

SEABIRD ISLANDS

No. 264

Gun Island, Pelsaert Group, Houtman Abrolhos, Western Australia

Location: 28°53'12"S, 113°51'35"E; 71 kilometres west of Geraldton, Western Australia. Located 12 kilometres north-west of Pelsaert Island. It is the second largest of the islands in the Pelsaert Group, 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: The island is 6.1 hectares in area; being 800 metres long by 380 metres wide and five metres above MHWS. It has a High Rock island structure¹. The island is characterised by well-lithified, dense, concretised reef limestones, which are fissured with potholes, and surrounded by undercut intertidal notches. The island once contained extensive deposits of guano, and several ships exploited these deposits between 1844–1850². Large areas of piled rock, tram lines and a rock groyne remain from more organized mining activities undertaken between 1880–1904 by the Broadhurst and McNeil Phosphate Company. British Petroleum drilled unsuccessfully for oil in 1968².

The island is largely free of vegetation over the extensive areas that have been mined for guano. Along the western and northern shoreline, are well-vegetated areas of dunal sands dominated by *Diplolaena grandiflora* and *Nitraria billardiieri* scrub with *Atriplex cinerea* dwarf scrub and a succulent mat of *Carpobrotus virescens*³. Of the 26 plant species recorded, 13 (50%) are exotic³. This is consistent with other islands previously mined for guano, which have a far higher level of introduced exotic plants.

Landing: Possible onto the south-eastern end of the island near to the original rock groyne on a sandy beach. Access is by small vessel only.

Ornithological History: Few visits by other ornithologists have been made. CAS visited briefly in late February 1992, October 2002, January 2003, March 2003, October 2008, May 2008, April 2013, November 2007, December 2013, June, October and November 2014. In addition, we extensively mapped the entire seabird colonies over three years from 2006–2008. Estimates of breeding seabirds were made by A. Burbidge and P. Fuller during their island-wide surveys in the summers of 1993 and 1999.

Breeding Seabirds and Status

Pandion cristatus Eastern Osprey – Two nests, one active most years.

Larus pacificus Pacific Gull – Two pairs recorded with nests located atop rocky limestone cliffs. Nest sites were reused, or new nests were built close (<3m) to the old sites. Eggs were laid in August and young fledged by November. By the time of our survey on 6 December 2006 young had fledged; on 12 November 2007, one nest contained large juveniles.

Chroicocephalus novaehollandiae Silver Gull – Up to 15 nests, although breeding effort was likely to have been underestimated. Nests were amongst the base of remnant guano mining limestone rock walls, often near a Caspian Tern colony. During October 2002, 11 nests were located, with fresh eggs and fledglings. In December 2006 only a single active nest was located, however in November 2007 we found 13 nests and in October 2008 we located eight nests of which four were active. A June 2014 survey found only six nests, all unused. Silver Gulls breed during both autumn and summer at the Houtman Abrolhos, although relaxation of the rock lobster fishing season may result in fewer autumn-nesting Silver Gulls.

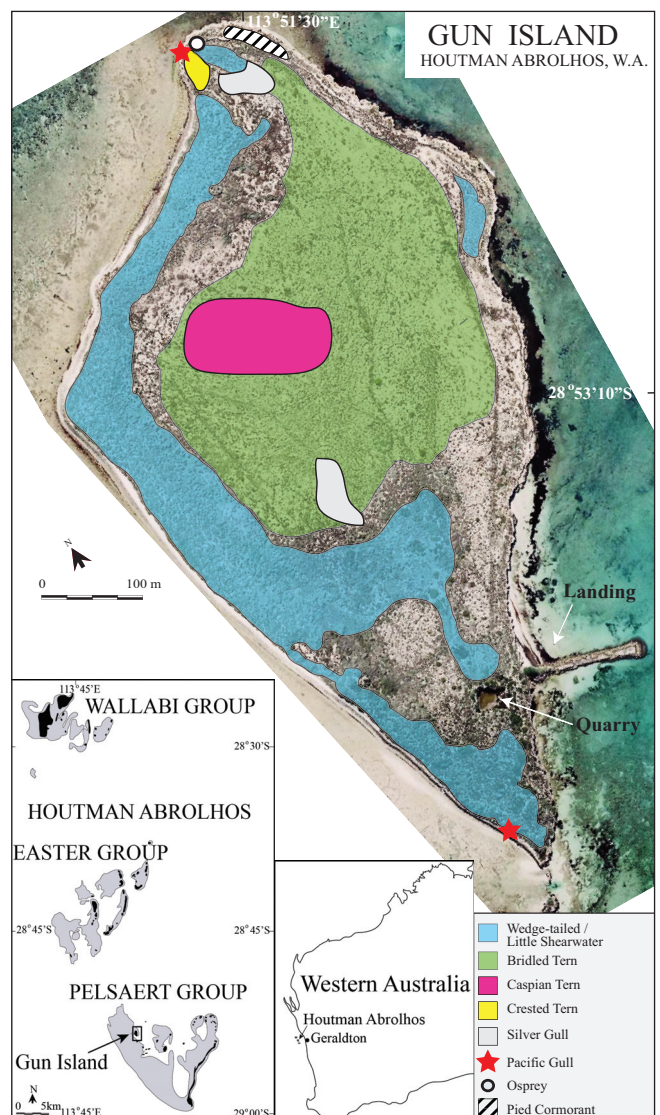


Figure 1. Gun Island, Houtman Abrolhos, Western Australia.

Onychoprion anaethetus Bridled Tern – After Wedge-tailed Shearwaters this is the most numerous breeding seabird on Gun Island. Up to 2500 nests have been recorded. Nesting occurred across the island principally under the bases of limestone rock piles created during guano mining activities. In 1993 there were an estimated 1000 pairs⁴, but in 1999 there were estimated 2500 pairs⁵. The highly variable numbers of breeding Bridled Terns is typical for this species in Western Australia, and is likely a response to changes in the Leeuwin Current⁶. In December 2006 we estimated that there were only 178 pairs nesting⁷, compared to our estimate of 710 pairs in 2007.

Thalasseus bergii Crested Tern – Up to 260 pairs. An intermittent breeder, with only a single breeding record of a colony of 260 nests recorded on 6 December 2006⁷. Crested Terns at the Houtman Abrolhos lay one egg clutches. Nests and the surrounding crèche contained chicks from 1–9 days old. The colony was located in the northern portion of the island across open ground scraped bare by guano mining.

Hydroprogne caspia Caspian Tern – Six pairs. The numbers of this species have been increasing slowly in recent years. The first nest was recorded in December 1999⁴. In December 2006 there was a single nest, in November 2007 there were six nests with large runners⁷ and in October 2014, 12 nests were located with contents ranging from eggs to fledglings.

Ardenna pacifica Wedge-tailed Shearwater – 4225 burrows were located in 2006⁷. Burrows were dug into deeper fine sandy soils overgrown by *Diplolaena grandiflora* and *Nitraria billardierei* scrub and some *Atriplex cinerea* dwarf scrub. The soil turnover by shearwaters here favours *Nitraria* shrubs. Wedge-tailed Shearwaters were first recorded by the survivors of the shipwreck *Zeewyk* in 1727, on the evening of 20 August 1727 when 45 bat-like birds were caught for food. Over the next two months the likely catch amounted to 1965 birds (of which 678 were directly reported in contemporary journals^{8,9}). *Zeewyk* survivors were likely to have decimated the breeding population in the summer of 1727, as no birds were observed after 3 November, at a time when they undergo a two-week pre-breeding exodus. No observations were noted at a time in January/February when the many burrows that they now knew contained shearwaters, would have contained calling chicks. It seems likely that the sandy habitat was more extensive prior to the arrival of guano diggers in the 1880s, and that too would have had a negative impact upon populations.

Puffinus assimilis Little Shearwater – We estimated 1736 burrows in 2006⁷, although the breeding population would be somewhat lower than the total burrow count as not all burrows contain active breeding attempts. Birds nested in burrows amongst the more extensive Wedge-tailed Shearwater rookery which extended across deeper dunal sands along the western and northern shorelines. Based upon surveys conducted with burrowscopes and 100 metre long strip transects the density of burrows averaged 0.08/m².

Pelagodroma marina White-faced Storm-Petrel – Up to 50 burrows. In mid-January 2003 CAS recorded a single chick in a burrow amongst those of Wedge-tailed Shearwaters and a dead half-grown chick was discovered in March. Approximately 1.3 percent of burrows may contain this species, therefore making a population of approximately 50 pairs.

Phalacrocorax varius Pied Cormorant – 100 nests. An intermittent breeder, although roosts along the shoreline in large numbers regularly. Remains of 100 empty nests were located along the far north-western shore of the island in October 2014.

Factors Affecting Status

The island is visited infrequently due to its position away from major mooring or channel areas. The island was inhabited by the survivors of the *Zeewyk* shipwreck in 1727 for nine months, where they survived in part upon Wedge-tailed Shearwaters and presumably other seabirds. Guano mining was undertaken intermittently from 1844, but a major operation commenced in the 1880s and included the construction of a rock groyne, tramlines and buildings. The majority of the island was stripped of vegetation and loose limestone slabs were piled up so that guano could be extracted.

Australian Sea-lions use some of the landing beach and the western shore as a haulout.

There are several introduced weed species, most likely introduced during the extensive period of guano digging, including: Wild Oats *Avena fatua*, the Medic Burr *Medicago polymorpha* and Wild Radish *Raphanus sativus*.

Other Seabirds Recorded

<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle – One regular visitor to the island; preys upon Wedge-tailed Shearwaters.
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher – No nests were located but a pair was observed defending a territory.
<i>Sternula nereis</i>	Fairy Tern – Up to 14 adults were sighted roosting along the western shoreline.
<i>Sterna dougallii</i>	Roseate Tern – A flock of 45 adults roosted along the shoreline in the NW section of island.
<i>Egretta sacra</i>	Eastern Reef Egret – No nests were found, although it occupies the island and suitable rocky overhangs are available for nest sites.

Other Vertebrates Recorded

Yellow White-eye	<i>Zosterops luteus</i>
Red-capped Plover	<i>Charadrius ruficapillus</i>
Greater Sand Plover	<i>Charadrius leschenaultii</i>
Red-necked Stint	<i>Calidris ruficollis</i>
Ruddy Turnstone	<i>Arenaria interpres</i>
Grey-tailed Tattler	<i>Tringa brevipes</i>
Welcome Swallow	<i>Hirundo neoxena</i>
Australian Sea-lion	<i>Neophoca cinerea</i>
Marbled Gecko	<i>Christinus marmoratus</i>

Dotted-line Robust Slider	<i>Lerista lineopunctulata</i>
Common Dwarf Skink	<i>Menetia greyii</i>
Shrubland Morethia Skink	<i>Morethia obscura</i>
Barking Gecko	<i>Underwoodisaurus milii</i> .

Banding

None

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