

Draft Revision (2009)

Flora and Fauna Guarantee Action Statement No. 51

Little Tern *Sternula albifrons*

Description

The Little Tern *Sternula albifrons sinensis* (Pallas 1764) is the smallest Australian representative of the family *Sternidae*, with a length of 200-280 mm and wingspan of 450-550 mm. Adult birds weigh ~ 50 g. Males and females in all plumages are similar in appearance and size. The Little Tern was previously placed in the genus of *Sterna* (terns and gulls). Investigations of mitochondrial DNA (Bridge *et al.* 2005) supported the subdivision of *Sterna* and recognized the genus *Sternula* for the “little terns”, the Little Tern and the closely related Fairy Tern, *S. nereis*. (Christidis & Boles 2008).

The upper part of the breeding plumage is a uniform light blue-grey and characterised by a dark carpal bar. The underparts are white with a deeply forked tail. The crown, nape and lores are black. The bill is yellow and is often seen with a black tip while its legs and feet are orange-yellow (Higgins & Davies 1996).

The upper part of the non-breeding plumage is a uniform light blue-grey and characterised by a dark carpal bar. The underparts are white and the rump and tail are pale grey. The tail is shorter and not as deeply forked as when in breeding plumage. The crown is dirty white with varying amounts of black. The nape is dark grey to black and lores are white. The bill is dark grey to black; the legs and feet can be brown-black to dull orange-brown in colour.

When in transitional plumage the birds are predominantly in breeding plumage but their crown, nape and lores may be mottled. Their bill is usually yellow-brown in colour. The juvenile plumage is similar to a non-breeding adult, although there may be varying amounts of brown mottling in the crown and plumage and a shorter, browner bill.

The Little Tern often shares the same habitat as the Fairy Tern. The Fairy Tern's appearance is very similar to that of the Little Tern but lacks the black lores and carpal bar. It is also a paler grey on the back, has a brighter yellow-orange bill and is slightly larger.

Distribution

Internationally, the Little Tern has a wide but patchy distribution in Africa, Asia, Europe, Australia and New Zealand. The subspecies *sinensis* has a breeding range from Sri Lanka and southern India east to China and Japan, and south through the Philippines and Indonesia to New Guinea and Australia. In Australia, there appears to be two sub-populations: the south-eastern Australian and northern Australian. The south-eastern population occurs in South Australia, Tasmania, Victoria, New South Wales and Queensland north to about Elliot River, where they may overlap with the northern population (Higgins & Davies 1996). The northern Australian population ranges from about Broome in north-western Western Australia, through coastal Northern Territory (mainly from Darwin to the Queensland border) to the Gulf of Carpentaria and eastern Cape York Peninsula. In addition, a third distinct population exists in Asia. These birds in non-breeding plumage have already bred in parts of Asia during the southern hemisphere's autumn and winter, and migrate to Australia using the East Asian - Australasian Flyway. In Victoria, the south-eastern Australian and Asian population can occur together.

In Victoria, the Little Tern occurs along the coastline from Mallacoota in the east to Western Port Bay. Although their overall distribution in the state has not changed in the past 30 years, the number of active breeding sites has reduced considerably during this time. Breeding sites that regularly produced successful recruitment of young have, for one reason or another, been abandoned. Some have not seen any nesting for more than 10 years (Lakes Entrance Beach, Lakes Entrance beach opposite Club Hotel, Barton Island, Point Turner, Tambo River Mouth, Seagull Point, Kate Keaney Entrance, Tamboon Swale, Tamboon Inlet, Frenches Narrows, Betka River, Goodwin Sands) or within the last five years (Albifrons Island, Lake Tyers Beach and mud islands in Western Port and Port Phillip Bay).

The main active breeding sites used by Little Tern in the past five years are located in Gippsland: Mallacoota, Marlo, Sydenham Inlet, Tern Island and Crescent Island and, although inevitably washed out nearly every year, Corner Inlet (Bedford & Bramwell in prep.). In the last five years, the majority of Little Tern nesting now occurs on beach habitats, with the remainder on existing islands supplemented with dredge spoil.

Population size

The ten year averages presented below were calculated as part of a review of data collected over 31 breeding seasons in Victoria from 1977 to 2007 (Bedford & Bramwell in prep). This analysis revealed that the years between 1988 and

1997 were particularly prosperous for the Little Tern. However, despite ongoing management of the birds over the past 10 years, the number of breeding pairs and the number of fledglings has declined markedly, although remaining above those for the period 1977-1987.

<i>Period</i>	<i>Breeding Pairs (Av/yr)</i>	<i>Fledglings (Av/yr)</i>
1977 to 1987	84	31
1988 to 1997	157	134
1998 to 2007	108	35

The non-breeding population of up to 400 Little Terns migrate to Victoria and Gippsland each year (Murray & Reside 1995). A review of counts of non-breeding bird numbers over the past 20 years indicates that the population has remained fairly stable at approximately 340 birds per season (Bedford & Bramwell in prep). The 2000/01 season was exceptional, with more than 900 Little Terns in non-breeding plumage observed (Roe unpublished data).

Habitat

Breeding sites

During the nesting period, Little Terns can be found on offshore, estuarine or lacustrine (lake) islands, beaches and spits. In Gippsland, they have been recorded nesting on artificial islands created by dredge spoil on Rigby Island (Owen 1990), Tern Island (Storer 1995) and Crescent Island (Hill *et al.* 1988). Non-breeding birds are regularly seen close to breeding sites but do not normally enter the nesting colony. They remain on nearby spits and beaches, paddling and preening in the shallows in the company of breeding birds. Little Terns nest above the high water mark and on sites where the substrate is sandy and the vegetation low and sparse. On island environments, nests can be seen next to clumps of grasses or small bushes which provide birds shelter from the elements and camouflage from aerial predators. Natural ocean debris such as seaweed, sponges and driftwood are placed in a colony area to supplement existing vegetative protection for birds. In addition at Marlo, small wooden hutches are distributed throughout the colony to provide adults and young shelter from wind, blowing sand, rain and sun (Elsner *et al.* 2006).

Foraging and roosting

In breeding areas, Little Terns can be seen foraging close inshore, along channels and in straits between islands, generally in water greater than 10 cm. Feeding at sea has been recorded (Taylor & Roe 2005). Birds usually feed singly but have been recorded in flocks of up to 50 in non-breeding areas (Owen 1991). The Little Tern diet is comprised of small fish including Anchovy (*Engraulis australis*), Pilchards (*Sardinops neopilchardus*) and Blue Sprats (*Spratelloides robustus*) (Vincent 1983, Taylor & Roe 2007). Gastropods, crustaceans and plant material have also been recorded as food items (Serventy *et al.* 1971). At Lake Tyers, Little Terns in non breeding plumage have been observed eating small gastropods that are picked from the wet sand (F. Bedford pers. obs.). When breeding, Little Tern pairs often roost on the nesting mounds or on adjoining spits, banks or sand bars.

Non Breeding sites

After breeding is completed or birds have abandoned a site, Little Terns may fly many kilometres from the more human populated areas to non breeding sites which provide isolation, shelter and a quiet refuge point for adult birds in breeding, non-breeding and transitional plumage as well as fledglings. In Gippsland non breeding sites are generally ephemeral and permanent wetlands. Wetlands include Victoria Lagoon, a coastal salt marsh wetland west of Lake Victoria, at Morley Swamp, an estuarine wetland east of Lake Wellington and at The Cut, part of the silt jetties the western part of Lake King. Other smaller wetlands visited by Little Tern are scattered inland and usually found on private properties managed for cattle and sheep. At Victoria Lagoon and The Cut they often flock and feed with breeding birds and fledglings. They regularly use partially submerged trunks and branches of large trees and old bird hides (used for duck hunting) to rest on. This is typical at The Cut and Victoria Lagoon respectively (F. Bedford pers. obs.). Non-breeding sites are also popular for a range of migratory and resident waterbirds.

Life history and ecology

Little Terns are a long-lived seabird often reaching 15 years of age. In the Hunter Valley estuary in New South Wales, a 17.5 year old, banded Little Tern in non-breeding plumage was recovered. This is thought to be Australia's oldest recorded individual of this species (Leishman 1995). Little Terns usually breed at two to three years of age (Cramp 1985, Owen 1991, Higgins & Davies 1996), but possibly as early as one year of age (Minton 1990). By the time they arrive in Victoria (September to October), the birds display fresh plumage on the head, tail, body, upper wing coverts and inner primaries. They are quite vocal and their excitable high pitch calls can be heard from some distance. High

speed aerial chasing is usually observed. Prospecting birds often fly back and forth over islands and beaches. Most do not get underway with mating but spend their time bathing in the shallows, preening and socialising, often with non-breeders. Fairy Terns may also be on site and observations of mating between the two species is not unusual (Cox and Close 1977, Norman *et al.* 1996, Hill *et al.* 1988, Ross *et al.* 1999, Bedford 2002). Little Tern commence a complete post breeding moult which begins in Victoria, is suspended during migration and completed in their non breeding grounds of NSW and QLD (Higgins and Davies 2006). At the close of the breeding season their behaviour is different than on arrival. Excitable calls on the wing are infrequently heard and birds generally do not chase each other. As time draws close to depart, they often fly very high in the sky in large flocks. It is not unusual to visit a site one day and see hundreds of birds and the next none. However, not all leave, and small flocks have been observed over wintering in Victoria at Lake Wellington, Gippsland Lakes (J. Reside pers. comm.), Victoria Lagoon, Gippsland (F. Bedford pers. obs.) and Western Port Bay (C. Minton pers. comm.).

Courtship and Nesting

Little Terns undertake a variety of ritual courtship behaviours which include birds strutting, circling as well as fish-wiping. The latter involves the male draping a fish over the females back and wiping in a back and forth motion (Reside 1993). Copulation generally follows. Other birds may already be in the breeding area and territorial squabbles are not uncommon. Nests are typical of the *Sternidae* family consisting of a shallow scrape in the sand. They are often lined with small shells, shell fragments and small pieces of vegetation, when available. At Lake Tyers, scrapes are made in the sand between patches of low-growing plants and grasses. Many scrapes may be excavated before a suitable one is selected. Usually, a clutch of two to three long, oval, light brown eggs are laid. The eggs are incubated by both parents (Smith 1990) once the clutch is complete (Campion 1963). The incubation period usually ranges from 17 to 22 days (Smith 1994) but can extend to more than 25 days (Reside *et al.* 1989). Both parents brood the newly-hatched nestlings and bring food to the nest. They are protective of their eggs and chicks and will leave their nests with an alarm call to swoop at intruders that enter or move around the nesting mounds (Owen 1990). If Fairy Terns are also present, they will jointly defend the colony area. Little Terns fledge after ~20 days. If unsuccessful during their first attempt to breed, birds may relocate to another site or stay and attempt a second clutch.

In December, 2001, a severe night-time hailstorm at Lake Tyers destroyed the nesting tern colony on two of the mud islands just east of Tern Island. Thirty-eight adult birds in breeding plumage were killed, along with numerous chicks and eggs. Post-mortems revealed 36 of the 38 birds were female (P. Mitchell pers. comm.). As the adult birds were removed from on or close to a nest, this suggests that females are predominantly responsible for brooding during the night (F. Bedford pers. obs.).

Conservation status

Victorian conservation status

The Little Tern has been listed as “threatened” under the *Flora and Fauna Guarantee Act 1988*.

The Little Tern is considered “vulnerable” in Victoria according to DSE’s *Advisory List of Threatened Vertebrate Fauna in Victoria – 2007* (DSE 2007).

Threats

The recreational use of coastal areas, particularly sandy spits and beaches, continues to place Little Tern habitat in direct competition with human activities. The popularity of water sports such as fishing, swimming and boating is increasing accessibility to off-shore breeding sites and may be an important factor in the decline of Little Tern colonies in more populated areas. Humans not only disturb incubating birds on their nests, resulting in chilling or heat stress of eggs and small chicks, but can also trample directly on the well-camouflaged eggs and chicks. In addition, humans introduce predators such as dogs (*Canis lupus familiaris*) to the area. Avian predators such as Silver Gulls (*Larus novaehollandiae*) and Pacific Gulls (*Larus pacificus*) may take advantage of the disturbance and take eggs and chicks from the colony. Similar behaviour has been observed in other tern breeding colonies by other predatory birds such as Ravens (*Corvus spp.*) and raptors (see Durdin 1992). The Red Fox (*Vulpes vulpes*) is known to cause the abandonment of entire colonies due to their presence and predation of eggs and young. The summer breeding of Little Tern coincides with the influx of human activity along the coast. Seasonal, stochastic events such as hail storms and king tides also affect breeding colonies.

<i>Standard threat</i>	<i>Source Of Threat</i>	<i>Explanation</i>
Carnivory	Animals – dogs	Domestic dogs are a major problem at all tern breeding sites. Unrestrained, they can run through colonies, chase adults from their nests and tread and prey upon eggs and chicks. They have been known to cause abandonment of entire nesting colonies.

Carnivory	Animals - foxes	Foxes are a major problem at all nesting colonies. Often their presence alone can cause a site to be abandoned.
Carnivory	Animals - other species	Avian predation on eggs and chicks occurs nearly every season at one or more nesting sites in Victoria. Raptors, ravens and gulls are the main bird species involved. A Tiger Snake (<i>Notechis scutatus</i>) has been recorded entering the colony at Rigby Island (Lakes Entrance) and consuming at least three tern chicks (Waldegrave-Knight <i>et al.</i> 1997).
Genetic decline	Genetic decline - hybridisation	Little Terns were observed to be interbreeding with Fairy Terns in the 1970s (Cox & Close 1977). There are frequent sightings of courtship and copulation between Little and Fairy Terns in East Gippsland. In 2001 and 2003 at Lake Tyers, and in 2002 at Marlo, mixed pairs of Little Terns and Fairy Terns mated and raised chicks (Bedford 2002, Waldegrave-Knight <i>et al.</i> 1977, T. Mitchell pers. comm). It is assumed that hybridisation has the potential to affect the genetic system of Little Terns, although the specific impacts are not understood.
Habitat damage or loss	Invasion by environmental weeds	Little Terns will only nest in areas where the vegetation is low and sparse. Environmental weeds therefore pose a threat in some locations.
Human disturbance	Recreational activities - motorised (4wds, trail bikes, boats etc)	Despite Little Terns usually nesting on islands, most breeding sites are easily accessible to humans via boats and other water craft and are therefore subject to disturbance.
Human disturbance	Recreational activities - non-motorised	Little Terns nest directly on the beaches at Marlo and Mallacoota. Disturbance occurs when people or their pets approach nests.
Loss of important habitat features	Dredging	Unauthorised placing of dredge spoil is a threat to nesting activity. On Rigby Island, near Lakes Entrance, breeding ceased after a large amount of dredge spoil was placed on the breeding mounds.
Pollution/toxins	Chemicals - oil spills	Oil, which may leak from ships and boats along the south eastern coastline, could pose a particular threat to colonies of Little Terns due to their nesting in close proximity to ocean entrances and along ocean beaches.
Weather	Weather - climate change	Due to their reliance on nesting and roosting sites which are exposed above the high water mark, Little Terns are susceptible to weather extremes. Coastal erosion, sea level rises and inundation from storm surges may cause some of their traditional breeding and roosting sites to become unavailable (Sjerp & Charteris 2008). This is most relevant along the Ninety Mile Beach and the Gippsland Lakes. In addition, changes in weather patterns and temperatures may directly influence Little Tern migratory movements and nesting activity. Schooling migratory fish species on which they feed may also be affected.

Important populations

<i>Location name</i>	<i>Land manager</i>	<i>Catchment</i>	<i>Bioregion</i>
Marlo Coastal Reserve	Parks Victoria	East Gippsland	East Gippsland Lowlands
Gippsland Lakes Coastal Park	Parks Victoria	West Gippsland	Gippsland Plain
Croajingolong National Park (NP)	Parks Victoria	East Gippsland	East Gippsland Uplands

Cape Conran Coastal Park	Parks Victoria	East Gippsland	East Gippsland Lowlands
Gippsland Lakes Reserve	Parks Victoria	West Gippsland East Gippsland	Gippsland Plain
Lakes Entrance/Lake Tyers Coastal Reserve	DSE Statewide Services	East Gippsland	East Gippsland Uplands

Past management actions

<i>Action</i>	<i>Result explanation</i>
Restore habitat	Dredge spoil has been used at a number of sites to entice small tern nesting.
Deploy personnel to supervise visitor access	To minimise disturbance to nesting birds, a Tern Warden was employed during the summer months to liaise with visitors near the nesting sites. This person has been replaced by a dedicated DSE Officer.
Erect/maintain signs to restrict or discourage access	In the past, a variety of signage has been used across Gippsland to promote awareness of Little Terns and their habitats.
Control native animals to reduce predation	The use of non-toxic meat baits to entice avian predators away from tern nesting colonies was successfully used in 2003. See below.
Develop, publish and distribute educational, technical or publicity material and/or displays.	Interpretive boards and signage have been and continue to be used effectively to promote awareness of Little Terns in Gippsland. During the breeding season media releases in local papers are produced and radio interviews given to inform the public of the arrival and success of the breeding season.
Control introduced animals	The Southern Ark fox baiting program has been used for many years in Gippsland to control numbers of animals near known nesting colonies.
Identify and document specific measures to mitigate a threatening process.	In 2003, efforts were made to distract potential avian predators from nesting terns. A meat bait station adjacent to the main breeding colony at Crescent Island was trialled to encourage ravens and gulls to feed on the maggots produced, thus distracting them from the chicks and eggs in the nearby colony. Meat off cuts were placed inside a hessian bag with holes punched in and strung from a tree. The method proved successful with only minor interference observed from the predatory birds over the entire season. An inspection of Crescent Island was recently undertaken and the following works were identified as needing to be completed prior to the next breeding season: replenish pelican nesting area, renourish tern nesting area and re-establish Albifrons Island.
Conduct survey to confirm existing records	In the past 15 years, ad hoc surveys have been undertaken in Port Phillip Bay and Western Port. Although the bulk of the Little Tern population is now found in Gippsland, it remains important to monitor the old nesting sites further west to confirm the absence of breeding terns.
Conduct survey to determine abundance/extent	Since the mid 1970s, the Victorian Wader Study Group (VWSG) has colour-banded Little Terns in Victoria. This has allowed observers to register sightings of the species to the Australian Bird and Bat Banding Scheme (ABBBS). Recovery information includes site and age of bird when banded, time since last seen and distance the bird has travelled since last sighted.
Prevent habitat loss	In Gippsland, seasonal removal of vegetation has been undertaken on nesting islands with positive results.

Conservation objectives

Long term objective

To ensure that the Little Tern can survive, flourish and retain its potential for evolutionary development in the wild.

Objectives of this Action Statement

- To improve condition of habitat
- To increase the extent of habitat
- To secure populations or habitat from potentially incompatible land use or catastrophic loss
- To increase knowledge of biology, ecology or management requirements
- To maintain or increase community awareness and support

Intended management actions

The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity Conservation (ABC) system. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

<i>Standard objective</i>	<i>Targets</i>	
To improve condition of habitat.	<ul style="list-style-type: none"> • No net loss in the extent and condition of Little Tern breeding and foraging habitat, based on quantitative index. 	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Control introduced animals.	Continue 1080 baiting along the coast from Lakes Tyers to Yeerung River as part of the Southern Ark Project to control introduced animals. Also control predators in the Gippsland Lakes Coastal Park.	Parks Victoria DSE Statewide Services - Gippsland region
Identify and document specific measures to mitigate a threatening process.	Inspect all known nesting sites of Little Terns prior to the birds' arrival in Gippsland. Conduct pre-season works as required to ensure that courtship and nesting activity is not adversely affected by a human presence.	DSE Statewide Services - Gippsland region
Manage environmental weeds.	Remove unwanted vegetation from Little Tern nesting areas. Little Tern require sites to have less than 5% vegetation cover.	DSE Statewide Services - Gippsland region
Protect habitat from wind-blown sand or soil	Install artificial structures or augment natural debris (such as seaweeds, sponges and driftwood) in known nesting sites to provide nesting adult birds and chicks with shelter from weather extremes.	DSE Statewide Services - Gippsland region

<i>Standard objective</i>	<i>Targets</i>	
To maintain or increase the extent of habitat	<ul style="list-style-type: none"> • Nesting areas maintain at or below 5% vegetation cover immediately prior to the breeding season. 	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Prevent habitat loss	Assess vegetation cover and reduce if required.	DSE Statewide Services - Gippsland region
Restore habitat	Renourish tern nesting area and re-establish Albifrons Island roosting site.	DSE Statewide Services - Gippsland region

<i>Standard objective</i>	<i>Targets</i>	
To secure populations or habitat from potentially incompatible land use or catastrophic loss	<ul style="list-style-type: none"> • Prompt (<24 hours) and comprehensive (all affected areas treated) response to any significant oil spill. • Demonstrable reduction in levels of human disturbance to Little Tern nesting sites, based on quantitative annual monitoring at key sites. 	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Erect/maintain signs to restrict or discourage access.	Continue to erect and maintain signs in accordance with relevant plans.	Parks Victoria
Erect/maintain structures to restrict or control access.	Initiate a response to deal with any affected birds in the event of an oil spill incident. Fencing areas to exclude members of the public may be required.	DSE Statewide Services - Gippsland region Parks Victoria
Liaise with stakeholder groups.	Coordinate volunteers to assist with cleaning, rehabilitation and release of the birds. Phillip Island Nature Park has trained personal and equipment to assist in dealing with the situation.	DSE Statewide Services - Gippsland region

<i>Standard objective</i>	<i>Targets</i>	
To increase knowledge of biology, ecology or management requirements.	<ul style="list-style-type: none"> • Demonstrable improvement in understanding of Little Tern abundance, distribution, migration patterns and hybridisation with Fairy Terns in the state of Victoria by the year 2010. 	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Collate, analyse and report on data.	Compare past records of breeding, population numbers and distribution in Victoria. Examine past records and network with birding groups and government agencies in South Australia, New South Wales and Tasmania.	DSE Statewide Services - Gippsland region
Conduct survey to determine abundance/extent.	Survey for colour-banded little terns each year and report to ABBBS in Canberra.	DSE Statewide Services - Gippsland region
Ensure records of species, communities and locations are documented on the relevant databases.	Continue to submit all records of breeding and sightings of Little Terns to the Atlas of Victorian Wildlife or equivalent database.	DSE Statewide Services - Gippsland region
Undertake detailed population monitoring and collect demographic information.	Continue to monitor nesting sites in the west and east of Victoria.	DSE Statewide Services - Gippsland region
Undertake research into management requirements.	Investigate the impact of prawning on the success of the breeding colony.	DSE Statewide Services - Gippsland region
Undertake threat monitoring.	Determine if hybridisation is increasing between Little Terns and Fairy Terns, a colour banding program targeted at adults and offspring would allow observers to recognise individuals in the field and record any future breeding and reproductive activity.	DSE Statewide Services - Gippsland region

<i>Standard objective</i>	<i>Targets</i>	
To maintain or increase community awareness and support.	<ul style="list-style-type: none"> • Demonstrable increase in community awareness of the Little Tern, its habitat and threats, in key communities by 2014. 	

<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Develop, publish and distribute educational, technical or publicity material and/or displays.	Prepare media releases and conduct radio interviews to inform the local community of the significance of this species, the arrival of the breeding season and the activities people can do to increase breeding success. PowerPoint presentations on Little Terns will be given to school groups as requested.	DSE Statewide Services - Gippsland region
Promote awareness of item through communication with local community.	The opportunity to foster goodwill toward Little Tern conservation can be done whilst staff are conducting counts and monitoring nesting activity. Members of the public are invited to view the terns using the spotting scope and binoculars. Valuable informal discussions can be made to highlight the reasons why some sites along the coast are fenced off and why the bird is at serious risk of extinction.	DSE Statewide Services - Gippsland region
Provide training.	Train relevant Victorian Government agency staff in procedures relating to oil spills, including "Wildlife Response Plan for Marine Pollution Emergencies" and the "Spill Response Atlas" maps.	DSE Biodiversity and Ecosystem Services
Conduct priority research projects as specified.	Establish and monitor levels of community awareness regarding the Little Tern at key population centres such as Lakes Entrance.	DSE Statewide Services - Gippsland region

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References

- Bedford, F.E. (2002). *Report on the Little Tern, Sterna albifrons breeding season 2001 – 2002 East Gippsland*. Report to the Department of Natural Resources and Environment.
- Bedford, F.E. and Bramwell, M.D. (in prep). *A review of the population of Little Terns and Fairy Terns in Victoria over a 30 year period*. Report to the Department of Sustainability and Environment.
- Bridge, E.S., A.W. Jones & A.J. Baker (2005). A phylogenetic framework for the terns (Sternini) inferred from mtDNA sequences: implications for taxonomy and plumage evolution. *Molecular Phylogenetics and Evolution*. **35**:459-469.
- Campion C.B. (1963). Banding the Little Tern. *The Australian Bird Bander* **1**:125-132
- Christidis, L. and W.E. Boles (2008). *Systematics and Taxonomy of Australian Birds*. Collingwood, Victoria: CSIRO Publishing.
- Cox, J. B. and Close, D. G. (1977). Interbreeding of Little and Fairy Terns. *Emu* **77**:28-32.
- Cramp, S. (1985). Handbook of the Birds of Europe, the Middle East and North Africa: *The Birds of the Western Palearctic*. Volume 4. Oxford: Oxford University Press.
- DSE (2007) *Advisory List Of Threatened Vertebrate Fauna In Victoria - 2007* Department of Sustainability and Environment, East Melbourne
- Elsner, W., Mitchell, T. and Bedford, F. E. (2006). *Little Tern and Fairy Tern in far east Gippsland: Breeding season 2005 -2006*. Report to the Department of Sustainability and Environment.
- Higgins, P.J. and Davies, S.J.J.F. (eds) (1996). *Handbook of Australian, New Zealand and Antarctic Birds. Volume Three - Snipe to Pigeons*. Melbourne: Oxford University Press.
- Hill, R., M. Bamford, D. Rounsevell & J. Vincent (1988). Little Terns and Fairy Terns in Australia - an RAOU Conservation Statement. *RAOU Report Series*. **53**:1-12.
- Leishman, A.J. (1995). Recovery round-up. *Corella* **19**: 71-72.
- Minton, C. (1990). Report on tern-banding at Pt. Wilson, Spermwhale Head, Lakes National Park on 13-14 January, 1990. *Victorian Wader Study Group Bulletin*. **14**:42-45
- Murray, A. J. and Reside, J. (1995). *Management of the Little Tern (Sterna albifrons) in Victoria 1994/5*. Department of Conservation and Natural Resources. Bairnsdale, Victoria.
- Norman, F. I., Dann, P. and Menkhorst, P. W. (1996). *The status of seabirds in Victoria*. Pp. 185-200 in NPWS, Hurstville

- Owen, R. (1990). *A Report on the Management of the Little Terns (Sterna albifrons) in the Bairnsdale Region during the 1989-90 Breeding Season*. Report to the Department of Conservation and Environment.
- Owen, R. (1991). *A Report of the Management of Little Terns (Sterna albifrons) in the Bairnsdale Region during the 1990/91 Breeding Season*. Report to the Department of Conservation, Forests & Lands. Bairnsdale, Victoria.
- Reside, J. (1993). Little Tern *Sterna albifrons sinensis*. *Action Statement*. No. 51. Department of Conservation and Natural Resources, Melbourne.
- Reside, J. Willoughby, L. & Whillance, L. (1989). *A Report on the Management of Little Terns (Sterna albifrons) in East Gippsland during the 1988-89 Breeding Season*. Report to the Department of Conservation and Environment.
- Roe, E. Unpublished Data. Former Flora and Fauna Officer, Department of Sustainability and Environment. Bairnsdale Victoria.
- Ross, G. E., Egan, K. and Priddel, D. (1999). Hybridization between Little Tern *Sterna albifrons* and Fairy Tern *S. nereis* in Botany Bay, New South Wales. *Corella* 23:33-36.
- Serventy, D.C. Serventy, D.N. & Warham, J. (1971) *The Handbook of Australian Seabirds*. A.H. & A.W. Reed Ltd: Sydney, Australia.
- Sjerp, E. and Charteris A. (2008). *Climate change, Sea Level Rise and Coastal Subsidence along the Gippsland Coast. Gippsland Coastal Board final Report*, Phase 2 of the Gippsland Climate Change Study July 2008.
- Smith P. (1990). *The biology and management of the Little Tern Sterna albifrons in NSW*. NPWS, Hurstville
- Smith, P. (1994). *Management of the Little Tern Sterna albifrons Colony at Forster*. Report to NSW, NPWS, Hurstville
- Storer, B. (1995). Little Tern (*Sterna albifrons*) *Management during the 1993/94 breeding season in Gippsland, Victoria*. Report to the Department of Conservation and Natural Resources, Victoria.
- Taylor, I.R. and Roe, E.L. (2004). Feeding ecology of little terns *Sterna albifrons sinensis* in south-eastern Australia and the effects of pilchard mass mortality on breeding success and population size. *Marine and Freshwater Research*, 55: 799 - 808.
- Vincent, J. (1983). The Breeding Status of the Little Tern (*Sterna albifrons*) in East Gippsland, Victoria, 1977-80. *Aust. Bird Watcher* 10(2): 35-60.
- Waldegrave-Knight, L., Moss B., Rolland T., Mitchell P., Murray A., Taylor S. & Turner L. (1997). *Report of the Little Tern (Sterna albifrons) breeding season 1996/7 East Gippsland. Victoria*. Report to the Department of Natural Resources & Environment.