

SEABIRD ISLANDS

No. 265

Leo's Island, Easter Group, Houtman Abrolhos, Western Australia

Location: 28°41'23"S, 113°51'37"E; 71 kilometres west of Geraldton, Western Australia. Located 7.6 kilometres ENE of Rat Island, the largest of the islands in the Easter Group of the Houtman Abrolhos.

Status: Houtman Abrolhos Islands Reserve No. A20253, vested under the Land Act 1933 (WA) with the Minister for Fisheries for conservation of flora and fauna, tourism and for purposes associated with the fishing industry.

Description: Leo's Island has an area of 23 hectares. It is 1200 metres long by 300 metres wide and two metres above MHWS. The island has a composite structure¹. It is comprised of aeolian limestone platform reef overlain by storm cast coral shingle, with areas of concreted coral framestone along the north-western shore. There is a large, shallow tidal pool in the centre of the island.

There are several sandy beaches along the north-western shore, broken by low cemented coral limestone cliffs. Along the south and eastern (seaward) shoreline the coast is comprised wholly of coral rubble and shingle storm-cast ridges.

The island is dominated by low, salt-tolerant shrubs and succulents². Sandy areas support *Atriplex* spp., *Myoporum insulare*, *Rhagodia* spp. and *Nitraria billardi* over most of the island. Low coastal dunes contain stands of *Spinifex longifolius*. There is a large area of *Halosarcia halocnemoides* and *Carpobrotus virescens* in damper sands.

Landing: Onto the north-west point of the island by dinghy, inshore from the protected anchorage.

Ornithological History: Most visits by ornithologists have been brief, and have involved circumnavigating the island over a two-hour period. The island's seabird colonies were mapped over three years from 2006 to 2008. We also visited the island briefly in August 2001, November 1987 and 2007, December 1999, January 2000 and April and July 2014. R. E. Johnstone visited in October 1981 and August 1983 and K. Coates visited on numerous occasions between 1989 and 2006. C. Feare and J. N. Dunlop visited in December 2008. The first extensive surveys were conducted by A. Burbidge and P. Fuller during their island-wide surveys during the summer of 1981, 1991, 1995, 1996 and 1999.

Breeding Seabirds and Status

Pandion cristatus Eastern Osprey – A single pair nests at Leo's Island. In December 2006 a near-fledged nestling was observed at the north end of the island.

Haliaeetus leucogaster White-bellied Sea-Eagle – A pair uses a nest on a small islet to the NE of the fishing camps. They use a navigation marker and the roofs of the fishing huts as feeding roosts.

Larus pacificus Pacific Gull – Six pairs. Nests were scattered across the island on high ground usually atop low vegetation

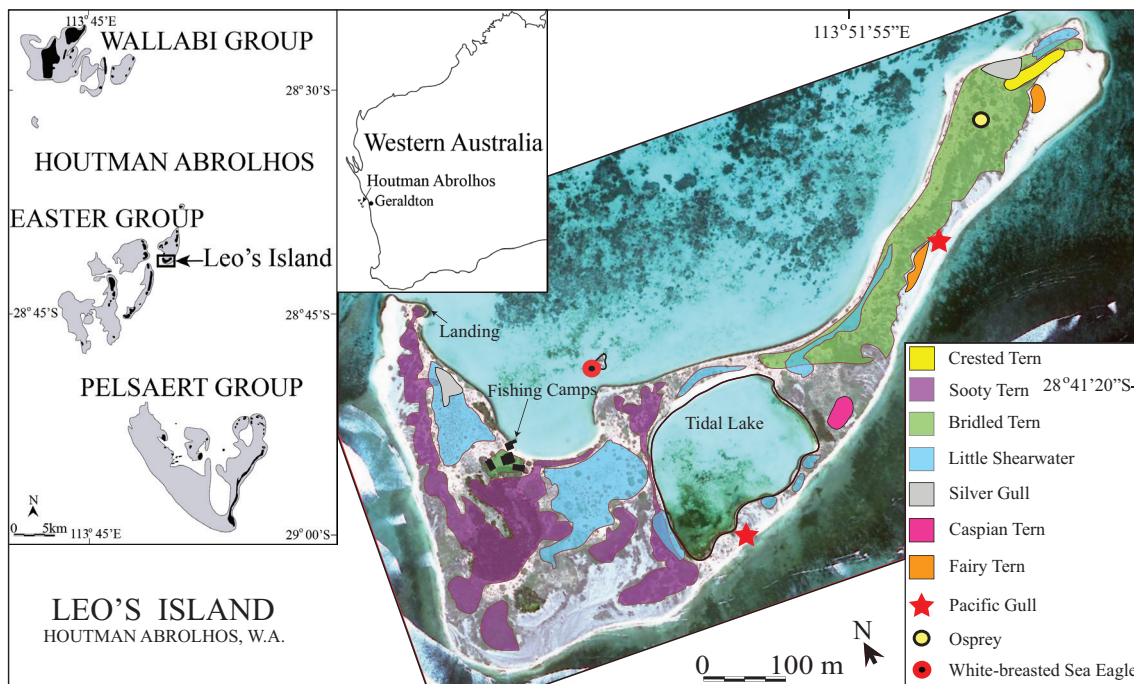


Figure 1. Leo's Island, Houtman Abrolhos, Western Australia.

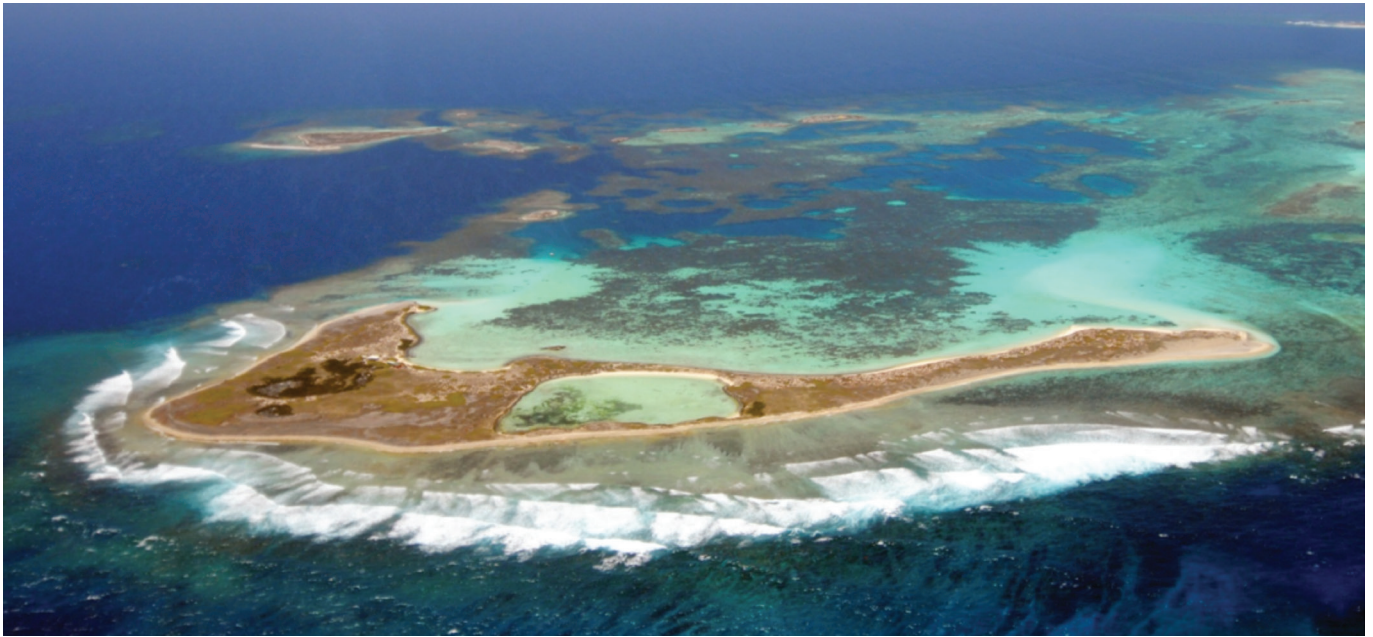


Figure 2. Aerial photograph of Leo's Island looking WNW.

surrounded by coral ridges. Nests were constructed of woven brown algae, principally *Ecklonia radiata*, *Sargassum distichum* and *Cystoseira trinodis*. Eggs were laid in August and young fledged by November. By the time of our December 2006 visit adult birds were caring for fledglings/juveniles.

Chroicocephalus novaehollandiae Silver Gull – Silver Gulls nested in loose colonies across the island, mainly amongst *Spinifex longifolius* in the low dune areas of the island to the north and west of the rock-lobster fishing camps. In December 2006 we located 34 active nests, of which 13 contained one or two egg clutches and one had a large pullus³. A total of 35 nests were found in 2008, of which 10 were active. Previously, two nests were located in 1999⁴, and Storr⁵ lists them as breeding on the island. It is likely that this species breeds both in summer and autumn on this island.

Puffinus assimilis Little Shearwater – We estimated 3247 burrows in 2006 and 4656 in 2008, although the breeding population would be somewhat lower than the total burrow count. Inspection of burrows in 11 random 5m x 5m quadrats showed that the density of burrows averaged 0.2/m², (range 0.04–0.50/m²). By the time of our visit in December burrows were deserted and occasional fresh bodies of dead adults or fledglings were noted. Nests occurred in sandy areas of the island, principally areas adjacent to and south of the large tidal pool.

Pelagodroma marina White-faced Storm-Petrel – A single adult was found dead near the fishing camp in December 2008. This species may nest amongst the more extensive Little Shearwater burrows across the island.

Onychoprion anaethetus Bridled Tern – In some years estimates of up to 500 pairs of this species were recorded⁶. In December 2006, we recorded only 64 pairs³. Bridled Terns nest throughout the island in areas away from the more densely packed Sooty Terns *Onychoprion fuscatus* at the southern half of the island. They nest at the base of *Nitraria billardiarei* bushes along

the shoreline, or in crevices created by slabs of coral shingle. This species has also adapted to nesting under camp floors or building materials associated with rock lobster fishing camps. In December 2006 birds had recently laid, although breeding effort throughout the Houtman Abrolhos was significantly lower than in other years due to the lateness of the season³.

Onychoprion fuscatus Sooty Tern – This species was previously the most numerous seabird on the island, where up to 22 320 pairs have bred³. Twenty pairs were recorded breeding in 1991, and between 500–1000 in 1995⁶. By 1996 it was estimated that about 20 000 pairs had bred but there were none breeding in late November 1999. More recent surveys estimate 20 096 pairs nesting on the island in 2006, 20 000–30 000 pairs in 2007 and 22 320 pairs in 2008^{3,8}. The colony was established across all bushy areas in the southern half of the island in densities (calculated from 5m² quadrats) of up to 1.6 birds/m². On 5 January 2005 there were thousands of Sooty Terns in attendance on Leo's Island, but there were no chicks or pulli present, and only the broken remnants of a few eggs suggesting the season had been a poor one for this species. No Sooty Terns nested on Leo's Island in 2012, 2013 or 2014 as the population seemed to have dispersed to Rat Island.

Sterna dougallii Roseate Tern – Roseate Terns were not breeding in 1993⁶, but bred as early as 25 November in 1999 (627 pairs⁴). We counted just one pair on the island on 12 December 2006³.

Sternula nereis Fairy Tern – Several small colonies (totalling 47 pairs) of this species were observed scattered across the northern parts of the island in December 2006³. In November 2007 there were 12 nests. Two pairs were recorded on eggs in December 2008. Fairy Terns nest amongst finer coral rubble between coral ridges or at edges of vegetated areas on the northern part of the island.

Thalasseus bergii Crested Tern – In late November 1991, 600 pairs⁶ were found on Leo's Island and seven pairs in 1999⁴. Colonies of more than 250 nests (1989), 500 nests (1991),

and 700 nests (1996) were also observed⁷. In December 2008 a colony of 422 Crested Terns on single eggs nested at the extreme northern end of the island on low sand dunes. Crested Terns commenced laying between October–December and were very synchronous. Autumn nesting in the Pelsaert Group has also been recorded⁹.

Hydroprogne caspia Caspian Tern – Up to 70 pairs have been recorded. This usually solitary nester has nested colonially since at least 1989, when 40–50 pairs were recorded with eggs and fully fledged young⁷. The species was still nesting colonially in 1991 (70 pairs⁶), 1993 (40 pairs⁴), 1996 (10 pairs⁷), 1999 (32 pairs) and 2006 when we found 14 nests, with large pulli and fledglings in a sandy vegetated area to the NE of the tidal pool³. In December 2008 there were approximately 30 nests with eggs and chicks³. Previously, the species had nested colonially on Wooded Island 8.5 kilometres to the SW (8 pairs – Alexander 1922¹⁰). It nests elsewhere on West Wallabi (22 pairs), Pelsaert (10 pairs) and singly on 19 other islands throughout the Houtman Abrolhos³.

Factors Affecting Status

European Rabbits *Oryctolagus cuniculus* were introduced to the island by fishermen but were absent by 1969. The island has several buildings and other infrastructure belonging to a single rock-lobster fisher. The remains of a previous camp are evident near the landing site. The rock-lobster fishing season is now open all year and fishermen may utilize their camp whilst fishing for lobsters. Previously the fishing season extended from March 15–June 30, outside of the main seabird breeding seasons.

Leo's Island is a popular destination for visitors due to its safe anchorage, Australian Sea-lions *Neophoca cinerea* and seabird breeding colonies. Visitors usually walk along worn tracks to the tidal lake, and when guided keep to the beach edge. However often some stray from the path and inadvertently enter the sandy rookeries of the Little Shearwater.

Australian Sea-lions have bred here and several haulouts are evident, particularly adjacent to the fishing camp and tidal lake. Some sandy areas occupied by Little Shearwaters have been damaged by basking sea-lions.

There is a navigation marker on the island that may present a collision hazard at night.

Other Seabirds Recorded

<i>Ardeanna carneipes</i>	Flesh-footed Shearwater – A single bird was observed at sea SE of Leo's Island in July 2014.
<i>Puffinus huttoni</i>	Hutton's Shearwater – Up to 50 birds occurred in rafts at sea amongst Wedge-tailed Shearwaters in Eastern Passage, 200 metres S of Leo's Island.
<i>Egretta sacra</i>	Eastern Reef Egret – No nests of this species have been found, although it occupies the island and suitable rocky overhangs are available for nest sites.
<i>Phalacrocorax varius</i>	Pied Cormorant – This species roost at times on the northern spit.
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher – No nests were located but a pair of this species was observed in 2006 and 2008 roosting on the island.

Haematopus longirostris Australian Pied Oystercatcher – No nests were located but a pair of this species was observed defending potential sites in 2006 and 2008.

Other Vertebrates Recorded

Silvereye	<i>Zosterops lateralis</i>
Ruddy Turnstone	<i>Arenaria interpres</i>
Grey-tailed Tattler	<i>Tringa brevipes</i>
Welcome Swallow	<i>Hirundo neoxena</i>
King Skink	<i>Egernia kingie</i>

Banding

None.

Bibliography

- Collins, L. B., Wyrwoll, K-H., and France, R. E. (1991). The Abrolhos carbonate platforms: geological evolution and Leeuwin Current activity. *Journal of the Royal Society of W.A.* **74**: 47–57.
- Harvey, J. M., Alford, J. J., Longman, V. M. and Keighery, G. J. (2001). A flora and vegetation survey of the islands of the Houtman Abrolhos, Western Australia. *CALMScience* **3**: 521–623.
- Surman, C. A. and Nicholson, L. W. (2009). A survey of the breeding seabirds and migratory shorebirds of the Houtman Abrolhos, Western Australia. *Corella* **33**: 81–98.
- Burbidge, A. A. and Fuller, P. J. (2004). Numbers of non-burrowing seabirds of the Houtman Abrolhos: 1991–1993 and 1999. *Corella* **28**: 96–103.
- Storr, G. M., Johnstone, R. E. and Griffin, P. (1986). Birds of the Houtman Abrolhos, Western Australia. *Rec. W.A. Mus.* **24**: 1–42.
- Fuller, P. J., Burbidge, A. A. and Owens, R. (1994). Breeding Seabirds of the Houtman Abrolhos, Western Australia. *Corella* **18**: 97–113.
- Coates, K. (2005). Houtman Abrolhos Island Bird Sightings 1987–2005. Unpublished manuscript. 12Pp.
- Chris Feare, pers.comm.
- Surman, C. A. (1998). Seabird breeding schedules at the Pelsaert Group of islands, Houtman Abrolhos, Western Australia between 1993 and 1998. *Rec. W.A. Museum* **19**: 209–216.
- Alexander, W. B. (1922). The vertebrate fauna of Houtman's Abrolhos. *Journal of the Linnean Society, London* **34**: 457–486.

Acknowledgements

We thank Shae Surman, Ray Surman, Anthony Desmond, Gavin Lacey, J. N. Dunlop and Greg Finlay for assistance with seabird surveys. The Department of Fisheries, Chimere Pearls and Latitude Pearls kindly provided transport and accommodation during some of our stays in at the islands. The Department of Parks and Wildlife (formerly Department of Environment and Conservation) supported the original surveys conducted in 2006–2008.

Date compiled: December 2014

C. A. Surman and L. W. Nicholson, *Halfmoon Biosciences*, 45 Heather Rd, Ocean Beach, Western Australia 6333.