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Flora & Fauna Guarantee Action Statement

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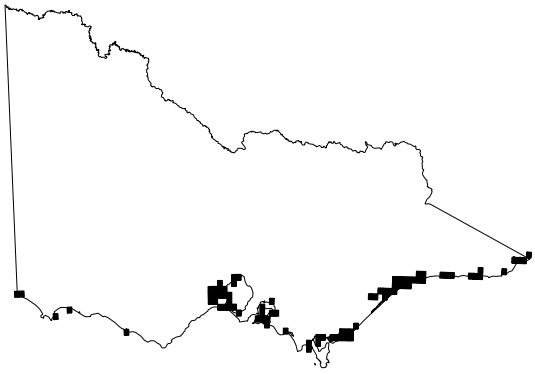
Victoria
The Place To Be

Little Tern

Sterna albifrons sinensis

Little Tern *(Sterna albifrons sinensis)*



Distribution in Victoria (DSE 2002)

Description and Distribution

The Little Tern (*Sterna albifrons sinensis*) is the smallest Australian representative of the family Laridae (Gulls and Terns) with a wingspan of 20-23 cm. The plumage of the upper parts is a uniform light blue-grey. The underparts are white. In breeding plumage adult Little Terns are characterised by a black crown and nape, black lores and a yellow bill with a black tip. In non-breeding plumage the bill is dark grey to black, the crown is predominantly white speckled with black and the nape dark grey to black. Non-breeding birds also have a dark carpal (shoulder) bar. The lores are white. Sexes are similar. A closely related species which often shares the same breeding habitat is the Fairy Tern (S. terna nereis). The Fairy Tern lacks the black lores and carpal bar, is a paler grey on the back, has a brighter yellow bill, and is slightly larger.

The breeding distribution of the Little Tern ranges from the coast of Spencer Gulf, South Australia and Tasmania and from eastern Victoria through New South Wales and Queensland to eastern Northern Territory. Other populations breed in east Asia as far north as Japan and as far west as India. The current breeding distribution is more fragmented within the range due to a loss of many sites (RAOU Atlas records). Non-breeding migrants, believed to be from Asia, are also found down the north-western Australian coast as far south as Shark Bay (Garnett 1992). Little Tern nest on sandy or shingle beaches just above the high water mark, usually near the entrance to an estuary or on islands inside the estuary.

Most Little Terns do not stay in Victoria over winter, but return in late September each year, presumably from the tropics. Little Tern eggs are light brown to grey, with well marked spots and blotches of varying shades of brown and purple. They are laid in clutches of two or three in a simple scrape in the shellgrit that affords excellent camouflage. Egg laying begins in Victoria in late October each year. The egg laying period of a colony (especially a large one, >100 clutches) often lasts for several weeks, with about three clutches laid each day and varies

from one per 400 m on ocean beaches (Hill & Montague 1985) to one per 40 m on islands (Reside *et al.* 1989). Little Terns feed on a variety of small species of bait fishes such as Anchovies, Pilchards, Hardyhead and Blue Sprat as well as molluscs and prawns. An estimated 400 adult Little Tern (200 pairs) nested in East Gippsland during the 1992-93 breeding season. All these sites were on public land.

Conservation Status

Current Status

CONCOM	Endangered
CNR	Endangered
SAC	Threatened
Endangered Species Protection Act 1992	Endangered

The Little Tern is listed under Schedule 2 of the *Flora and Fauna Guarantee Act* 1988.
A recent IUCN Action Plan for Australian Birds lists the Little Tern as vulnerable (popn. <500). It is considered that the Endangered category is not warranted because distribution is not fragmented, the species has not declined at >5% per year for past five years, and it is not subject to catastrophic crashes (Garnett 1992).

Reasons for Conservation Status

Concern about the status of the Little Tern breeding in Victoria was first raised by Vincent (1978). She considered that the breeding success of East Gippsland sites investigated in her 1977-1980 study was very low (Vincent 1980). Vincent stated that '...unless disturbance factors are minimised...there is every likelihood that the species cannot retain its breeding status on the Victorian list'. Recent studies in NSW suggest that the Little Tern has declined from 650 breeding individuals in the 1950s to less than 100 breeding pairs (P. Smith pers. comm. 1992).
The Little Tern was included on the Official List of Australian Endangered Vertebrate Fauna in 1987. In supporting the inclusion Ahern (1986) stated '...the breeding status of the species (in Victoria) remains tenuous despite improved management techniques...' The species was ranked fourth in priority for Victorian birds (Ahern *et al.* 1*985)* and is specifically mentioned as having a high priority for management in the State Conservation Strategy 1987.
Human disturbance, predation by introduced animals and natural events (storms and floods) are generally accepted as the major reasons for poor breeding success in Victoria, New South Wales and Tasmania (Vincent 1983; Clancy 1987 & Napier 1972). Encroaching vegetation, predation by native animals and deterioration of feeding habitat are also considered to be important (Hill & Montague 1985).
In its final recommendations, the SAC (1991) determined that the Little Tern is:

- significantly prone to future threats which are likely to result in extinction.
- very rare in terms of abundance and distribution.

Major Conservation Objective

To ensure the long-term survival of the Little Tern in Victoria through the protection and establishment of nesting sites, particularly on islands throughout East Gippsland.
To secure self sustaining populations of Little Terns by increasing numbers to 1500-2000 within the next five years. A fledgling recruitment rate of between 0.5 and 1.0 per pair should be maintained.

Management Issues

Ecological Issues Specific to the Taxon

In Victoria Little Terns nest on beaches and islands associated with estuaries where the substrate is sandy and the vegetation is low and sparse. Such conditions are created by the movement of sand at the ocean entrances to inlets, on ocean beaches, unstable islands in estuaries and more recently by deposits of dredge spoil. Little Tern seem to prefer to nest on exposed sand or shingle, e.g. recently deposited dredge spoil. The nests are usually a shallow depression in sand or shingle and are often sited just above highwater mark and close to driftwood or other flotsam (Beruldson 1980). Nests may be flooded at high tide during stormy weather.
Nest density is relatively low compared to other terns (Massey 1977). There is often little evidence of breeding Little Terns so the unwary beachgoer can unintentionally disrupt the colony. Little Tern chicks are active within a few hours of hatching and for the first five days are extremely vulnerable to predators such as Silver Gull (*Larus novaehollandiae*), Ravens (*Corvus* spp.) and some birds of prey. Because parent birds try to lead their offspring towards cover, disturbance to the colony by humans or predators can separate chicks from their parents so that they are vulnerable to predation, exposure and starvation. Human disturbance to post-breeding flocks of Little Tern and their fledglings at major roosting sites in the Gippsland Lakes may be affecting the survival of the inexperienced juvenile birds.
The Red Fox (*Vulpes vulpes*) can also cause nest abandonment. At a large colony a marauding fox may only prey upon a few nests, but the intrusion causes a breakdown in the cohesion of the colony . At Crescent Island in the Gippsland Lakes in 1987 a fox caused the collapse of a breeding colony. The birds did not nest there again for four years.
Increases in the commercial exploitation of the smaller fish species, which are prey items, within the estuaries may affect the breeding success or nest site selection of the terns. Pollution of fishing grounds may poison adults and affect breeding success through sub-lethal effects such as egg mortality, or cause a decline in the fish species preyed upon. Eutrophication can lead to localised fish kills reducing the availability of food during the critical period.
Most Little Terns leave East Gippsland in the winter. Individuals banded in Victoria have been resighted in NSW, which suggests a northwards migration. A small flock has been seen overwintering by Lake Wellington, Gippsland Lakes since 1990 (J. Reside pers. comm.).
The taxonomy of the Little Tern is poorly understood. A non-breeding population of up to 400 Little Tern arrive in East Gippsland each year presumably from northern breeding grounds. They have little association with the breeding colonies, spending most of the summer migrating between the

eastern end of the Gippsland Lakes and Corner Inlet in South Gippsland. It is possible that these two populations represent two subspecies (Hill 1990).
The adult population of Little Tern appears to be increasing in Victoria. A census in 1990 recorded the largest known population of 320 and similar counts in December 1992 have further increased this figure to around 400 adult birds. This population now significantly exceeds the estimated NSW population of under 200 birds, which appears to be still in decline (P. Smith pers. comm.). Little Terns have bred successfully for five out of the last six years, producing approximately 900 fledglings. Consequently the management effort must be planned to manage additional numbers of Little Tern and the breeding sites they may occupy. The Victorian population of Little Tern may now be the most significant in eastern Australia.

Wider Conservation Issues

The measures taken to protect the Little Tern in Victoria over the last 12 years have had significant benefits for other species of shorebirds, in particular Hooded Plover (*Charadrius rubricollis*), Pied Oystercatcher (*Haematopus longirostris*), Red-capped Plover (*Charadrius ruficapillus*) and the Fairy Tern (*Sterna nereis*). Maintenance of habitat in East Gippsland led to an assumed major shift in the breeding distribution of Fairy Tern from traditional sites in Port Phillip Bay that had become overvegetated (C. Minton pers. comm.).

Social and Economic Issues

Little Tern nesting sites are near popular summer recreational areas, making it difficult to isolate the birds. To prohibit the movement of people into areas where the Little Terns nest a zone is needed around active breeding sites. Most beachgoers respect the need to protect the Little Tern and it enhances their recreational experience. The prohibited area may, however, prevent access to some bait-fishing sites.
The Little Tern management program involves a large number of groups and individuals from the general public. Local conservation groups assist in the monitoring and research programs. The Australia Trust for Conservation Volunteers (ATCV) has conducted Project Ternwatch for five out of the last six years. All these people have the opportunity to enhance their ecological knowledge and assist in the management of a threatened species. The intensive media campaign conducted by CNR provides an educational experience for the local community.
The poisoning of foxes as part of the predator control program has met with some opposition near urban or popular recreational areas. Most of the concerns relate to the use of poison baits as a control method.
Unleashed domestic dogs roaming beaches are a significant threat to breeding Little Terns. Dogs are now completely banned from one beach in East Gippsland, principally to protect the Little Tern. An educational program needs to be initiated to help control unrestrained dog-walking.
Further tourist, residential and industrial development around estuaries, if inappropriate, will increase the level of disturbance to Little Tern feeding grounds.
Port of Melbourne Authority dredging may have a significant effect on the selection of nesting sites. Adding spoil to existing sites may decrease their attractiveness by burying the shelly sand or, alternatively, the creation of fresh spoil dumps may induce the birds to nest in undesirable locations. This should be monitored.

Management Action

Previous Management Action

In Victoria the Little Tern has been intensively managed since 1979, with an array of techniques designed to reduce the impact of human-induced threats and to control natural factors affecting breeding success. The ability to attract the Little Terns to managed nesting sites has been a major factor in the successes of the last six years. The management strategy has evolved gradually as our understanding of the birds' breeding biology improves.

- Since the inclusion of the Little Tern on the Council of Conservation Ministers (CONCOM) list of Commonwealth Endangered Fauna in 1987 (Ahern 1986) the Australian National Parks and Wildlife Service has provided funding for the development of a national strategy (Hill 1990) and for Jonathan Starks, RAOUto conduct a national census.
- Since 1979 a warden has been appointed to protect the breeding colonies of the Little Tern. Employed from October to March, the warden is responsible for maintaining the protective fencing and signposting at each colony, monitoring the Little Tern populations at breeding and non-breeding sites, keeping the public away from the breeding sites and informing the community about the plight of the species.
- Target-specific poisoning of introduced predators is undertaken prior to the breeding season. The Red Fox and feral Dog are the two target species in East Gippsland.
- Two types of protective fencing are used around Little Tern colonies. Fences are erected at preferred sites before the Little Tern arrive. An 8-strand electrified fence controls predators. Outside the electric fence is a guidance fence to keep the public at a safe distance from nesting birds. The electric fence is erected at the 'flushing' distance and the guidance fence at the 'settling' distance. Signs are placed around colonies at major access points and to protect post-breeding roosts.
- Coloured flags are used successfully to deter birds from undesirable nesting sites that are prone to flooding, high levels of predation or disturbance. Flagging the Lakes Entrance ocean beach site led to the establishment of the highly productive Rigby Island colony.
- Nesting sites preferred by management, such as Rigby Island and Crescent Island, are cleared of vegetation once or twice a year to prevent them becoming unattractive as breeding sites. More than 10% vegetation cover is considered unsuitable (Hill 1990). Heavy growth can lead

to windblown sand becoming trapped and shellgrit beds being covered.

- Artificial wooden chick shelters have been installed at sites devoid of vegetation. Shelters are placed amongst active nests immediately prior to hatching.
- Volunteers, especially those from Project Ternwatch, run by the Australian Trust for Conservation Volunteers (ATCV), have monitored populations and movements at the Rigby Island and Lake Tyers colonies for five out of the last six years. They have protected the breeding birds during the busy Christmas holiday season by having small teams of volunteers on site during the daylight hours. Project Ternwatch teams were also sent to Tamboon Inlet in 1990 where they acted as Wardens. Prior to 1987 individual people offered their services and spent time on the beaches near the Little Tern colonies.
- Since 1988 CNR and the Victorian Wader Study Group have jointly conducted a banding and colour-marking program. To date 281 Little Terns have been individually colour banded. From investigation of moult patterns it appears that two races of *S. albifrons* have been banded.
- The Royal Australasian Ornithological Union conducted a national census of Little Tern in Australia in 1989, examining northern Australia in winter and the east coast in summer. The winter census recorded a total of 553 (355 in breeding plumage). The summer census recorded a total of 4987, comprising 509 in breeding plumage, 3455 in non breeding plumage, 1004 of plumage unknown and 19 juveniles. The census recorded 237 nests and 17 chicks out of the nest (Starks 1990).
- A fortnightly census is conducted of all known breeding and roosting sites in East Gippsland.
- A national strategy for the conservation of the Little Tern was prepared by a consultant in 1991 (Hill 1991). It was funded under the States Cooperative Assistance Scheme by the Australian National Parks and Wildlife Service.
- Genetic comparisons between breeding populations in the Gulf of Carpentaria, southern Australia and Japan are being conducted by the South Australian Museum for the Conservation Commission of the Northern Territory with funding from a States Assistance Grant from the Australian National Parks and Wildlife Service (Garnett 1992).
- Sand dredging to create new breeding sites for the Little Tern has been undertaken since 1987. In the winter of 1987 the Port of Melbourne Authority dumped dredge spoil on the Rigby Island sandspit. This significantly raised the level of the sandspit and increased the available nesting area. Little Tern successfully nested at this site during the succeeding spring and summer. A further 5000 to 6000 m3 was added in 1988, partially filling a flood-prone depression and further enhancing the site for the Little Tern.

In 1989 and 1990 the PMA instigated works that dramatically altered the profile of the sandspit and created large mounds of unstable sand. The shellgrit beds established by the previous dredging were covered. Breeding success at the site was significantly lower in the following two seasons (Owen 1990, 1991). At CNR's request, the PMA also created an island, known as Albifrons Island, north-west of the Steamer Landing jetty at Ocean Grange. This was part of a dredging program to clear the navigation channels. Little Tern nested on this island almost immediately dredging stopped. Initiative funding allowed CNR to raise a section of the existing low-lying islands within the Lake Tyers estuary in 1992. This island was also used as a breeding site the following season.

- An intensive community education and extension campaign has been conducted over the last six years, primarily in the local area. A regular 'Ternwatch' column has featured in the local newspapers. A colour brochure and poster have been produced. In February 1993 the Bairnsdale and District Environment Group organised the Clearwater Festival to highlight the need for improved protection of the Gippsland Lakes waterways. The logo for the festival was the Little Tern and one of the main attractions was a performance conducted by the local Koorie Community, schools and other community groups titled 'One Good Tern Deserves Another'.
- Regular briefing and debriefing sessions combining staff training are held within Gippsland area.
- A Little Tern Task Force was established in 1992 to oversee the management of the species in East Gippsland and to provide a more coordinated approach. Staff from across Gippsland Area as well as volunteers are represented.

Intended Management Action

These actions will be undertaken by the Gippsland Area CNR:

- Continue all the current management strategies of protection, fencing, signposting and predation control while investigating more efficient ways to manage the breeding colonies.
- Within 10 years, aim to establish secure breeding sites preferably on islands at Sydenham Inlet, Tamboon Inlet, Goodwin Sands, Mallacoota Inlet and Corner Inlet.
- Actively manage these sites to ensure that the Little Terns move to them as soon as possible.
- Determine the critical habitat of the Little Tern. Delineating the boundaries of the critical habitat when the environment is constantly changing due to natural erosion and tidal fluctuations is a problem to be overcome.
- Put into action contingency plans to deal with the new suite of predators that appear to be affecting the viability of Little Tern breeding colonies. In particular, specific plans to protect the Little Tern from Ravens, Peregrine Falcons (*Falco peregrinus*) and the Australian Hobby (*Falco longipennis*).
- Develop new extension packages that alert the public to the presence of breeding Little Tern, especially at sites that cannot be easily watched over or monitored. Popular public places such as hotels, caravan parks and fishing supplies outlets should be targeted. Because the target

audience is tourists, the extension package needs to be delivered at the appropriate times to maximise exposure.

Other Desirable Management Action

- Employ a warden for the summer months to protect the breeding colonies of the Little Tern and other shorebirds in the Orbost area.
- Obtain from the Port of Melbourne Authority a long-term plan for dredging in the Gippsland Lakes and other estuaries within East Gippsland.
- Prepare an audiovisual kit accompanied by a static display outlining the biology/ecology and history of management of the Little Tern.
- Initiate a detailed study of the banded and colour-flagged Little Terns, possibly as part of a project for a tertiary student.

Legislative Powers Operating

Legislation

Wildlife Act 1975: protects the breeding Little Tern from disturbance where those colonies are signposted or fenced.
Flora and Fauna Guarantee Act 1988: provides for the protection of flora and fauna in Victoria and the declaration of critical habitat.
National Parks Act 1975: provides for the reservation, protection and management of natural areas and controls taking native flora and fauna from parks.
Conservation Forests and Lands Act 1987: provides for the management of the public lands under the act, the coordination of legislation administered by CNR, and the preparation of codes of practice.
Vermin and Noxious Weeds Act 1958: provides for the control of vermin on public and private land.

Licence/Permit Conditions

No permit to take or handle Little Terns will be given except in conformity to the broad conservation and research strategy proposed in this Action Statement.
Currently the Victorian Wader Study Group is permitted to capture and band Little Terns each year. A permit may be required to allow the movement of flood-prone or abandoned clutches of eggs.

Consultation and Community Participation

The active involvement of community groups and individuals is important for effective management of the Little Tern and all avenues for participation will be explored and utilised. Community groups and individuals will play important roles in protecting breeding colonies and monitoring. Local communities should be consulted in the early planning stages of any major developments concerning management of the Little Tern.

Implementation, Evaluation and Review

The Area Manager, Gippsland will be primarily responsible for the implementation and reporting of this Action Statement. In addition the Wildlife Planning Officer, Bairnsdale, will play a coordinating role in the implementation of annual management programs. The Little Tern Taskforce will oversee the long-term management of the species.
This action statement should be reviewed in 1998.

Contacts

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Wildlife Planning and Flora and Fauna Guarantee Officers in Bairnsdale, Orbost, Central Gippsland and Yarram
Little Tern Taskforce
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Further information

Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: http://www.dse.vic.gov.au

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