

## Bell Cay, Great Barrier Reef, Queensland

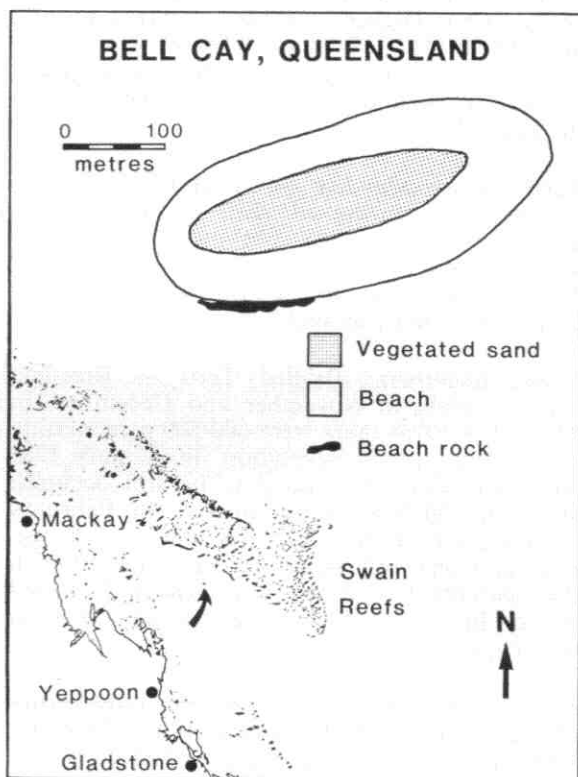
**Location:** 21°49' S., 151°15' E.; situated on an isolated reef (GBRMPA reef code 21-435) in the Capricorn Channel 25 kilometres west of the Swain and Pompey Reefs complex. The nearest mainland is 85 kilometres south-west at Perforated Point and the nearest town is 155 kilometres south-south-west at Yeppoon, Qld.

**Status:** Vacant Crown Land; Queensland Fauna Sanctuary.

**Description:** 1.5 ha; 280 m x 70 m, with an elevation of less than 2 m (measurements at high water). This sand cay is sited towards the central northern side of an oval-shaped platform reef 3 km in length. Changes in the area, position of the cay and vegetation over twenty years are described by Flood and Heatwole<sup>1</sup>. Roughly 60% of the island (above high water, 1984) still covers an area on the reef that was previously covered in 1964. The cay is densely covered with herbs and grasses except at the periphery. The dominant species is *Boerhavia diffusa* with *Thuarea involuta*, *Lepturus repens*, *Salsola kali* and *Cakile edentula*. The vines *Tribulus cistoides* and *Ipomea pes-caprae* are also present together with two stunted *Argusia argentea* bushes (<0.5 m).

**Landing:** Across the reef flat on the northern side.

**Ornithological History:** Limpus and Lyon<sup>2</sup> visited on 10 November 1976 and censused seven



species of seabirds all of which were breeding. Moverley<sup>3</sup> described winter bird populations in July 1983 and July 1984; he found the same species breeding as in 1976. T. A. Walker and/or

M. E. Jones surveyed the birds on 27 January 1985, 14 July 1985, 14-15 February 1986 and 6 April 1986.

#### Breeding Seabirds and Status

*Sula dactylatra* Masked Booby — Breeding occurs throughout the year. A few pairs (maximum seven) were nesting on all visits.

*Sula leucogaster* Brown Booby — Breeding occurs throughout the year. Up to five pairs were nesting during July and November surveys. January and February visits recorded eighteen and forty nesting pairs respectively.

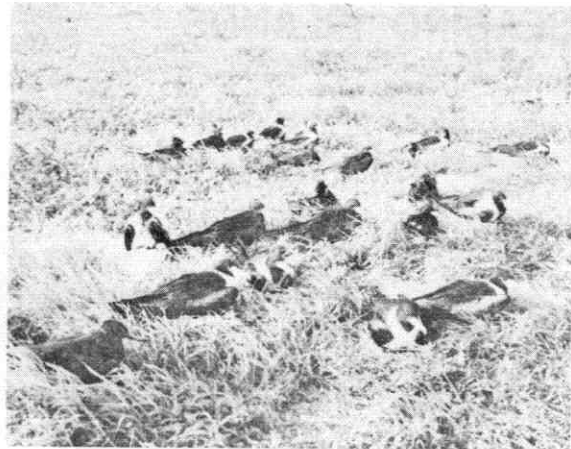
*Fregata ariel* Least Frigatebird — Breeding occurs throughout the year. Lowest numbers were found between November and February (4-46 pairs). Highest numbers occurred in July and April (111-187 pairs). There were either one or two colonies present with closely spaced nests of grass and foliage raised slightly above the ground.

*Larus novaehollandiae* Silver Gull — Nesting was recorded during all visits except for July 1983 and January 1985. The highest count was 45 birds and nine nests with eggs in February 1986. Isolated nests are hidden in the grass and there is no colony as such.

*Sterna anaethetus* Bridled Tern — Breeding occurs mainly in November and December. In November 1976<sup>2</sup> there were 300-500 pairs nesting over the cay in the vegetation. In January 1985 only two nests were found to be still occupied although 100 birds were present. In February 1986 most birds had left and only two fledglings and one unfledged bird were present with their parents. No birds were present in July 1983 but in July 1984 there were two pairs nesting with eggs<sup>3</sup>.

*Sterna fuscata* Sooty Tern — The only record of the presence of this species is for February 1986 when there were three unfledged young with their parents.

*Sterna bergii* Crested Tern — Breeding was observed during all surveys except in July 1985. The highest numbers of breeding pairs were in summer months with a maximum of 267 in



◦ *Least Frigatebirds nesting on Bell Cay.*

Photo: T. A. Walker

January 1985. Nesting is synchronous in packed colonies though two or more colonies of different ages may be present.

*Anous stolidus* Common Noddy — Breeding occurs throughout the year. Only a few pairs nested in July but November, January and February had about 400, 585 and 1145 nests respectively. The nests are widely spaced amongst the vegetation which provides a refuge for the chicks.

#### Factors Affecting Status

The surface is less than 2 m above high water and may be susceptible to over-wash and erosion by the sea during storms. Nesting birds also suffer disturbance from nesting sea turtles. Gulls predate unattended eggs of the other species and this is facilitated by human presence on the island. One quarter of the nesting frigatebirds deserted their eggs when people landed on the beach in February 1986. Fortunately the cay is infrequently visited because of its isolation and because of its poor anchorage for visiting boats. Anecdotal information from a local fisherman suggests that the frigatebirds moved their colony from Frigate Cay to Bell Cay sometime in the 1960's. Having been disturbed they probably sought a less frequented cay on which to breed. Bell Cay has the only frigatebird colony and the



- Crested Terns on and over one of their colonies on the cay

Photo: T. A. Walker

largest Common Noddy colony on the southern half of the Great Barrier Reef.

#### Other Species Recorded

<i>Phalacrocorax carbo</i>	Great Cormorant
<i>Sterna dougallii</i>	Roseate Tern
<i>Sterna sumatrana</i>	Black-naped Tern
<i>Sterna bengalensis</i>	Lesser Crested Tern

#### Banding

Commenced 1985.

*Sula dactylatra* — 31 adults, 3 juveniles, 3 chicks.

*Sula leucogaster* — 88 adults, 16 juveniles, 25 chicks.

*Fregata ariel* — 9 adults, 41 chicks.

#### Bibliography

1. Flood, P. G. and H. Heatwole (in press). Coral cay instability and species turnover of plants at Swain Reefs, southern Great Barrier Reef, Australia. *J. Coastal Res.*
2. Limpus, C. J. and B. J. Lyon (1981). Seabirds breeding on the Swain Reefs, Queensland. *Corella* 5: 101-105.
3. Moverley, J. H. (1985). Winter bird observations for cays in the southern section of the Swain Reefs, Queensland. *Sunbird* 15: 73-79.

#### Acknowledgements

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