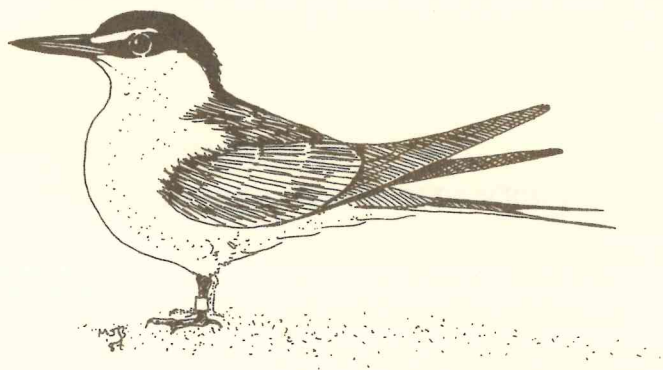


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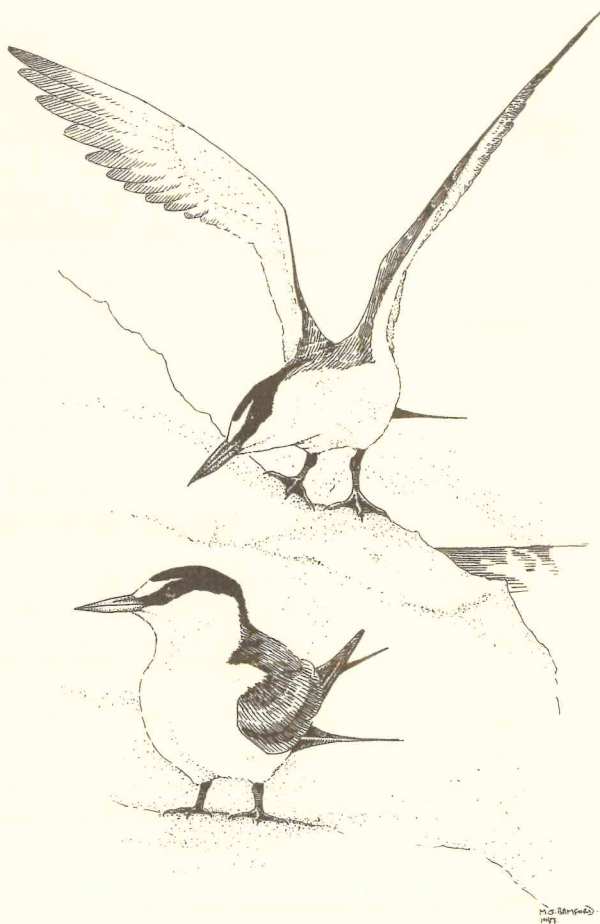
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Bands found on dead terns provide valuable information on mortality and movements in the population. These bands should be returned to the nearest C.A.L.M. office or to the Australian National Parks and Wildlife Service (ANPWS) Canberra.



# THE SEABIRDS OF PENGUIN ISLAND

Western Australia



Prepared for the Department of Conservation and  
Land Management by J.N. Dunlop and M.J.  
Bamford.

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## Bridled Tern

## THE BRIDLED TERN

The Bridled Tern *Sterna anaethetus* is a member of a group of dark plumaged, tropical marine terns; its closest relatives being the pantropical Sooty Tern *S. fuscata* and the Spectacled Tern *S. lunata* of the central and eastern Pacific. Breeding colonies of Bridled Terns occur on oceanic and continental islands in the tropical and sub-tropical Atlantic, Indian and western Pacific Oceans and in the Indo-Pacific region.

On the Australian coastline the Bridled Tern's breeding distribution extends southwards to Robe in South Australia along the western side but only to the southern end of the Barrier Reef (Lady Elliot Island) in the east. An expansion of range has been observed in Western Australia during the period of ornithological history. In the 1840's the species was not known to nest south of the Abrolhos Islands. By 1920 the species was nesting in Shoalwater Bay and in the early 1940's there were colonies on Shag, Bird and Seal Islands but not on Penguin Island as there is today (over 1,000 breeding pairs). In 1955 the species was observed off Cape Leeuwin and had reached western South Australia by 1968.

## BREEDING COLONIES

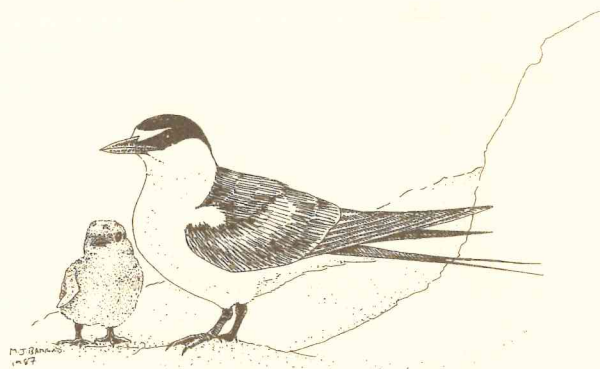
Bridled Terns nest in large, loose colonies with several metres between breeding pairs. On Penguin Island they occupy the cliffs on the northern and southern ends and much of the northern plateau. The nest scrapes are usually concealed in crevices, or under rocks or low, dense bushes.

Intruders to the colony are harassed in a way which would distract most predators searching for the nests. On Penguin Island marauding Silver Gulls are frequently pursued by nesting Bridled Terns. This anti-predator behaviour contrasts with that of Crested Terns which have conspicuous nests in densely packed, highly synchronous colonies.

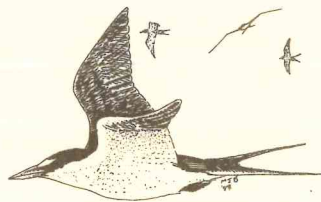
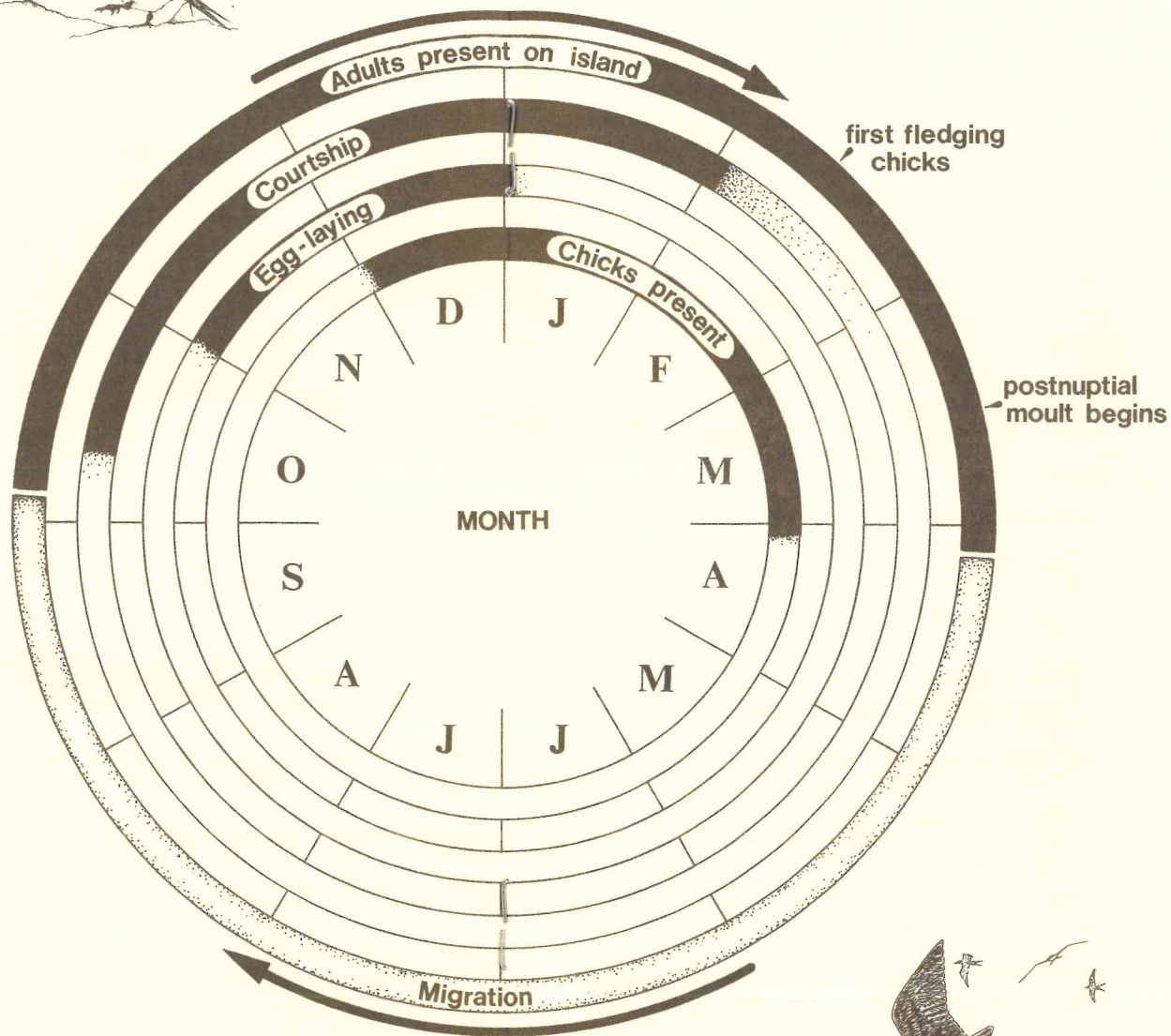
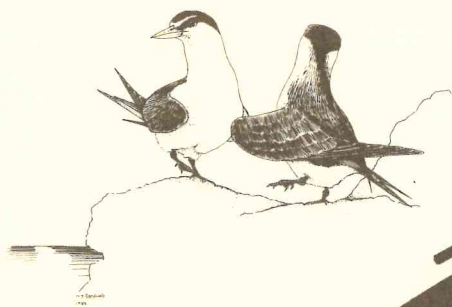
## BREEDING CYCLE

At its breeding colonies on continental islands the Bridled Tern is an offshore feeder, catching most of its prey (tiny fish and insects) over the continental shelf. As a tropical species it also feeds over relatively unproductive water masses, and can only snatch its prey from the sea surface. Usually, only enough food could be gathered to rear one chick at a time.

Invariably a single egg is laid in an unlined scrape. This may be replaced, within about a fortnight, if it is lost early in the breeding season. Incubation takes about 30 days and at hatching the chick is covered in sooty grey down. Although mobile within a week the chick will not stray far from the nest site. The young approach adult weight within about 6 weeks but cannot fledge until they are 8 or 9 weeks old.



In south-western Australia Bridled Terns are strictly migratory, arriving on their breeding grounds in early October. Initially, they settle in the colony areas only at night but, by the middle of October, many are present on their nesting territories until mid-morning, returning again at dusk. The first eggs are laid in early November. Laying, including the replacement of lost eggs, continues until early January. The earliest hatched young fledge around the middle of February but probably don't leave the island until the migratory exodus in early April.

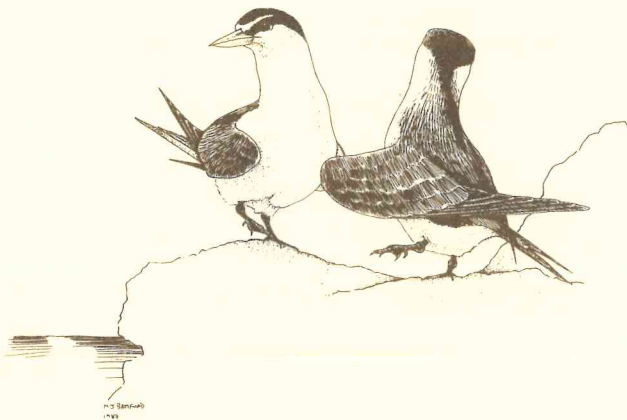


## MIGRATION

Mass movements of Bridled Terns northwards along the west coast have been observed in mid-April shortly after the colonies are vacated. Entire breeding populations may move together in a migratory flock. Similar movements have been observed off the west coast of Sri Lanka and are thought to represent the post-breeding migration of terns nesting in the north-western Indian Ocean. Observations and banding recoveries suggest that Bridled Terns from south-western Australia 'winter' in the Indo-Pacific east of Malaysia. Two individuals banded as young by R.E. Johnstone on North Fisherman Island were recovered in the Celebes Sea area during their second summers. This also suggests that immature terns do not join in the southward breeding migration.

## SOCIAL BEHAVIOUR

As in most terns courtship in the Bridled Tern involves a combination of aerial and ground displays. Paired, zig-zag pursuit flights occur early in the breeding season. Near the nest sites pairs 'parade', circling one another, moving with short high steps, and with folded wings held away from the body and trailed. The cap plumage is sleeked and the head averted, to hide the intimidatory line between eye and bill accentuated by the head pattern. These gestures of appeasement contrast with the postures observed in territorial encounters in which the protagonists face each other, cap feathers erect and bills agape often 'braying' loudly with tongues vibrating visibly.



Courtship feeding also occurs on open ground near the nest site. The male feeds the female by regurgitating food from the crop usually onto the ground. Copulation frequently takes place after courtship feeding.

'Dreads' or 'panic' flights occur where many of the birds in a section of the colony will suddenly fly seawards usually swooping low over the water. This social flight is apparently induced by a single individual suddenly leaving its station and calling "mer-er-er". The function of these 'dreads' is not really understood but it may serve to synchronise the breeding cycles of neighbouring individuals.

## CONSERVATION AND RESEARCH

Bridled Terns conceal their nests and are therefore less susceptible than some other terns to the combination of human disturbance and gull predation. They are, however, typical of pelagic seabirds in being relatively tame and easily approached and killed. Although this has happened on Penguin Island it is more likely to affect 'wintering' birds as terns are frequently eaten in South-East Asia. Bridled Terns can break their wings when startled from next crevices or bushes. Over 800 pairs nest in the bird sanctuary area at the northern end of the Island. There is no unauthorized public access to this area.

A banding programme is currently being undertaken to investigate the population structure and migration of Bridled Terns on Penguin Island. Since the locally breeding populations almost certainly cross a number of political boundaries on migration, their conservation will depend on international cooperation and may invoke conventions such as the Japan-Australia and China-Australia Migratory Birds Agreements.