RECORDS OF THE STREAKED SHEARWATER *CALONECTRIS LEUCOMELAS* AS A VAGRANT ALONG THE SOUTH COAST OF WESTERN AUSTRALIA

JENNIFER L. LAVERS[1,2], & LORI-ANN SHIBISH[3,4]

[1]*Gulbali Institute, Charles Sturt University, Wagga Wagga, New South Wales, Australia*
[2]*Adrift Lab, Underwood, Lutruwita/Tasmania, Australia (jlavers@csu.edu.au)*
[3]*Western Australian Seabird Rescue, Bayswater, Western Australia, Australia*
[4]*Esperance Wildlife Hospital and Sanctuary, Esperance, Western Australia, Australia*

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ABSTRACT

Lavers, J. L., & Shibish, L.-A. (2026). Records of the Streaked Shearwater *Calonectris leucomelas* as a vagrant along the south coast of Western Australia. *Marine Ornithology*, *54*(2), 431–435. http://doi.org/10.5038/2074-1235.54.2.1719

The Streaked Shearwater *Calonectris leucomelas* is an oceanic seabird that breeds in coastal Japan, Korea, China, and eastern Russia and typically migrates to waters off northern Australia. This paper documents the discovery of four Streaked Shearwaters on the southwest coast of Western Australia. First, a live bird was photographed off Albany, Western Australia, in 2012, with three additional birds photographed at sea or found beach-washed farther east along Australia's southern coastline in 2019 and 2024. These locations lie ~630 km southwest of the species' currently recognized non-breeding range, which is concentrated in the tropical waters around northern Australia and New Guinea. The novel records represent a substantial range expansion and highlight the potential influence of changing oceanic conditions, such as the warming of the Leeuwin Current, on the occurrence of vagrant seabirds in the temperate waters of the Southern Ocean.

Key words: *Calonectris leucomelas*, citizen science, overwintering grounds, seabird, species on the move, vagrant

INTRODUCTION

Oceanic seabirds have evolved physiological and morphological characteristics that enable them to fly in an energy-efficient manner (Ainley et al., 2015; Pennycuick, 1987), following recently identified migration routes ("flyways") that reflect strong and predictable winds that blow over the open ocean (Morten et al., 2025; Yoda et al., 2021). However, as the oceans and atmosphere continue to warm due to climate change, wind patterns are predicted to shift (Kling & Ackerly, 2020). For example, trade winds associated with the Walker Circulation are expected to weaken in the Pacific (Wu et al., 2021), making conditions harder and less predictable for seabirds navigating this region (Skyllas et al., 2023).

The Streaked Shearwater *Calonectris leucomelas* undertakes extensive migrations from its breeding islands in Japan, China, and Korea to non-breeding grounds that generally span the tropical seas of Southeast Asia and northern Australia (BirdLife Australia, 2023). The species primarily follows the East Asian Flyway, one of six recently recognised marine flyways (Morten et al., 2025). The species is a regular visitor to waters off northern Western Australia, especially during March–May, and is reasonably well documented in the Tasman Sea as far south as Wollongong (34°S; Fig. 1; BirdLife Australia, 2023; Harrison et al., 2021). However, along the west coast of Australia, records south of the Abrolhos Islands (28°S; Fig. 1) are scarce and considered highly unusual, often attributed to cyclonic activity, anomalous currents, or other extreme weather events (Johnstone & Storr, 1998).

Here, we document four Streaked Shearwaters detected approximately 630 km south of the most southerly record for Western Australia (Fig. 1), in the temperate waters of the Leeuwin Current during 2012, 2019, and 2024.

OBSERVATIONS

On 12 April 2012, the author (JLL) photographed an adult Streaked Shearwater amongst a flock of ~400 Sable Shearwaters *Ardenna carneipes* (common name following Bond & Lavers, 2024) in King George Sound off Kinjarling/Albany, Western Australia (approx. 35.06°S, 118.05°E; Figs. 1, 2A). The birds were sitting on the water surface adjacent to a purse-seine vessel targeting pilchards *Sardinops sagax* near Breaksea Island (Lavers, 2012).

On 19 January 2019, an adult Streaked Shearwater was recorded during a pelagic birding trip (Figs. 1, 2C) within an area referred to as Bremer Canyon (34.76°S, 119.61°E). The bird was associated with 140 Sable Shearwaters and numerous other seabird species (Barratt et al., 2019).

On 30 April 2019, an adult Streaked Shearwater was recorded at Cave Point Lighthouse, Torndirrup National Park (35.12°S, 117.90°E), located ~5 km south of Albany (Fig. 1). During this land-based survey, the Streaked Shearwater was observed in association with ~3,000 Sable Shearwaters that were transiting through the area (Ford & Graff, 2019).

On 01 April 2024, an emaciated adult Streaked Shearwater (body mass: 333 g; average body mass of adults weighed in Japan: 440–538 g; BirdLife Australia, 2023) was found beach-washed, but still alive, on Wylie Bay Beach, Kepa Kurl/Esperance, Western Australia (33.97°S, 122.12°E; Figs. 1, 2B; Lavers, 2024). The bird was taken into care at the Esperance Wildlife



Fig. 1. Key Australian locations mentioned in the text: previous records of Streaked Shearwater *Calonectris leucomelas* in Western Australia (green), the four new records along the southwest coast (orange), the Leeuwin Current (blue), and the most southerly record for the east coast of Australia (pink).

Hospital and Sanctuary (Fig. 2B) and received treatment, but died the following day.

In each instance, species identification was confirmed by plumage characteristics and/or photographic evidence (Fig. 2), and all records were submitted to the citizen science database eBird. For the shearwater recovered in Esperance, its primary and tail feathers were heavily worn, suggesting it was an adult (Fig. 3).

DISCUSSION

The four records of Streaked Shearwaters along the south coast of Western Australia during 2012–2024 are important, as they extend the southern limit of the species range by ~630 km.

In general, Streaked Shearwaters show little variation in their migration routes, with all but one bird migrating to the same broad wintering area. The timing, route, and centre of the wintering distribution have remained the same, irrespective of the previous breeding outcome (Yamamoto et al., 2014). This suggests a different mechanism is likely influencing where Streaked Shearwaters are recorded in Australia. Once Streaked Shearwaters have completed their southward migration to their non-breeding grounds, the species is typically found in the warm waters off northern New Guinea (Kamata et al., 2025) and in the southern Timor Sea (BirdLife Australia, 2023). However, vagrant birds can be displaced from their core areas by environmental events, including severe weather (e.g., tropical cyclones) or unusually strong warm-water currents (Monticelli, 2025). In Western Australia, the intensification of the poleward-flowing Leeuwin Current facilitates the southward "drift" of tropical marine fauna, often carrying them into temperate zones far beyond their typical latitudinal limits (Hutchins & Pearce, 1994; Pearce & Pattiaratchi, 1999). Thus, we suggest anomalously warm or persistent phases of the Leeuwin Current, such as observed in 2021 (Feng et al., 2025), are a likely mechanism for transporting this oceanic species to the cooler, temperate waters off southwestern Australia.

A notable example of this occurred in April 2012, following a particularly strong La Niña event. An unprecedented influx of > 40 Streaked Shearwaters was recorded at Rottnest Island (near Perth,

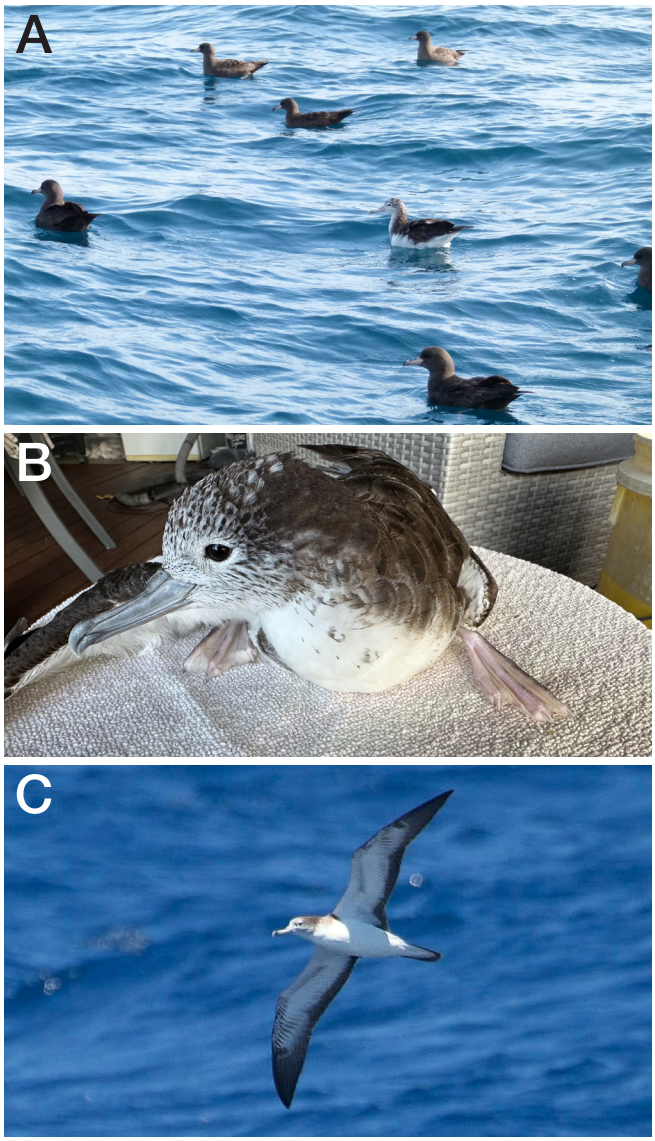


Fig. 2. Photographs of Streaked Shearwaters *Calonectris leucomelas* observed in Western Australia. (A) A Streaked Shearwater amongst a flock of ~400 Sable Shearwaters *Ardenna carneipes* in King George Sound, Western Australia, on 12 April 2012. (B) A Streaked Shearwater found beach-washed on Wylie Bay Beach in Esperance, Western Australia, on 01 April 2024. (C) A single Streaked Shearwater recorded at Bremer Canyon, Western Australia, on 19 January 2019. Photo credits: Jennifer Lavers (A), Lori-Ann Shibish (B), and Daniel Mantle (C)

Western Australia; Menkhorst, 2012). This event, which overlaps the timing of our observation of a shearwater off Albany, coincided with the passage of Tropical Cyclone Lua, suggesting that the combination of a powerful, warm-water current and cyclonic weather acts as a synergistic driver for vagrancy in this species (Monticelli, 2025). Similar displacements have been observed during other cyclonic events, such as Cyclone Gertie in 1995, which resulted in multiple sightings and beach-cast specimens of Streaked Shearwaters near Broome, Western Australia (Fig. 1; Johnstone & Storr, 1998).

Marine heatwaves can also cause the Leeuwin Current to strengthen "out of season," maintaining tropical water temperatures into the



Fig. 3. Photographs showing the plumage condition of the Streaked Shearwater *Calonectris leucomelas* found beach-washed on Wylie Bay Beach in Esperance, Western Australia, on 01 April 2024. Scale bar (1 cm) displayed in photos. Photo credit: Jennifer Lavers

Austral autumn and winter (Benthuysen et al., 2014)—the same period when Streaked Shearwaters are concluding their southward migration. As these extreme thermal events become more frequent and intense due to climate change (Frölicher et al., 2018), the occurrence of the Streaked Shearwater as a predominantly tropical species in waters off southwestern Australia may shift from rare vagrant to a more regular, climate-driven phenomenon (Wernberg et al., 2013).

Changes in species' distributions are an accelerating impact of climate change, often referred to as "species on the move," but the consequences for many species have yet to be revealed (Gervais et al., 2021). While a handful of records does not indicate a permanent range shift for Streaked Shearwaters, these records contribute to the overall dataset used to track distributional changes in seabirds over time. Unfortunately for Streaked Shearwaters, the southern limits of Australia do not appear to offer favourable conditions, with most extralimital records of this species being of beach-cast birds (BirdLife Australia, 2023). This suggests the temperate waters of this region do not provide adequate or appropriate prey and are, therefore, outside the shearwaters' viable range (average sea surface temperature in key foraging areas for this species is 26 °C; Kamata et al., 2025). Such occurrences are expected to become more frequent with changing ocean climate, requiring ongoing monitoring to differentiate temporary vagrancy from climate-change-driven range expansion (Davis & Watson, 2018).

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AUTHOR CONTRIBUTIONS

Conceptualization: JLL. Investigation: JLL, LAS. Writing—original draft: JLL, LAS.

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