

## SEABIRD ISLANDS

No. 18

## Broughton Island, New South Wales

**Location:** 32°37' S., 152°19' E.; 2.3 km off-shore and 15 km north-east of Port Stephens, N.S.W.

**Status:** Part of Myall Lakes National Park, controlled by the National Parks and Wildlife Service (N.S.W.).

**Description:** 138 ha; irregularly shaped, 2.5 km at longest and 1.4 km at widest.

The main island, the largest of the costal islands of N.S.W., is undulating and rises to a rocky, quartzite ridge some 91 m high at the north-east corner before dropping steeply to the sea. Smaller cliffs are interspersed with beaches on the northern, southern and eastern sides. The undulating ridges are mostly sandy with some rocky outcrops in a few places; there is a swampy area in the centre. Much of the island is covered with Kangaroo Grass *Themedeia australis*, Blady Grass *Imperata cylindrica* and Bracken *Pteridium esculentum*. There are a few scattered trees including sapling Broad-leafed Paperbark *Melaleuca quinquenervia* and stunted Coral Trees *Erythrina sp.* around the edge of the swamp. Tree Broom-heath *Monotoca elliptica* grows in clumps mainly at the western end with isolated specimens elsewhere. Pigface *Carpobrotus glaucescens* is scattered over the island and patches of Prickly Pear *Apuntia stricta* are found mainly at the south-east corner. Other vegetation includes the following:

*Blechnum indicum*, *Casuarina glauca*, *Cenchrus caliculatus*, *Clematis glycinoides*, *Correa alba*, *Cupaniopsis anacardioides*, *Cyperus polystachyos*, *Doodia aspera*, *Duboisia myoporoides*, *Enchylaena tomentosa*, *Hydrocotyle bonariensis*, *Juncus kraussii*, *J. subsecundus*, *Kennedia rubicunda*, *Lomandra longifolia*, *Paspalum dilatatum*, *Poa poiformis*, *Rhagodia hastata*, *Samolus repens*, *Scirpus nodosus*, *Spinifex hirsutus*, *Tetragonia tetragonioides*, *Westringia fruticosa*.

Three of the satellite islands or islets, Little Broughton or East Head, North Rock and Inner Rock are dealt with separately on pages 14-19. A fourth, South Rock, also known as Looking Glass or South Island, is at the south-east end, close to, but separated from the main island. It is very steep-sided and rocky, rising to 46 m,

with little soil supporting vegetation such as Ruby Saltbush, Mat-rush and Prickly Pear, the last-mentioned being very prevalent in 1972 and 1973.

Also at the south-east end near South Rock are several small, rocky outcrops, the largest of which is known as Snapper Rock. It is connected to the main island at low tide, but two adjoining outcrops are separated. At the north-west end and also connected to the main island is a rocky outcrop known as West End with rather shallow soil supporting a thick growth of Mat-rush, Tree Broom-heath and Coast Wattle *Acacia sophorae* interspersed with Pigface and creepers.

**Landing:** A sandy beach at the end of Esmeralda Cove provides easy landing. Landings may also be made onto other beaches depending on weather conditions, and emergency light aircraft landing is possible.

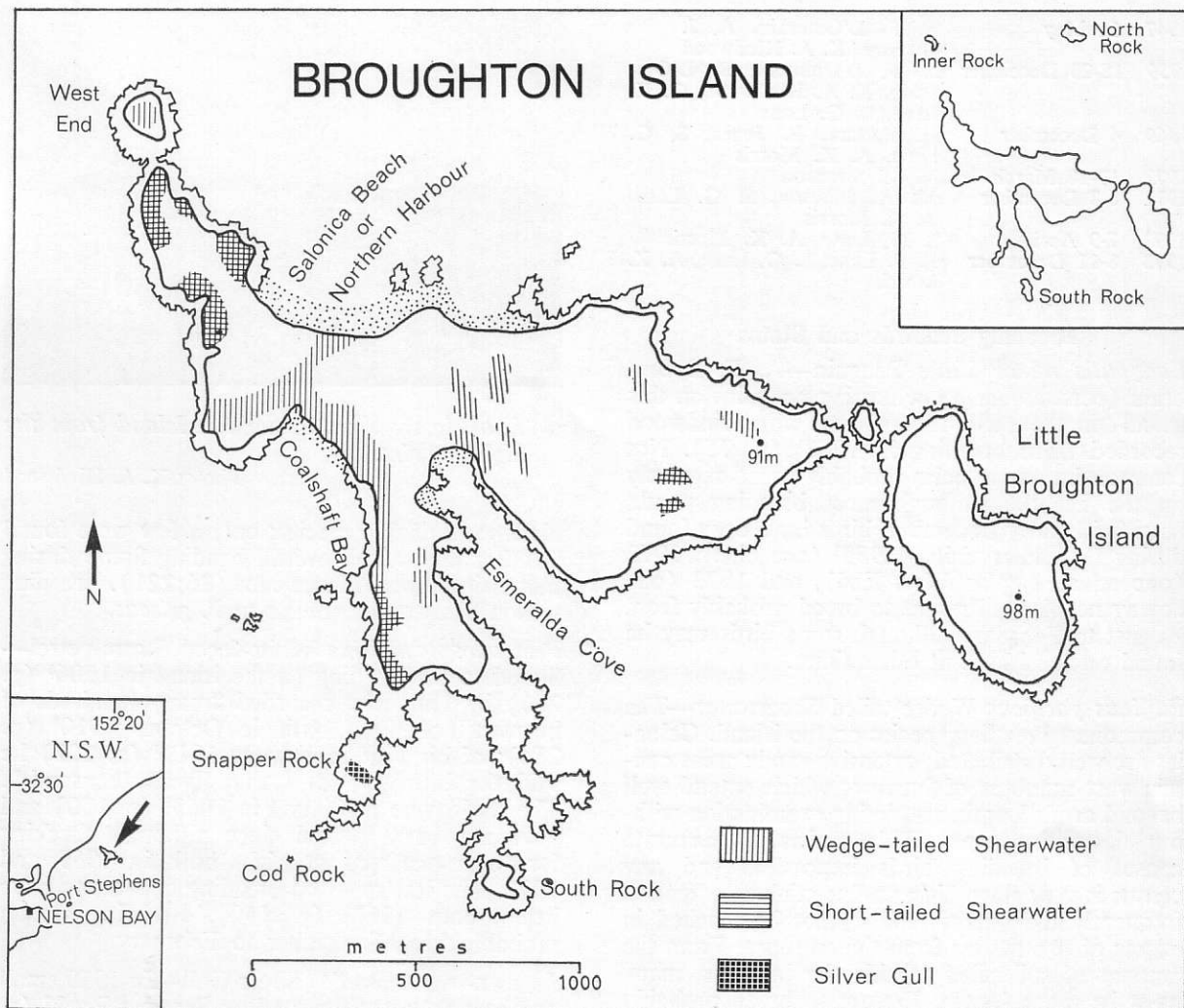
**Ornithological History:** Period summarised — 1906 to December 1973.

In December 1906 A. F. Basset Hull '... had received an egg of the Wedge-tailed Shearwater (*Puffinus pacificus*) collected for him by L. Harrison on Broughton Island'<sup>2</sup> (p. 147) and in the same month learned that storm-petrels bred there.

Broughton Island was the first recorded breeding place in Australia of the Sooty Shearwater. This species was 'unearthed' by Hull and Jackson<sup>5</sup> (p. 101) in 1911 but the burrow contained no egg. However, Rohu<sup>8</sup> collected a specimen and 'eggs' in 1912. In 1959 the Short-tailed Shearwater<sup>2</sup> (p. 151) was also found breeding there. Banding of the shearwaters commenced in 1959 in order to determine breeding biology and dispersal.

As relatively few ornithological visits have been made to the island during the past 70 years, those recorded follow:

1910	October	A. F. Basset Hull
1910	December	A. F. Basset Hull
1911	29 January	A. F. Basset Hull, S. W. Jackson, R. Grant
1911	March	A. F. Basset Hull
1912	29 December	S. E. Rohu



● Broughton Island (looking west). South Rock is at the left of the picture and Little Broughton Island is in the foreground.

Photo: RAAF

1947	11 May	A. F. D'Ombra, A. J. Gwynne, K. A. Hindwood
1959	18-20 December	A. F. D'Ombra, R. D'Ombra, K. A. Hindwood, G. K. Lane, S. G. Lane
1969	4 December	H. Battam, B. Jones, S. G. Lane, A. K. Morris
1972	17-18 March	N. M. Swanson
1972	6-8 December	M. A. Johnson, S. G. Lane, A. K. Morris
1973	7-9 April	S. G. Lane, A. K. Morris
1973	8-11 December	L. F. Lane, S. G. Lane, A. K. Morris

### Breeding Seabirds and Status

*Eudyptula minor* Little Penguin—A. F. D'Ombra (pers. comm.) saw nesting penguins on this island "in the early 1930's" and with Hindwood recorded them breeding in 1947<sup>1</sup> (p. 75). Not common but some pairs probably breed regularly on the island. Although most breeding would have finished by December, birds have been found during December visits—1959<sup>2</sup> (one bird), 1972 (one on an egg on West End), and 1973 (one downy nestling). Present to breed probably from August to February although some birds may be found on the island at other times.

*Puffinus pacificus* Wedge-tailed Shearwater—The commonest breeding species on the island. Colonies are well distributed; extensive sandy areas contain vast numbers of burrows which extend well beyond arm's length, restricting examination without destroying them. This makes an accurate census of breeding birds impossible and any census is very slow. Using a fine stick as a 'feeler', frequently the burrow end cannot be reached in excess of two metres from the entrance. From the amount of soil piled outside the burrows, many must be much longer. Present to breed probably from mid-August, with the young leaving by early May.

*Puffinus griseus* Sooty Shearwater—First recorded breeding on the island in December 1912<sup>3</sup>. Probably breeds in small numbers but is difficult to locate because of the depth of the burrows. Occasionally found on the surface at night. Present for breeding probably from September with the young birds leaving in May.

*Puffinus tenuirostris* Short-tailed Shearwater—Found breeding in 1959 by K. A. Hindwood<sup>2</sup> (p. 151), when a few birds were located in burrows on their single egg. They were in the ratio of one *P. tenuirostris* to four *P. pacificus*. In the same area in December 1972, about 18 per cent (20:88) of the birds caught on the surface at



● Looking west on Broughton Island from the highest point.

Photo: K. A. Hindwood

night were of this species; only a few were found in other areas. The overall banding figure during that visit showed 11 per cent (26:221). Breeding season likely to be similar to *P. griseus*.

*Pelagodroma marina* White-faced Storm-petrel—Stated to be breeding on the island in 1906<sup>3</sup> (p. 253) by Hull who recorded "many hundreds of burrows" of these birds in October 1910<sup>3</sup> (p. 254); of his visit in January 1911<sup>5</sup> (p. 102) he said the burrows were "literally in thousands". The birds were not found in 1959<sup>2</sup> (p. 150) and have not been located since although checking for them occurred at night both in 1959 and 1972. The last reported breeding appears to have been about 1957<sup>2</sup> (p. 150). Breeding season probably from September to February.

*Larus novaehollandiae* Silver Gull—In 1959 small numbers apparently nested on Snapper Rock<sup>2</sup> (p. 152) and a few nests with eggs were found there in December 1972. Breeding season somewhat variable but probably between October and January.

*Sterna bergii* Crested Tern—Some broken eggs of these birds were also found on Snapper Rock in 1959<sup>2</sup> (p. 153). Apparently some terns had nested within the small gull colony. Breeding season probably similar to *L. novaehollandiae*.

### Factors Affecting Status

Rabbit *Oryctolagus cuniculus*—In 1906 the Danysz Rabbit Inoculation Station<sup>2</sup> (p. 147) was established on the island. Descendants from the original stock are still numerous but their effect on the seabirds is not apparent.



Feral Cat *Felis catus*—Hull<sup>3</sup> (p. 254) in 1911, when referring to the destruction of storm-petrels, recorded that a launch proprietor told him that 'some domestic cats which had been liberated on the island were responsible for much slaughter of these innocents'. However Hull considered that harriers were the offenders. Cats are still present and may cause some damage to breeding seabirds but no evidence of this has been found during recent visits. Certainly they feed on young rabbits and a fisherman living on the island (1973) said they frequently kill and take trapped rabbits.

Rat *Rattus sp.*—Rats are numerous in the vicinity of the fishermen's huts but they are apparently restricted mainly to this area by the availability of regular food in the form of scraps and rubbish. There is no evidence that they interfere to any extent with the breeding seabirds.

Goat *Capra hircus*—At least on one occasion, a well-meaning though misguided person released goats on the island to provide fresh milk in case of people being stranded there. They were removed before any consequential damage resulted.

Snake—Although not originally indigenous to the island, resident fishermen have reported that large brown snakes have become common since some were washed onto the island at the time of the extensive floods along the coast in the latter 1950's. The degree of 'common' is not known as Lane in five visits since that time has not yet seen one and any effect on the breeding seabirds would certainly be minimal. Misidentification may often occur with skinks.

Skinks *Sphenomorphus sp.*—Very common.

Grass Fires—Fishermen set fire to the grass quite frequently, apparently to provide greater safety from snakes when walking to favoured fishing sites. The effect on the seabirds is not known. Burning may have interfered with the breeding storm-petrels but this does not seem to be the case with the shearwaters. Their burrows are usually deep in the areas that would burn; the roots are not burnt and the cleared areas, particularly among the bracken, may assist the birds in providing closer or easier take-off places. The regrowth is usually fairly rapid.

#### Other Seabirds Recorded

*Phalacrocorax melanoleucos* Little Pied Cormorant  
*Phalacrocorax carbo* Black Cormorant  
*Phalacrocorax sulcirostris* Little Black Cormorant  
*Egretta sacra* Reef Heron  
*Haematopus fuliginosus* Sooty Oystercatcher

Hull<sup>3</sup> (p. 257) said that Black Cormorants apparently were nesting in an inaccessible place on a huge 'sugarloaf' rock now known as South Rock or Looking Glass Island. The three cormorant species listed were using the 'Rock' as a roosting place in 1959, 1972 and 1973. During the 1972 visit, two rangers from the NPWS climbed to the 'inaccessible place' referred to by Hull\*. There was ample evidence of the location having been used for many years as a roosting place but there was no evidence that it had been used for nesting, and this has never been confirmed.

\*Note: No doubt the 'Rock' was inaccessible to Hull who had a club foot; the climb is difficult and dangerous, and few people attempt it.

#### Banding

Period covered 18 December 1959 to 31 December 1973.

*P. pacificus*—518 adults, 36 nestlings banded.

*P. griseus*—2 adults banded.

*P. tenuirostris*—54 adults, 17 nestlings banded; 1 recovery at banding place.

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