

## SEABIRD ISLANDS

No. 249

## Sterna Island, Kimberley Region, Western Australia

**Location:** 14°06'468"S, 125°44'887"E in the Montesquieu Group of Islands to the south of Oliver Island, in the NW sector of Admiralty Gulf in the Kimberley region of Western Australia. The group of islands was named by Commander Thomas Nicolas Baudin, during the French Scientific Expedition to Australia in 1801<sup>3</sup>.

**Status:** Unallocated Crown land. Advocated a biological survey of the Montesquieu and adjacent islands to determine their nature conservation value<sup>2</sup>. However, on the basis of the current discovery it is recommended that the Department of Conservation and Land Management (CALM) pursues changing the status of the Montesquieu Islands from unallocated Crown land to Nature Reserve.

The island was unnamed at the time of our visit in June 2003. Consequently a proposal was submitted to the Western Australian Geographic Names Committee of the Department of Land Information for it to be named Sterna Island. This was approved as of 10 May 2004.

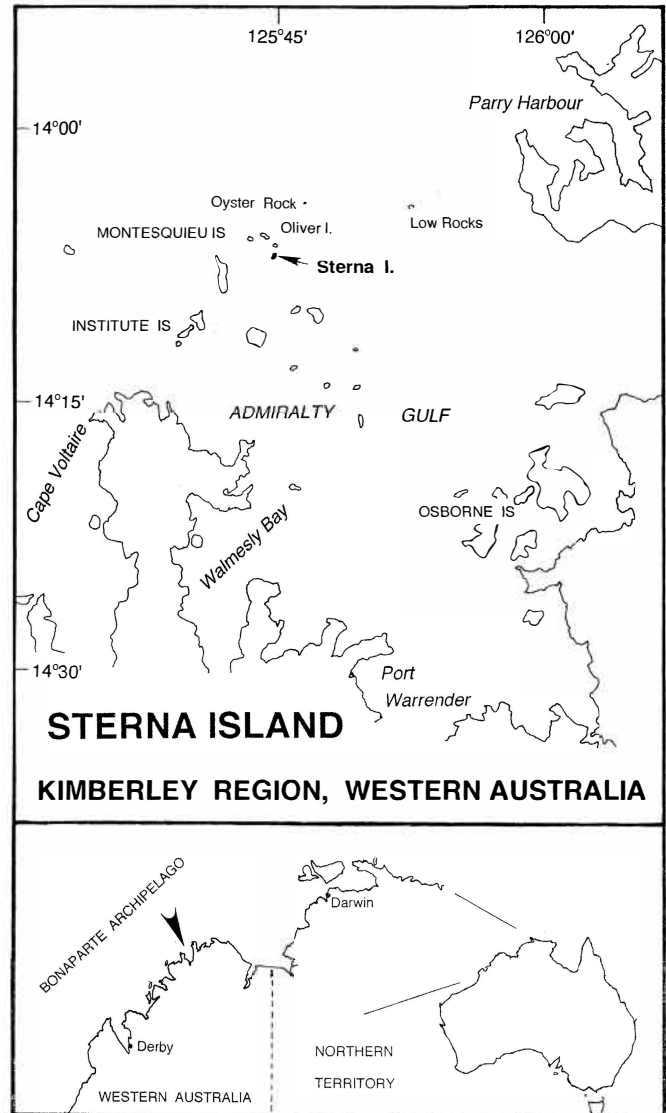
**Description:** Sterna Island is about six hectares and well vegetated over about four hectares. About two hectares of mainly unvegetated land on the western side is a seabird breeding area, principally on horizontal sandstone ledges and terraces of King Leopold Sandstone<sup>1</sup> with minor patches of lateritic gravel and sand. It rises about nine metres above the high tide mark.

The vegetation over the island is predominantly hummock grassland of *Triodia microstachya* interspersed with low domed shrubs of *Acacia tumida* in the central area. There are occasional stunted shrubs of *Ficus opposita* (sandpaper fig), *F. virens* (banyan), *Capparis spinosa* and *C. sepiaria* (capers), as well as *Vitex rotundifolia*. Creepers include *Ipomoea pes-caprae* (beach morning glory), *Canavalia rosea* (beach bean), *Cynanchum carnosum*, *Xenostegia tridentata*, *Sarcostemma* (a leafless succulent), *Sesuvium portulacastrum* and *Tinospora smilacina* (snake vine). Herbs included are *Cleome viscosa* (tick weed), *Buchnera*, *Portulaca*, *Spermacoce* and *Cullen badocanum*. Other grasses noted, included *Spinifex longifolius* as well as several unidentified annuals.

**Landing:** At the southern end there is a suitable anchorage opposite at 14°06'58"S, 125°44'77"E for a boat of around 20 metres.

**Ornithological History:** R. E. Johnston and G. Lodge sailed close to the island on 30 August 2002 and recorded the following: flock of 150 Roseate Terns resting on the rock, also flocks of 100, 80 and 30 feeding in shallow water just offshore; Reef Heron, three dark phase and one white phase; Sooty Oystercatcher, two on beach; White-bellied Sea-eagle, one; and Osprey, one.

On 8 June 2003, while at 14°07'S, 125°38'E on a course from East Montalivet to Bird Island and Low Rocks (4 ha 'A' Class Nature Reserve No 33832 — 14°04'S 125°52'E), we came upon numerous flocks (in groups of between 20



and 50) of Roseate Tern, *Sterna dougallii*, feeding on small schools of bait fish. Some were carrying fish away in their beaks. Roseate Terns, intermixed with a few Crested Terns, became more common as we progressed, but were not flying in the direction of Bird Island or Low Rocks. On further investigation Sterna Island appeared to be their destination. This was confirmed from some distance, as we could see large numbers of birds rising into the air. As we approached we could see the birds were being harassed by a Wedge-tailed Eagle *Aquila audax*. We were ashore on Sterna Island for about one hour. Indications were that it had been a major seabird breeding island for some time prior to our visit. This was confirmed after finding remains of faded and bleached eggshell (at least two years old) in the nesting areas. As far as the authors are aware, there has been no record of seabirds breeding on the island prior to our visit on 8 June 2003.

K. Coate and C. Done revisited the island on 3 May 2004 and found all three species of tern breeding over a slightly wider area than the previous year.

### Breeding Seabirds and Status

*Sterna bergii* Crested Tern — On 8 June 2003 the estimated total was at least 2 100. There were two main breeding areas (about 1 200 in one and 900 in the other), inside the Roseate Tern breeding colony. Nests were minimal scrapes in the ground, or on top of sandstone with no attempt at making a nest. They contained either one to two eggs (freshly laid to well advanced) or newly hatched chicks. There was a large number of small to medium size runners dispersed within and around the colonies. In one area Crested Tern had expanded their nesting into the Roseate Tern breeding area and there was a large number of abandoned eggs and dead, recently hatched Roseate Tern chicks. One medium size Crested Tern chick regurgitated a 13 centimetre juvenile Long-jawed Mackerel *Rastrelliger kanagurta*. B. Hutchins, Curator of Fish at the Western Australian Museum informed us that these fish grow to about 40 centimetres and form extensive surface schools in northern waters.

On 3 May 2004, breeding was still in early stages and the number of birds was not as high as in the previous year.

*Sterna bengalensis* Lesser Crested Tern — On 8 June 2003, a total of about 250 were counted on eggs in two groups (180 in one and 50 in the other) nesting within the Crested Tern breeding area. There were about 20 others dispersed amongst the Crested Terns on the fringe of the main breeding area.

On 3 May 2004, small groups were sitting on eggs within the Crested Tern and Roseate Tern colony. Breeding still appeared to be in early stages with single birds in breeding plumage.

*Sterna dougallii* Roseate Tern — On 8 June 2003, the estimated total was at least 4 000. Breeding was over a wide area surrounding the Crested Tern breeding area. Egg laying was at all stages, though the majority appeared to be in an advanced state of incubation with many newly hatched chicks, a number of which were dead. Most eggs were in hardly noticeable scrapes in the ground, while others were placed on sandstone slabs or ledges with no attempt at making a nest. However, on the fringes of their breeding areas where there was more vegetation, some nests were placed on small clumps of hummock grass *Triodia* sp. and were well shaped. The above mentioned breeding area taken over by Crested Terns, contained many recently hatched dead Roseate Tern chicks and abandoned eggs. Three dead adult birds found under a ledge of sandstone and several dead newly hatched chicks were brought back and lodged with the Western Australian Museum.

On 3 May 2004, there was little variation in numbers from the previous year, but breeding had not fully begun. Most nests on the perimeter of the breeding colony contained either one or two freshly laid eggs, with no sign of chicks. Many pairs were going through courtship ritual. Others were observed copulating, some for between two and four minutes. The breasts of some of these birds were very colourful, ranging from rosy pink to almost red.

### Factors Affecting Status

There was evidence of raptor predation, as remains (representing about 20 individuals) of feathers and picked bones of adult Crested and Roseate Terns were on the perimeters of the breeding colonies. A Wedge-tailed Eagle was perched on nearby shrubbery on our arrival, and a large female Brown Goshawk *Accipiter fasciatus* flew low overhead during our visit. White-bellied Sea-eagle *Haliaeetus leucogaster* are in the area and two were observed harassing the colony on 3 May 2004. On both visits we noticed a number of recently opened eggs with fresh yolk still attached, in the Roseate Tern colony. This may have occurred from predation by reptiles, Reef Egret *Egretta sacra* or Silver Gull *Larus novaehollandiae*. There were 38 Silver Gulls on the beach or rocks of Sterna Island in June 2003 and 12 in May 2004, but they were not attracted to the breeding area during our visit. An unidentified lizard was heard in the bushes. Cruise boats are becoming more frequent along the Kimberley coast during the winter seabird breeding season, and interference by visitors could become a factor if correct procedures are not adhered to when observing breeding seabird colonies.

It is likely that part of the former seabird breeding colony on Low Rocks Island Nature Reserve (12–13 kms NE of Sterna Island), which disappeared about four years ago, has relocated to Sterna Island. On 3 May 1997, two of us (Coate and Done) as lecturers aboard the *Coral Princess* visited Low Rocks and recorded about 4 000 Roseate Tern breeding. In addition there were about 700 Crested Terns, 350 Lesser Crested Terns, 500 Pied Cormorants *Phalacrocorax varius* and 25 Bridled Terns *Sterna anaethetus* with large young. On 8 June 2003, although we did not visit Oyster Rock (5–6 kms from Sterna Island) we could see what appeared to be guano on it, and suspected the Pied Cormorants have relocated to it from Low Rocks.

Possible reasons for the breeding colonies moving from Low Rocks are:-

- (1) *Excessive vegetation.* On 3 May 1997, there was a large amount of vegetation in and around the breeding colonies, other than that of the Pied Cormorants. After our visit to Sterna Island on 8 June 2003, we again visited Low Rocks and found a dense coverage of grasses and creepers, consisting mainly of *Triodia* sp., *Sorghum* sp., *Ipomoea pes-caprae* and *Canavalia rosea*, over the former breeding areas. The height and density of the vegetation were unsuitable to terns, which generally prefer less cluttered situations. The vigorous growth may have been stimulated by a build-up in nutrients, such as guano.
- (2) *Predation by raptors.* For some years a pair of White-bellied Sea-eagle was resident on Low Rocks, and built a nest overlooking the breeding colonies. Their harassment may have eventually induced the terns to move away. The sea-eagles have since also abandoned the island.
- (3) *Predation by reptiles.* Although only skins are present on the island they are probably too small in size to be a threat. However, for a number of years prior to the birds abandonment of Low Rocks, there was a 3–4 metre long salt water crocodile resident at the island,

and it would have been possible for it to access the breeding colonies, although with some difficulty. There was no indication that the crocodile was still present on 8 June 2003.

(4) *Human interference*. Visits by cruise boats allowing passengers ashore to view the breeding colonies, although infrequent, occurred for several years before the colonies relocated. As far as we are aware, these were conducted in a responsible manner and would have been unlikely to cause the birds to move.

Whilst not discounting the possible effects sea-eagles and the crocodile may have had on the colonies, we feel the most likely cause for the tern relocation from Low Rocks to Sterna Island is the excessive build up of vegetation over the breeding areas. If this build up were to lessen over the years or be reduced, for example by fire, the breeding colonies could return.

It is possible, that the Pied Cormorants found predation by White-bellied Sea-eagles too much, inducing them to leave, once the terns had departed.

#### Other Seabirds Recorded

<i>Egretta sacra</i>	Eastern Reef Egret — one white phase on 8 June 2003; 2 on 3 May 2004
<i>Butorides striatus</i>	Mangrove Heron — one on 3 May 2004
<i>Larus novaehollandiae</i>	Silver Gull — 38 on 8 June 2003; 12 on 3 May 2004.
<i>Sterna fuscata</i>	Sooty Tern — one bird flew up from the breeding area from amongst Roseate Terns.

#### Banding

Nil

#### Bibliography

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3. Marchant, L. R. (1982). 'France Australe' P.342. (Artlook Books: Perth.)

#### Acknowledgments

These records were made possible by members of a Landscape research expedition along the Kimberley coast in June 2003 conducted by the Department of Conservation and Land Management (CALM). We would like to thank George Greaves, skipper of *MV Flying Fish V*, and his crew for the professional manner in which they got us to and from the various sites. We would also like to thank Zegrahm Expeditions of Seattle USA for making it possible for two of us to visit the island in May 2004, Barry Hutchins for identifying the fish from Sterna Island, and Ron Johnston of the Western Australian Museum for constructive comments.

Date compiled: 22 May 2004

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