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.

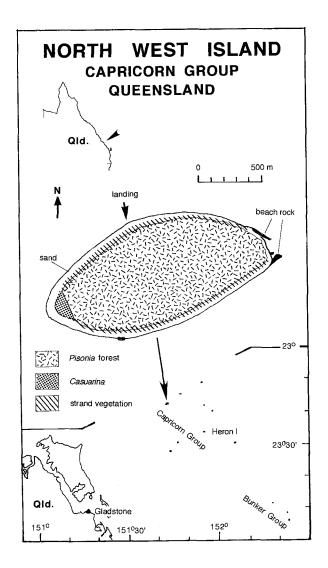
Status: The island is a National Park. The associated reef is zoned General Use B in the current zoning plan of the Mackay/Capricorn Section of the Great Barrier Reef Marine Park. Permits are required for camping.

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 groundnesting 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 groundnesting 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

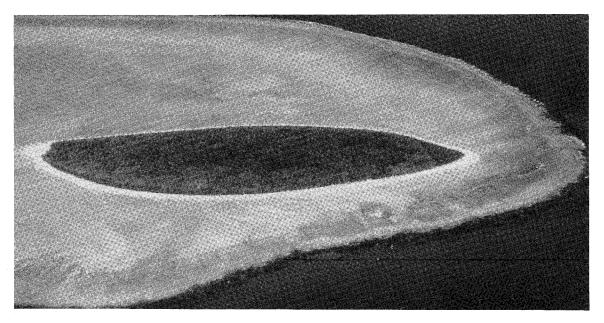
birds are preved upon by up to three pairs of White-bellied Sea-Eagles Haliaeetus leucogaster. In the past, sea-eagles nested on the $cay^{4,8,9}$.

Other Seabirds Recorded

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

Sterna albifrons Sterna anaethetus Sterna fuscata Anous stolidus

Bridled Tern Sooty Tern Common Noddy



• North West Island (looking south).

Photo: Queensland Department of Environment.

Banding

Period — February 1983 to January 1986.

Puffinus pacificus — 135 adults.

Larus novaehollandiae — 21 chicks.

Bibliography

- 1. Barrett, C. (1910). Narrative of the expedition to the islands of the Capricorn Group. *Emu* 10: 181–194.
- Cameron, A. C. C. (1969). Birds seen at North West Island, August 1968. Old Nat. 19: 99.
- Campbell, A. J. and White, S. A. (1910). Birds identified on the Capricorn Group during expedition of RAOU, 8–17 October 1910. *Emu* 10: 195–204, pls 19–25.
- Chaloupka, M. Y. and Domm, S. B. (1985). Comprehensive regional survey of the terrestrial flora on coral cays in the Capricornia Section of the Great Barrier Reef Marine Park. Proc. R. Soc. Qld 96: 75–80.
- Cooper, R. P. (1948). Birds of the Capricorns Great Barrier Reef. Emu 48: 107–126.
- Cribb, A. B. (1969). Historical notes on North West Island. Old Nat. 19: 82–85.
- Cribb, A. B. (1969). The vegetation of North West Island. Old Nat. 19: 85–93.
- 8. Gilbert, P. A. (1926). The Biology of North-West Islet, Capricorn Group (B) birds. *Aust. Zool.* 4: 210–226.
- Hulsman, K. (1983). Survey of seabird colonies in the Capricornia Section of the Great Barrier Reef Marine Park. II. Population parameters and some management options. Unpublished Report to Great Barrier Reef Marine Park Authority. 116 pp.
- Hulsman, K. (1984). Survey of seabird colonies in the Capricornia Section of the Great Barrier Reef Marine Park. III. Population parameters and management strategies. Unpublished Report to Great Barrier Reef Marine Park Authority. 51 pp.
- 11. Lavery, H. J. and Grimes, R. J. (1971). Sea-birds of the Great Barrier Reef. *Qld Agric. J.* 97: 106-113.

- MacGillivray, W. (1926). Birds of the Capricorn Islands. *Emu* 25: 229–238.
- 13. MacGilllivray, W. (1928). Bird-life of the Bunker and Capricorn Islands. *Emu* 27: 230–249.
- MacGillivray, W. D. K. (1931). A May visit to the Capricorn Islands. Emu 30: 270–276.
- Musgrave, A. (1925). The biology of North-West Islet, Capricorn Group. (A) Narrative. Aust. Zool. 4: 200–209.
- Walker, T. A. (1988). Crested Terns Sterna bergii on southern Great Barrier Reef Islands, 1985–1986. Corella 12: 53–56.
- 17. Walker, T. A. (1988). The population of the Silver Gull *Larus novaehollandiae* on the Capricorn and Bunker Islands. *Corella* 12: 113–118.

ACKNOWLEDGMENTS

We thank the following organizations for their financial support: Great Barrier Reef Marine Park Authority, Premier's Department, Queensland Government and Grifith University; and logistic support from the Marine Park Section of the Queensland National Parks and Wildlife Service and Heron Island Research Station. We also thank S. G. (Bill) Lane, Eddie Hegerl, Ross Mathers, Gail Lorimer, Dave Elsdon, Denise Bond, Debbie Harrison and Felicity Wishart for their assistance in the field.

Date compiled: 2 January, 1992; revised: 10 August, 1996.

Hulsman, K. Faculty of Environmental Sciences, Griffith University, Nathan, Queensland 4111.

Walker, T. A. (deceased). Formerly Marine Parks, Department of Environment and Heritage, P.O. Box 5391, Townsville Mail Centre, Queensland 4810.