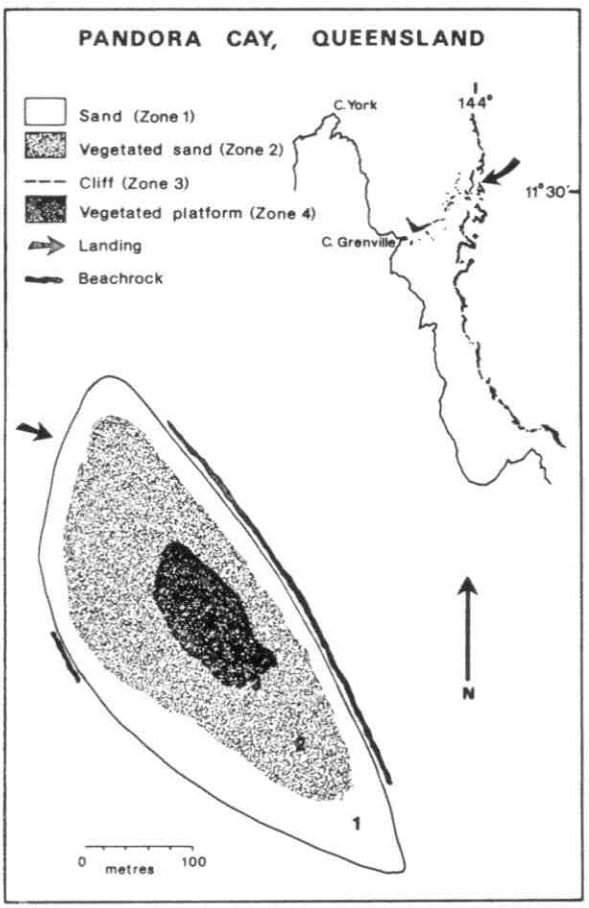
SEABIRD ISLANDS No. 128

Pandora Cay, Great Barrier Reef, Queensland

Location: 11°26′S., 144°00′E.; about 82 km north-east from Cape Grenville and 14.5 km north of Raine Island, Qld.

Status: Vacant Crown Land; Fauna Sanctuary*.

Description: 8.6 ha; 500 m long by 200 m wide and 3 m high. A coral cay situated at the north-western tip of Pandora Reef, one of the outer Great Barrier Reefs. The cay is composed of a wide (up to 150 m) outer beach of coral sand with a central vegetated platform of loosely cemented coralline rock which forms a low cliff of less than 1.0 m in height around the raised central portion of the cay. Exposed coralline beachrock lies along the eastern beach below High Water Mark and there is a small patch on the western side. The cay can be classified as a "vegetated sand cay" according to R. W. Fairbridge[1] and as a "grass cay" acording to K. A. Hindwood *et al.*[2] There are no trees, a few shrubs, and vegetation seldom exceeds 0.5 m in height. The cay can be divided into a number of concentric zones: (1) an outer unvegetated beach of coral sand with some beachrock; the beach slopes steeply up from Low Water Mark to a crest then levels out; (2) an inner vegetated beach area forming a shallow depression and containing a mixture of grass, herbs and a few shrubs interspersed with patches of bare coral sand; (3) a low, discontinuous broken cliff of loosely cemented coralline rock, with a few cavities and overhangs; and (4) a raised central vegetated platform up to 3 m above High Water Mark, composed of coralline rock and a dark sandy soil, loosely cemented with guano and plant remains and covered with low vegetation.



* In May 1981, the Queensland Government passed the "Raine Island Research Act of 1981", which reserved Pandora Cay, MacLennan Cay and Raine Island as islands in an area for scientific studies. The status of the cay is being changed from Vacant Crown Land to Scientific Purposes Area, to which access will be controlled by the Raine Island Corporation.

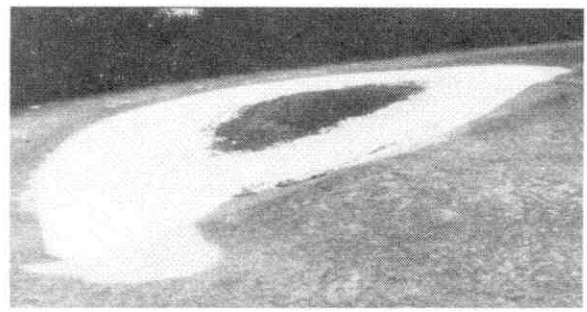
Seven plant species have been recorded: grasses *Lepturus repens* (zones 2, 4); and *Dactyloc tenium aegyptum* (zone 4); herbs *Tribulus cistoides* (zones 2, 3), *Achyranthes aspera* (zones 2, 4) and *Portulaca oleracea* (zones 2, 3) and shrubs *Boerhavia diffusa* (zones 2, 3) and *Sesbania cannabina* (zones 2,4). In the vegetated beach (zone 2) the dominant species is *Lepturus repens,* with occasional occurrences of others, and the platform (zone 4) contains a mixture of mostly *L. repens, A. aspera* and seasonal (summer) thickets of *S. cannabina,* with isolated occurrences of other species.

Landing: Onto the beach at the north-western tip of the cay. Landings should not be attempted in rough weather, because of the cay's exposed position and the poor, unsheltered anchorage. Numerous coral reefs, many not properly chartered, are in the area and local knowledge for navigation is essential.

Ornithological History: No bird records exist from either the wreck of HMS *Pandora in* 1791 nor the visit by Jukes[3] in 1843. On 11 December 1913, W. MacGillivray[5,6] landed on "a large turtle-infested sand-bank on the Barrier Reef, about 12 miles north-west of Raine Islet". His way of approach, the distance involved (but not the direction) and the absence of other vegetated cays in the area suggest that this was Pandora Cay, the location given by Warham[8]. MacGillivray recorded Masked Boobies, Brown Boobies and Crested Terns breeding. Warham[8] visited Pandora Ca yfrom 14-16 and 19-22 February 1959 and in addition to these, recorded the Buff-banded Rail *Rallus philippensis* breeding and a number of other non-breeding species. Lavery and Grimes[4] listed Pandora Cay as an important site for seabird breeding in Queensland and Storr[7] included Pandora Cay by name as a breeding site for Sooty Terns, Brown Boobies and Masked Boobies and by inference for other species.

The cay is now being visited regularly by Queensland National Parks and Wildlife officers, to monitor changes in its seabird populations and other features, in association with similar work on MacLennan Cay and Raine Island.

Visits have been made by C. J. Limpus on 5 March 1975, 7 December 1976 and 2 December 1977 (all of one day with an overnight stay); by D. H. C. Seton and G. R. Tomes on 25 June 1980 (afternoon and night); and by B. R. King and G. R. Tomes on 19 June 1981, 31 July 1982 and 12 December 1982 (for 3-4 hours each). The cay has been mapped several times since 1975, vegetation described and seabirds observed and banded.



• *Pandora Cay from the air (looking north-west).*

Breeding Seabirds and Status

Sula sula Red-footed Booby — One or two pairs have been recorded breeding during most visits in June, July and December, with up to 20 individuals present. Nests are built on *Sesbania* shrubs on the vegetated beach (Zone 2).

Sula dactylatra Masked Booby — Breeding in small numbers on all visits to the cay, with the greatest numbers (up to 100 nests) in December visits. Nests are on the ground, in the vegetated beach (Zone 2).

Sula leucogaster Brown Booby — Nesting on the ground, during all visits, in the vegetated beach (Zone 2). The number of nests varied from year to year, and there seemed to be no recognizable time of the year for the peak numbers, e.g. December 1976 — 22 nests, December 1982 — 300 nests, June 1980 — 535 nests, July 1982 — 256 nests.

Sterna fuscata Sooty Tern — Breeding in June and July, with up to 1 200 nests (July 1982). Nests are scrapes in the sand among the vegetation of Zones 2 and 4. Up to 3 000 birds nave been estimated. In December visits, few, if any, birds were present.

Sterna anaethetus Bridled Tern — Breeding in June 1980 (over 500 nests) and in December of 1976 and 1982 (less than 50 nests). During other visits there were only a few birds (less than 20) present. Nesting is mainly confined to the vegetated platforms (Zone 4), with some nesting in cliff holes (Zone 3) or under skeletonized turtle carapaces on the vegetated beach (Zone 2).

Sterna bergii Crested Tern — Breeding in March 1975 and December 1982 (56 nests) on the vegetated beach (Zone 2). At other visits, up to 20 birds present.

Anous stolidus Common Noddy — Breeding during all visits in June and July. Up to 300 nests or more have been estimated, with about 6 000 birds roosting on the night of 25 June 1980. Nests occur throughout the vegetated area (Zones 2, 4).

Factors Affecting Status

Silver Gulls, possibly Buff-banded Rails and Rufous Night Herons *Nycticorax caledonicus* predate unattended eggs and chicks. Because of the isolation of the cay human disturbance to, and predation of, breeding birds is probably slight. Over-flights by aircraft occur occasionally and cause some disturbance to nesting birds. Large numbers of Green Turtles *Chelonia mydas* would cause losses of and disturbance to nests, but this occurs mainly below the cliffline.

Pandora Cay is the only known breeding site, other than nearby Raine Island, of Red-footed and Masked Boobies in the northern Great Barrier Reef. It is an important seabird breeding island of the area.

Other Seabirds Recorded

Fregata ariel	Least Frigatebird
Phaethon rubricauda	Red-tailed Tropicbird
Larus novaehollandiae	Silver Gull
Sterna sumatrana	Black-naped Tern
Sterna bengalensis	Lesser Crested Tern
Anous minutus	Black Noddy

Banding

Sula leucogaster — 102 adults (June 80); 5 juveniles (Dec. 82); 158 chicks (June 81 — 43; July 82 — 91; Dec. 82 — 24).
Sula dactylatra — 19 chicks (June 81 — 1; Dec. 82 — 18).

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Acknowledgements

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