

SEABIRD ISLANDS

No. 231

North West Island, Great Barrier Reef, Queensland

Location: 23°18'S, 151°42'E. This island is about 75 kilometres north-east of Gladstone on the central Queensland coast.

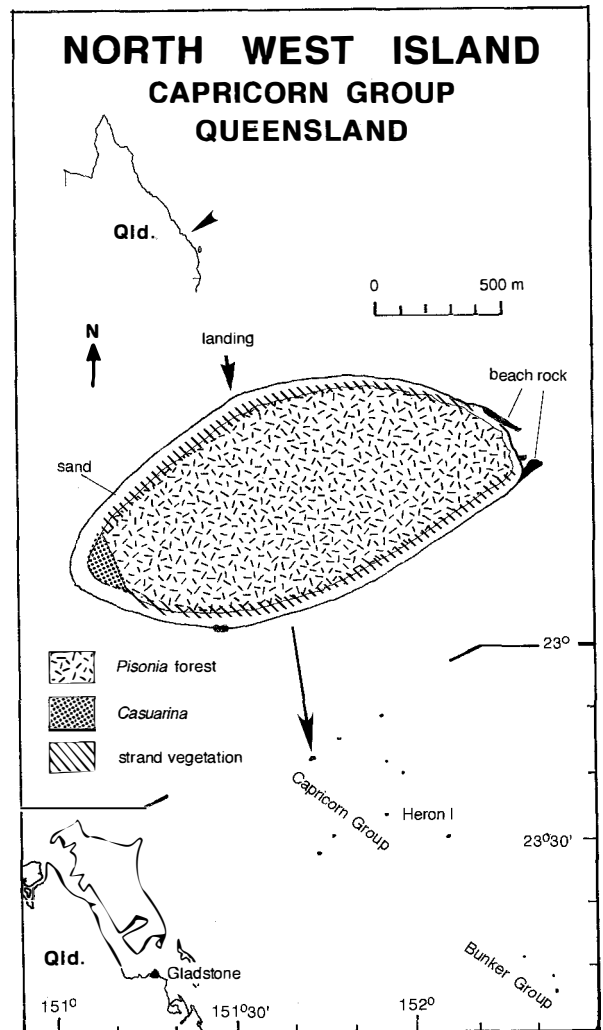
Status: The island is a National Park. The associated reef is zoned General Use B in the current zoning plan of the Mackay/Capricorn Section of the Great Barrier Reef Marine Park. Permits are required for camping.

Landing: Access to the island can be gained safely during high tide from the northern side of the reef. Elsewhere along the reef, large rocks are navigational hazards.

Description: 90 ha; 1 700 m by 800 m (above high tide). It is the second largest sand cay on the Barrier Reef, sited at the eastern side of a 38 km² coral reef. Elevation is 3.5 m above the reef with a 6.5 m high dune at the eastern end. The central 10 ha has phosphatic cay rock that was mined in the 1890s⁶.

The cay is forested with *Pisonia grandis*. Other trees in the forest are *Ficus obliqua*, *Celtis paniculata*, *Pipturus argenteus* and *Scaevola sericea*. Small glades in the forest have thickets of *Abutilon asiaticum* and *Wollastonia biflora*. The grasses *Lepturus repens* and *Thuarea involuta* are also common. More than 40 plant species have been recorded^{4,7,15}.

Ornithological History: Campbell and White³ described the avifauna during an RAOU expedition in October 1910. The Royal Society of New South



Wales expedition of November–December 1925 produced bird reports by MacGillivray¹² and Gilbert⁸, and a general account by Musgrave¹⁵. MacGillivray returned to describe the avifauna in November–December 1927¹³ and in May 1931¹⁴. Birds were described in December 1946 by Cooper⁵ and in August 1968 by Cameron². M. Vanek studied shearwaters in the early 1980s. K. Hulsman^{9,10} censused seabirds and waders from January to February 1983 and from January to February 1984. S. G. Lane censused seabirds and waders (for Hulsman) in January 1984, and visited again in December 1986. S. B. Domm recorded birds on 11 occasions from January 1983 to February 1985. T. Walker recorded birds on 18 occasions from July 1983 to March 1987.

Breeding Seabirds and Status

Puffinus pacificus Wedge-tailed Shearwater. Birds arrive in October to breed and the last few juveniles and adults depart in June. Nest burrows cover most of the island. There was a mean density of 31.5 burrows per 100 m² determined in 1983–84¹⁰. The work of P. K. Dyer and G. J. E. Hill has shown the occupancy rate of burrows on nearby islands is about 50 per cent (*Emu* 92: 147–151). On that basis, North West Island has an estimated 142 200 pairs. M. Vanek has estimated that more than 500 000 pairs breed in some years with population variation up to 25 per cent between years (pers. comm.). Earlier population estimates are rough guesses or unreliable extrapolations. They range from 240 000 birds¹¹ to 1 000 000 birds,¹³ 2 000 000 birds⁸ or even 20 000 000 in the popular literature.

Egretta sacra Eastern Reef Egret. Up to 70 birds have been counted at the island. White colour morphs outnumber grey morphs by about five to one. Nests were located in November 1925^{8,12,15} and in August 1968² but have not been seen or searched for in recent years.

Larus novaehollandiae Silver Gull. Several pairs nested in 1925^{8,12,15} and 1926¹³ when a turtle factory provided offal for the gulls. Nesting was not recorded in other years while feral cats were present. Following eradication of the cats in 1985 some gull nesting has recommenced. Gull numbers are correlated with the numbers of campers who are a source of scraps¹⁷.

Sterna bergii Crested Tern. There is a breeding record during the 1920s when nesting birds were ravaged by feral cats¹⁶. Lavery and Grimes¹¹ list the island as a breeding site but give no details. Birds are common throughout the year with numbers up to 135.

Anous minutus Black Noddy. There were an estimated 91 000 pairs of noddies nesting on the island during 1983–84^{9,10}. The greatest densities of nests are found in large fig trees that are taller than surrounding *Pisonia* trees. Some noddies remain on the island throughout the year. They nest during summer months, November to February.

Factors Affecting Status

North West Island supports about 70 per cent of the breeding Wedge-tailed Shearwaters and about 50 per cent of the breeding Black Noddies on the east coast of Australia. It ranks with Raine Island as one of the most important seabird breeding islands on the Great Barrier Reef.

There are few shearwater burrows in the lithified centre of the cay. This area presumably represents an old development stage when the cay was small and shearwaters were not present to overturn the sand (burrowing interferes with the phosphate rock formation). Burrowing in this area may have been inhibited if the overlying sand was removed to mine phosphate rock in the 1890s. The guano miners released cats which are considered responsible for the absence of ground-nesting terns at the island. Cats killed an estimated 0.4 per cent (2 193) of adult shearwaters and 0.1 per cent (173) of chicks during February 1983⁹. They ate the contents of the thoracic and abdominal cavities of adults and left the rest of the bird. Cats usually decapitated chicks and played with the bodies. Cats killed 0.1 per cent (173) of adult noddies in February 1983⁹. No estimate of noddy chicks taken from nests was made. Gulls and other birds were occasionally killed during winter. The population of over 200 cats was removed in 1985. Return of ground-nesting terns will depend upon the numbers of campers and day-tourists and their activities.

In some years the sticky fruits of *Pisonia grandis* are the major cause of mortality of shearwaters and noddies. In 1982–83 *Pisonia* fruits incapacitated and killed 8 per cent (9 634) of adult noddies and 1.2 per cent (1 500) of chicks⁹, and 0.6 per cent (3 346) of adult shearwaters and 0.2 per cent (461) of chicks died following entanglement in *Pisonia* fruits. The severity of mortality depends on the extent and timing of fruiting and is negligible in some years.

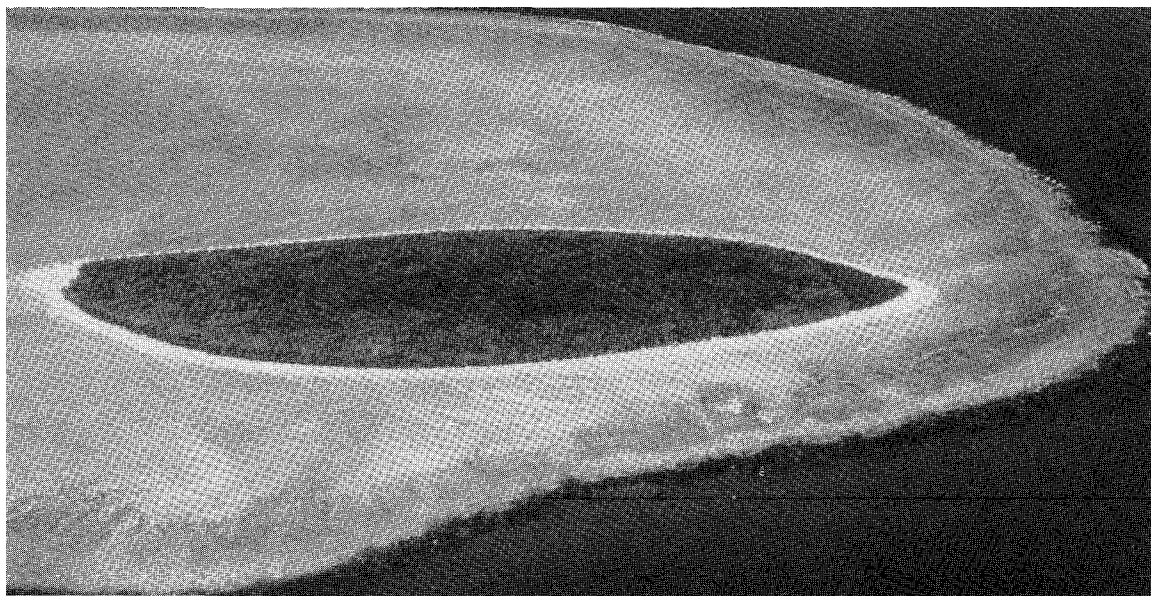
Camping areas along the north-eastern side of the cay have been alienated to shearwater nesting owing to ground compaction and blockage of bird departure paths by tents. Human trampling of burrows can at times be a major cause of shearwater mortality (M. Vanek, pers. comm.). Very wet or very dry sand is easily collapsed. It is impossible to walk through areas with burrow densities of 40 to 120/m² without collapsing burrows.

North West Island supports the second largest Green Turtle breeding colony on the east coast. There is potential for conflict between turtles and nesting shearwaters and ground-nesting birds in peak turtle nesting years. Shearwaters and other

birds are preyed upon by up to three pairs of White-bellied Sea-Eagles *Haliaeetus leucogaster*. In the past, sea-eagles nested on the cay^{4,8,9}.

Other Seabirds Recorded

<i>Phaethon rubricauda</i>	Red-tailed Tropicbird (1, June 84)
<i>Sula leucogaster</i>	Brown Booby (uncommon)
<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant (occasional, max. 41)
<i>Phalacrocorax varius</i>	Pied Cormorant
<i>Phalacrocorax carbo</i>	Great Cormorant
<i>Fregata minor</i>	Great Frigatebird (occasional)
<i>Fregata ariel</i>	Lesser Frigatebird (occasional)
<i>Egretta novaehollandiae</i>	White-faced Heron (uncommon)
<i>Haematopus longirostris</i>	Pied Oystercatcher (common, max. 9)
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher (occasional)
<i>Sterna bengalensis</i>	Lesser Crested Tern (max. 112)
<i>Sterna sumatrana</i>	Black-naped Tern (occasional, max. 94)
<i>Sterna albifrons</i>	Little Tern (occasional)
<i>Sterna anaethetus</i>	Bridled Tern
<i>Sterna fuscata</i>	Sooty Tern
<i>Anous stolidus</i>	Common Noddy



• North West Island (looking south).

Banding

Period — February 1983 to January 1986.

Puffinus pacificus — 135 adults.

Larus novaehollandiae — 21 chicks.

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