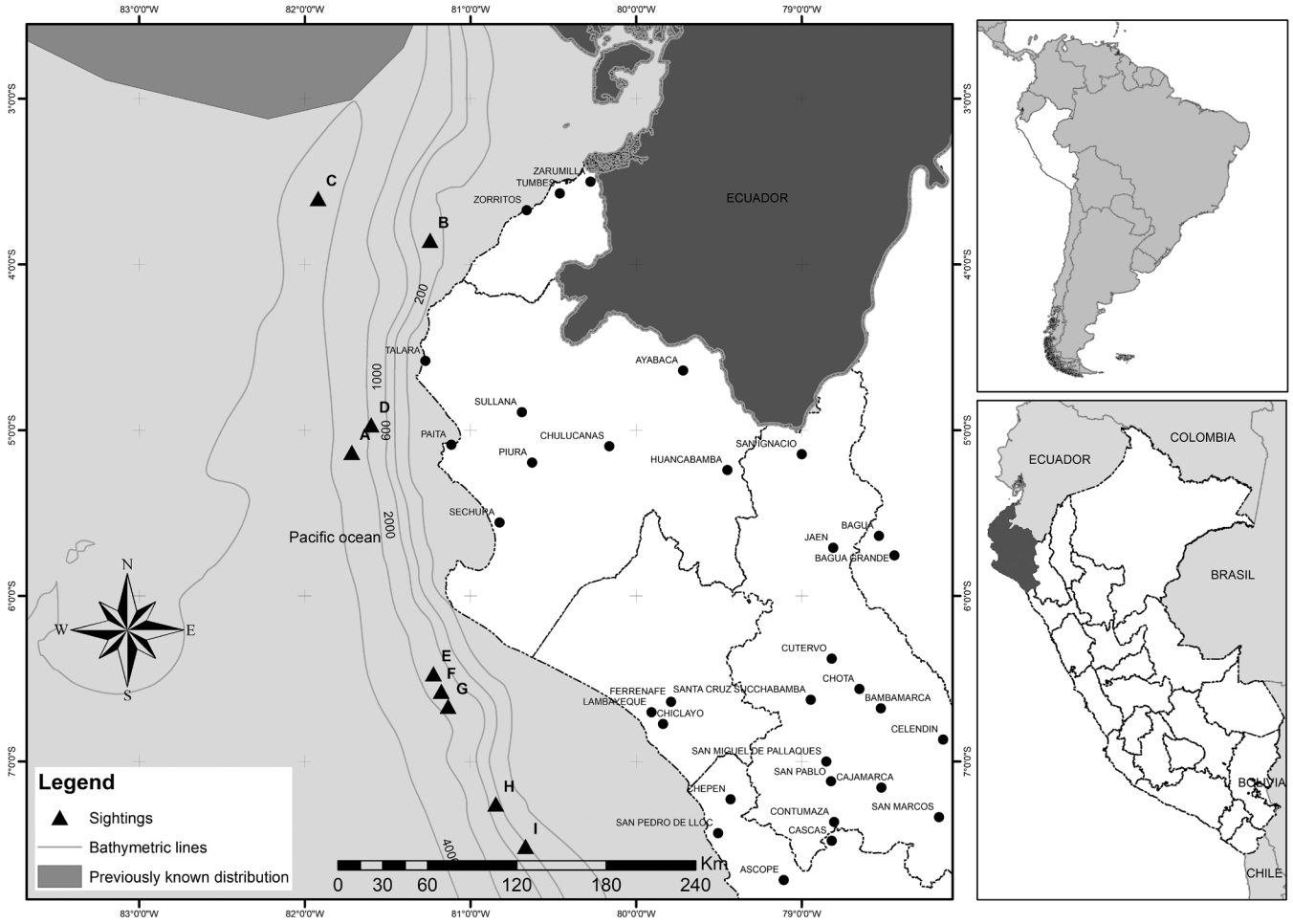

Fig 2. Locations of Least Storm Petrel *Hydrobates microsoma* sightings and specimens in Peru. (A) Three specimens collected by R. L. Pitman in 1982; (B) sighting of two individuals by B. Allen in 2009; (C) sighting of 11 individuals by F. Schmitt in 2018; (D) sighting of unknown number of individuals by M. Pennington in 2019; and (E–I) sighting of 11 individuals by WINGS group in 2023.

TABLE 1
Comparison of morphological data from Least Storm Petrel *Hydrobates microsoma* specimens collected from Piura, Peru (deposited in the Natural History Museum of Los Angeles), with measurements reported in other published sources

	This study			Sausner et al., 2016		Bedolla et al., 2017					
Measurement	**100043**	**101445**	**101846**	***n***	**Mean ± SD**	***n***	**Mean**	**Min–Max**	***n***	**Mean**	**Min–Max**
Sex	Female	Female	Undetermined		Undetermined		Females			Males	
Body mass (g)	17	17	18	17	21.9 ± 0.7	57	19.4	16.6–23.5	56	19.5	20.2–22.7
Total length (mm)	140	–	–		–	–	–	–	–	–	–
Wingspan (cm)	30	–	–	17	34.6 ± 0.8	–	–	–	–	–	–
Wing length (mm)	125	–	–		–	57	123.4	118–129	56	122.0	117–128
Tarsus length (mm)	19.3	–	–	17	20.6 ± 0.9	57	21.6	19.6–23.0	56	21.6	20.2–22.7
Inner tail length (mm)	59	–	–		–	57	55.1	46.0–61.0	56	53.5	47.0–59.0
Bill length (base) (mm)	10.7	–	–	17	11.1 ± 0.6	56	11.0	11.9–10.1	56	11.2	10.3–12.2
Bill length (nares) (mm)	6.7	–	–		–	–	–	–	–	–	–
Preparation	skin	flat skin	skeleton		alive		alive	alive		alive	alive

seek colder waters, potentially as far south as southern Chile or as far north as Panama. Such changes in ocean temperature may even help explain the disjunct distributions observed in other seabird species in this region (Duffy, 1990; Hughes, 1985, 1992; Marín & González, 2021; Murphy, 1936). Another possible explanation for the presence of rare seabirds in the Humboldt Current, far from their breeding colonies, is the distribution and abundance of food resources (Thiel et al., 2007). Due to the exceptional productivity of these waters, they serve as important foraging grounds for many seabird species during their respective wintering periods (Murphy, 1936; Spear & Ainley, 2008).

It appears that Least Storm Petrels occur regularly, albeit in low numbers, in waters off the northern coast of Peru. However, they are likely overlooked by birdwatchers and ornithologists, or even misidentified as other dark-plumaged storm petrels—such as Black Storm Petrel *H. melania* or Markham's Storm Petrel *H. markhami*—which are larger and longer-winged (Carboneras, 1992; Howell & Zufelt, 2019). Regular monitoring of seabirds in Peru's coastal waters is necessary to understand drivers of species assemblages and the hemispheric movements exhibited by these little-known birds (Mortimer et al., 2012; Schulenberg et al., 2010; Spear & Ainley, 2007, 2008). It is also important to emphasize the value of scientific collections as a resource for improving our understanding—not only of Least Storm Petrels, but also of local avian diversity and distribution patterns. Ongoing, responsible scientific collecting from biodiversity hotspots will ultimately enhance our knowledge of Peru's numerous bird species, and the environmental drivers that help shape its avian communities (Rocha et al., 2014; Winker, 2015).

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