

Nest prospecting Little Shearwater on Broughton Island

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Remote cameras are a useful tool in understanding aspects of biodiversity overlooked by conventional fauna survey techniques. One or more Little Shearwaters *Puffinus assimilis* were photographed on multiple occasions by trail cameras between May and August 2025 in the vicinity of artificial nest boxes for the Gould's Petrel *Pterodroma leucoptera* adjacent to the summit of Pinkatop Head, Broughton Island off the mid-north coast of New South Wales. It represents the first occasion the species has been documented nest-prospecting on inshore islands off the east coast of Australia.

INTRODUCTION

Nest-prospecting is characterised as visits of individuals to potential new locations where future breeding may occur (Reed *et al.* 1999). During such visits, juveniles or failed adult breeding individuals involved, glean social and environmental information to assess the quality of the potential breeding sites (Kralj *et al.* 2023). Such prospecting behaviour is critical to seabirds establishing new nesting locations on islands previously unoccupied by that species. Dispersal to new nesting locations may be associated with population increases as a result of active management eliminating key threatening processes on main breeding islands, such as the removal of predators.

The Little Shearwater *Puffinus assimilis* is not known to nest on any inshore islands off the east coast of Australia (e.g. Garnett *et al.* 2011; NSW Environment, Energy and Science 2024). The nearest breeding occurs in the Lord Howe Island group, some 600 km off the mid-north coast of New South Wales (Marchant & Higgins 1990). Individuals are infrequently sighted in the Tasman Sea throughout the year with most records between November and June and only 11% of sightings over the continental shelf (Reid *et al.* 2002). The species was considered eliminated from the main Lord Howe and Norfolk Islands by the Black Rat *Rattus rattus* and Feral Cat *Felis catus* (Hindwood 1940; Garnett *et al.* 2011). However, currently Little Shearwater breeding success has not increased significantly following rodent removal on the main Lord Howe Island although targeted surveys indicated an expansion of breeding distribution (Priddel *et al.* 2003; Lord Howe Island Board 2025).

Broughton Island (32°37'S, 152°19'E) is located 16 km north-east of Port Stephens and some 3 km off the mid-north coast of New South Wales. It supports a variety of nesting seabirds including the Wedge-tailed Shearwater *Ardenna pacifica*, Short-tailed Shearwater *A. tenuirostris*, Little Penguin *Eudyptula minor*, Crested Tern *Thalasseus bergii* and the Silver Gull *Chroicocephalus novaehollandiae* (Carlile *et al.* 2012). Additionally, a pair of Gould's Petrel *Pterodroma leucoptera* was found nesting on the island in 2009, leading to the subsequent installation of six artificial nest boxes and a call-playback system west of Pinkatop Head in mid-2017 (S. Callaghan, unpublished records). These nest boxes have resulted in a number of successful breeding events and led to the discovery of a Pycroft's Petrel *Pterodroma pycrofti* occupying one of the boxes in spring 2019 (Stuart *et al.* 2023; Stuart & Clarke 2023). Two species appear no longer to nest on the island: the Sooty Shearwater *Ardenna grisea*; and the White-faced Storm-petrel *Pelagodroma marina* (Hindwood & D'Ombrain 1960; Lane 1976; Carlile *et al.* 2012).

Remote Reconyx infra-red cameras were set around the periphery of Broughton Island as a result of a Black Rat incursion in August 2024, some 15 years after a successful rat eradication program was undertaken on the island in 2009 (Priddell *et al.* 2011). This camera deployment included setting one or two cameras adjacent to the entrances of the Gould's Petrel nest boxes and an additional camera some 30 m to the east. As a result of this camera deployment the Little Shearwater *Puffinus assimilis* was incidentally photographed on several occasions between May and August 2025 and this note summarises these occurrences.

OBSERVATIONS

A Little Shearwater was first photographed at 0415 hours on 13 May 2025 (**Figure 1**). The identity of this shearwater was confirmed by seabird authorities, Rohan Clarke and Mick Roderick. However, based on these photographs alone the specific subspecies could not be identified.

Single individuals were then subsequently photographed on four nights in June, 13 nights in July and seven nights in August (**Appendix 1**; **Figure 2**). It was last recorded at 0438 hours on 16 August. No further individuals were photographed in September. The majority of triggers (79%) were in the hours before dawn; with a smaller number of triggers (17%) following dusk and one in the middle of the night. On the majority of nights only a single trigger by the species was recorded (86% of nights). Interestingly, no nights had more than two triggers which suggested only limited time was spent exposed on the surface. On nights with two triggers, it could not be confirmed whether such activity represented one or two individuals.



Figure 1. The first photographs of the Little Shearwater taken by a remote camera near Pinkatop Head on 13 May 2025.



Figure 2. Later photographs of the Little Shearwater taken by a remote camera near Pinkatop Head on 2 June and 14 August 2025.

Daytime searches of the nest boxes and general surrounding area for burrow activity on 12 June, 26 August and 27 August 2025 failed to locate any individuals. Feathers potentially of this species were collected from one nest box in the first August visit. The absence of triggers after 16 August and through to mid-September suggested that nesting did not occur but was instead a result of sustained nest prospecting.

No Little Shearwaters were photographed by any of the other 49 remote cameras distributed elsewhere around the island.

The presence of the Little Shearwater on Broughton Island is significant in that it is the first time the species has been recorded on any near-shore islands off eastern Australia. This species is listed as Vulnerable under the NSW *Biodiversity Conservation Act 2016*. Therefore, it will be important to monitor potential nesting activity around the nest boxes between May and September in future years for confirmation of actual breeding.

The presence of this species on Broughton Island raises the question as to whether this species may be

nesting on other islands in the Broughton Group or Cabbage Tree and Boondelbah Islands some 12 and 13 km to the south west respectively. Eight remote cameras and two song meters were set on Boondelbah in July 2025 to initially address this question but these have yet to be analysed. As sea temperatures change and as populations of various seabird populations increase (possibly to capacity) due to the elimination of predators such as rat species on some islands it would be expected that variations in the nesting range of such species will occur. Therefore, it is important that bird observers and seabird biologists visiting islands be aware that such changes may be happening and be alert to the potential arrival of any new nesting species.

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APPENDIX: Little Shearwater records

Date	Time	Date	Time
May records		23/7/25	0340 h
13/5/25	0415 h	23/7/25	0504 h
		24/7/25	0506 h
June records		25/7/25	2005 h
2/6/25	0426 h	26/7/25	0454 h
7/6/25	0043 h	27/7/25	0458 h
16/6/25	0435 h	31/7/28	1955 h
21/6/25	0501 h	31/7/25	0501 h
July records		August records	
5/7/25	1949 h	4/8/25	2116 h
7/7/25	0544 h	7/8/25	0508 h
15/7/25	0453 h	7/8/25	1829 h
18/7/25	0454 h	8/8/25	0458 h
19/7/25	0514 h	11/8/25	0406 h
19/7/25	0519 h	14/8/25	0434 h
20/7/25	0513 h	15/8/25	0431 h
21/7/25	0514 h	16/8/25	0438 h