

SEABIRD ISLANDS

No. 11

Lion Island, New South Wales

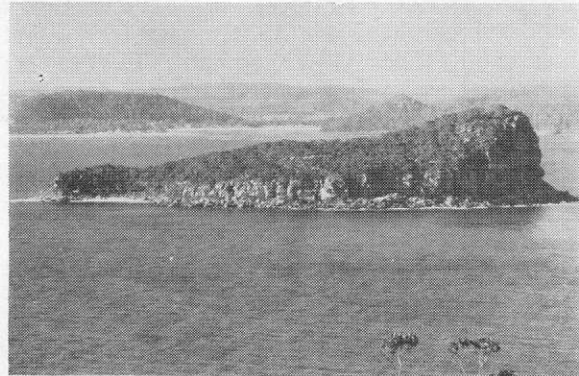
Location: 33°33'S., 151°20'E., in Broken Bay at the mouth of the Hawkesbury River, 300 m from the nearest shoreline.

Status: Nature Reserve controlled by the National Parks and Wildlife Service (N.S.W.): entry permit required.

Other names: Originally named Mount Elliott Island.

Description: 8 ha; resembles a lion at rest guarding the entrance to the bay and extends about 600 m x 300 m. From a small beach at the narrow, western end the island rises to 90 m at the eastern end with precipitous cliffs particularly around the eastern half. The shore line is rocky and, at the base of the cliffs, landslides have formed rugged scree slopes.

The major vegetation community* is low woodland dominated principally by *Angophora costata*, although *Eucalyptus botryoides* is co-dominant on the eastern end of the island. A scattered tall shrub layer of species such as *Banksia serrata* and *Exocarpus cupressiformis* is present. A low shrub layer up to 2 m high is continuous over most of the area. *Xanthorrhoea arborea* and *Lomandra longifolia* are conspicuous in this layer together with shrubs such as *Platysace lanceolata*, *Hakea sericea*, *Dodonaea triquetra* and *Acacia ulicifolia*. The litter layer is



• Lion Island from West Head (looking north-east).

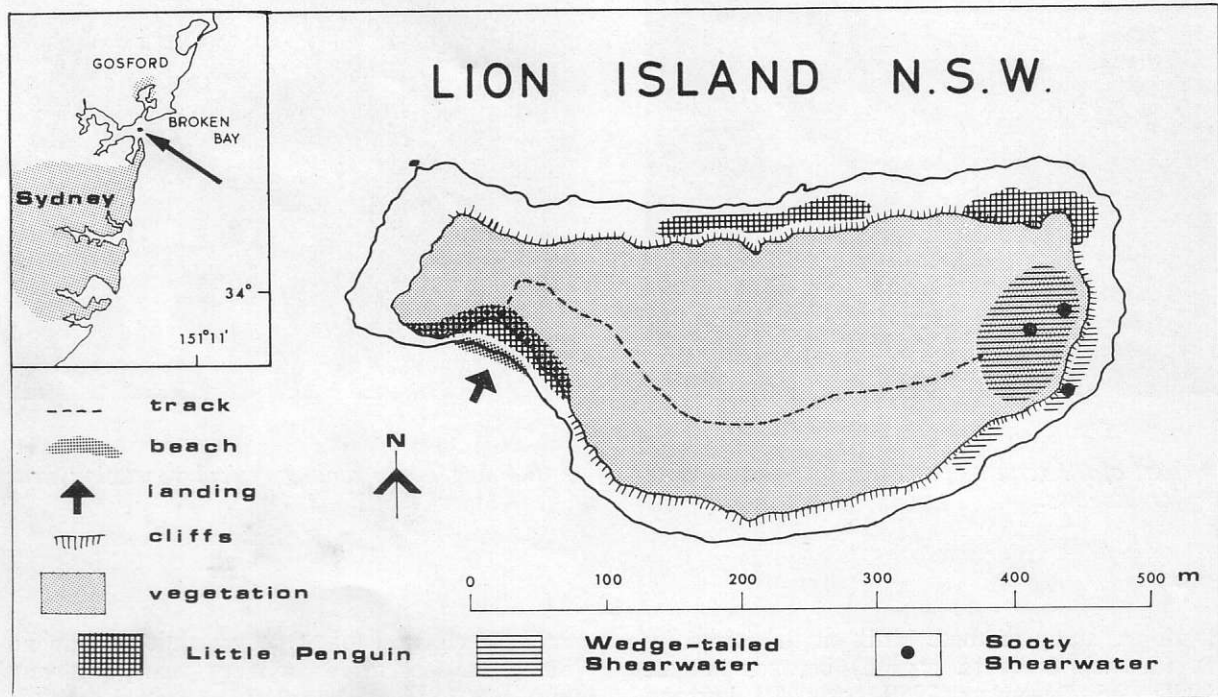
Photo: M. D. Murray

very thick, commonly up to 100 mm and few herbs have been recorded. Scattered areas of bare rock occur.

At the western end in a better protected saddle is low open forest of *Banksia integrifolia* and *Casuarina littoralis* with a ground layer of *Adiantum aethiopicum*, *Lomandra longifolia* and *Commelina cyanea*. *Lantana camara* has overgrown some areas rapidly in recent years, particularly immediately behind the beach.

The scree slopes are rocky with shallow soil, the result of many rock falls. Vegetation in the breeding locations includes *Histiopteris incisa*, *Scirpus nodosus*, *Lomandra longifolia*, *Rhagodia baccata*, *Tetragonia tetragonoides*, *Solanum nodiflorum*, *Rumex brownii* and *Carpobrotus glaucescens*. The following vegetation is found usually in other, more rocky areas of the slopes:

* A comprehensive list of the vegetation species was provided by the National Herbarium of N.S.W. and is held by the National Parks and Wildlife Service (N.S.W.).



Flagellaria indica, Westringia fruticosa, Apium australe, Gleichenia rupestris, Wikstroemia indica, Dianella caerulea, Pittosporum undulatum, Cissus antarctica, Acmena smithii, Baecchia imbricata, Lobelia alata and Lantana camara.

The rocky terrain does not provide a very favourable situation for burrowing petrels and the dense vegetation is quite unsuitable for nesting by gulls and terns.

Landing: A good landing onto a sandy beach is provided in a sheltered cove at the south-western end. However, the approaches are frequently dangerous for small craft.

Ornithological History: The earliest recorded ornithological visit was on 1 December 1924. The members of the party were A. H. Chisholm, N. W. Cayley, T. Iredale and P. A. Gilbert; Gilbert was probably the author of the report. Hindwood apparently visited the island on 12 April 1935³ (see photo p. 12 of reference) and Keast⁵

referred to a visit by M. Goddard in 1940. Subsequent visits have been well documented.

The visitors in 1924¹ recorded Wedge-tailed Shearwaters breeding but made no mention of Little Penguins. However in 1939 Hindwood³ reported that they bred on the island. Goddard's visit in 1940 led to the identification and discovery of breeding Sooty Shearwaters in 1947⁵.

Following the dedication of the island as a Fauna Reserve (now termed Nature Reserve) in 1956, a survey of the breeding seabirds was initiated² and some 50 visits have been made since then.

Breeding Seabirds and Status

Eudyptula minor Little Penguin—Present to breed usually from August with most young leaving by February. After breeding, adults are present in burrows moulting and a few birds have been found in burrows from March to July.



• Part of the scree slopes with banders searching for burrows.



• Banding group among typical vegetation near the top of the island.

During a study of these birds on the island by D. G. Nicholls (pers. comm.) between August 1958 and December 1959 some 80 burrows were marked; these were estimated to be about 25% of the total. Burrows are located mainly in the area behind the beach and the lower ones particularly are well protected now by the dense growth of lantana. Some burrows are scattered around the scree slopes, the largest concentration being near the centre of the north side. Estimated 300 breeding pairs.

Puffinus pacificus Wedge-tailed Shearwater—Present to breed from August until early May (?). The colony appears to have declined, at least in breeding success which has been very low for many years⁷. The first visitors¹ stated that the colony '... probably consists of a thousand or more birds...'. Estimations during the survey^{6,7} are of some 300 breeding pairs, but because of the terrain and other factors, comparison of these figures is unreliable. However, the decline of the colony has continued. On 28 December 1974, during a brief visit, only nine adults were found on the scree slopes from some 20 burrows examined. Former breeding areas on these slopes had been severely damaged by very rough seas and much of the soil had been washed away. In the colony at the top of the island, vegetation, dead sticks, branches, leaves and similar litter, normal

among such sandstone-type vegetation where no 'burns' have occurred for many years, was very thick (on 28 December 1974). Access by birds to their former sites would be extremely difficult. Shortage of time prevented a detailed search but there was little evidence of occupation except for some fresh digging in an area where lantana had been killed. Estimated 300 breeding pairs.

Puffinus griseus Sooty Shearwater—Present to breed probably from September to May. First recorded (unconfirmed) in 1940⁵. A few pairs have nested in the colony at the top of the island and on a shelf on the eastern face just below the top colony. On a few occasions a pair was found breeding in the scree slopes directly below the top colony. According to the record, probably this was the place where Goddard⁵ '... withdrew a bird which appeared to be more vicious, larger and heavier than is usual with *pacificus* but it escaped before he could establish its identity'. Estimated 6-10 breeding pairs.

Puffinus tenuirostris Short-tailed Shearwater—One was located in a burrow on the scree slopes near the eastern end of the island on 22 December 1973⁸. No egg was found but a complete search of the burrow could not be made.

Factors Affecting Status

OTHER VERTEBRATES

Water Dragons *Physignathus lesueurii*, Goannas *Varanus varius*, White-tailed Water-Rats *Hydromys chrysogaster*, Rats *Rattus sp.*, Skinks *Sphenomorphus spp.*, House Mouse *Mus musculus*.

The introduced rats were obviously responsible for considerable predation particularly of eggs^{6,7} but since 1968 no rats have been found and no evidence of predation by them seen⁷. Goannas undoubtedly would take eggs and young birds but there has been little evidence to indicate any consequential interference. Casual, unauthorised visitors picnic on the beach but probably cause little, if any, damage or interference.

The vegetation growth including the lantana has changed the habitat particularly in the area of the top colony which is now almost completely overgrown. This growth must increase landing difficulties for the shearwaters and may be a reason for the decline. Take-off is not affected so greatly as the birds can still make their way to the large, exposed rock at the top of the eastern point.

On one occasion a few years ago, a goat *Capra hircus* was released on the island but it was promptly removed by officers of the NPWS.

Other Seabirds Recorded

Halobaena caerulea Blue Petrel (remains)
Puffinus gavia Fluttering Shearwater (remains)
Phalacrocorax melanoleucos Little Pied Cormorant
Phalacrocorax carbo Black Cormorant
Phalacrocorax sulcirostris Little Black Cormorant
Larus novaehollandiae Silver Gull
Sterna bergii Crested Tern

Banding

Period 20.10.56 to 31.12.74.

E. minor—during 1958/59 243 penguins were banded and 11 were retrapped on the island. Several were recovered in Sydney Harbour, one on the south coast of N.S.W. and one on the southern coast of Victoria.

In November 1968, 38 nestlings were banded and four have been recovered 3 km, 21 km, 97 km and 214 km south from the banding place.

P. pacificus—320 adults, 35 nestlings; 110 individuals recovered at banding place 195 times; 8 recoveries away from the island, 10 km to 97 km, between the 21 October and 25 February.

P. griseus—33 adults, 4 nestlings; 13 individuals recovered at banding place 16 times; 2 recoveries away from the island, one 320 km south and the other near Hokkaido, Japan⁴.

P. tenuirostris—1 adult.

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Acknowledgements

I wish to thank Messrs F. K. Hersey and A. J. Leishman for obtaining information on the vegetation from the National Herbarium, Mr A. H. Chishom for details of the first visit, Mr D. G. Nicholls for data on his penguin study, Messrs G. W. Vincent and A. Norman for banding and vegetation details, the Secretary, Australian Bird-banding Scheme for details of recoveries, and the many others who have helped over the years.

Compiled
23 April 1974

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