

Site Information Sheet

for nomination to join the East Asian-Australasian Shorebird Site Network

Shallow Inlet Marine & Coastal Park

1. Date:

8 October 2004.

2. Country:

Australia

3. Name of site:

Shallow Inlet, Victoria.

4. Geographical coordinates:

Latitude - 38° 50'S, Longitude - 146° 10'E.

5. Altitude:

From less than 10 metres above sea level to the sea floor in Shallow Inlet.

6. Area:

2,300 hectares

7. Overview:

Shallow Inlet is a large, wave-dominated estuary in mostly unmodified condition, on Victoria's south-eastern coastline near Wilson's Promontory (OzEstuaries database). The shorebird site includes Shallow Inlet Marine and Coastal Park, the Flora and Fauna Reserve along the western shoreline, on islands in the inlet, and the Shallow Inlet Saltmarsh Flora and Fauna Reserve along the eastern shoreline. Both Reserves are managed as part of the Park. The site also covers the part of the Waratah Bay – Shallow Inlet Coastal Reserve east of Sandy Point township.

The extensive mudflats and sandy intertidal areas provide excellent habitat for shorebirds. Over 16,000 wading birds are recorded in summer, representing 22 species (NRE unpublished draft). In particular, Shallow Inlet is an internationally important site for five species of migratory shorebird: Double-banded Plover (*Charadrius bicinctus*), Red-necked Stint (*Calidris ruficollis*), Sanderling (*Calidris alba*), Curlew Sandpiper (*Calidris ferruginea*) and Eastern Curlew (*Numenius madagascariensis*). Eastern Curlew, are classified as Near Threatened in the IUCN Red Databook. The site also supports significant numbers of Pacific Golden Plover and Hooded Plover (see Section 19).

8: Justification of Shorebird Site Network criteria:

Regularly supports >1% of the individuals in a population of one species or subspecies of migratory shorebirds

The remote location and large area of this site make regular counting difficult, but also contribute to continued habitat health. Therefore, whilst many published counts are over 10 years old and no repeat counts are available for some species, it is assumed that the site does regularly support similar numbers of these species listed below.

Shallow Inlet regularly[#] supports >1% of flyway population of five species of migratory shorebird. The counts exceeding the 1% population threshold were obtained for five species in surveys conducted between 1981 and 1990. The counts conducted in 1999, 2001, 2003 and 2004 were only completed for Sanderling. Numbers of Double-banded Plover, Red-necked Stint and Eastern Curlew are likely to remain high at this site, although Curlew Sandpiper numbers have declined since the 1980's at several sites across south-eastern Australia (Jessop, AWSG *pers comm*).

Species common name	Species scientific name	Minimum population estimate for flyway*	SSN 1% Criterion	Shallow Inlet count	Count Dates [#]	Reference
Curlew Sandpiper	<i>Calidris ferruginea</i>	180,000	1,800	1829 2235 2500 2650 3500	02/12/1983 03/03/1984 21/1/1985 9/2/1985 1/2/1987	AWSG database AWSG database AWSG database AWSG database AWSG database
Double-banded Plover	<i>Charadrius Bicinctus</i>	50,000	500	538 597	20/4/1984 17/6/1989	AWSG database AWSG database
Eastern Curlew	<i>Numenius madagascariensis</i>	38,000	380	622	12/2/1983	AWSG database
Red-necked Stint	<i>Calidris ruficollis</i>	320,000	3,200	4500 5421 4000 3269 3366 3500	06/02/1982 12/2/1983 21/02/1981 15/12/84 09/02/1985 01/02/1987	AWSG database AWSG database AWSG database AWSG database AWSG database AWSG database
Sanderling	<i>Calidris alba</i>	22,000	220	361 252 230 769 282 431 348 300 500 400	21/1/1984 4/2/1984 3/3/1984 1/8/1999 Jan 2001 Aug 2001 Apr 2002 Feb 2003 6/2/2004 7/3/2004	AWSG database AWSG database AWSG database DSE Counts DSE Counts DSE Counts DSE Counts DSE Counts AWSG database AWSG database

* Population estimates from Wetlands International (2002).

The majority of sites in the East Asian – Australasian Flyway do not have sufficient count data to meet the Ramsar guidelines for defining the term “regularly supports”. Allowance has been made for sites in remote areas where regular count information cannot be collected, and it is accepted that single counts can help establish the relative importance of the site for a species (Ramsar Convention Bureau 2000; Bamford *et al* 2006). Thus for the East Asian – Australasian flyway, Eastern Curlew is considered to have met the 1% criterion on the basis of a single count.

Supports appreciable numbers of an endangered or vulnerable population of migratory shorebird]
Criteria not met.

Is a staging site supporting >5000 shorebirds or >0.25% of a population stage at this site
Criteria not met.

9. Wetland type:

Marine and Coastal Wetlands – A, B, E, G, H, J

A - Permanent shallow marine waters less than six metres deep at low tide; includes sea bays and straits.

B - Marine subtidal aquatic beds; includes kelp beds, sea-grass beds, tropical marine meadows.

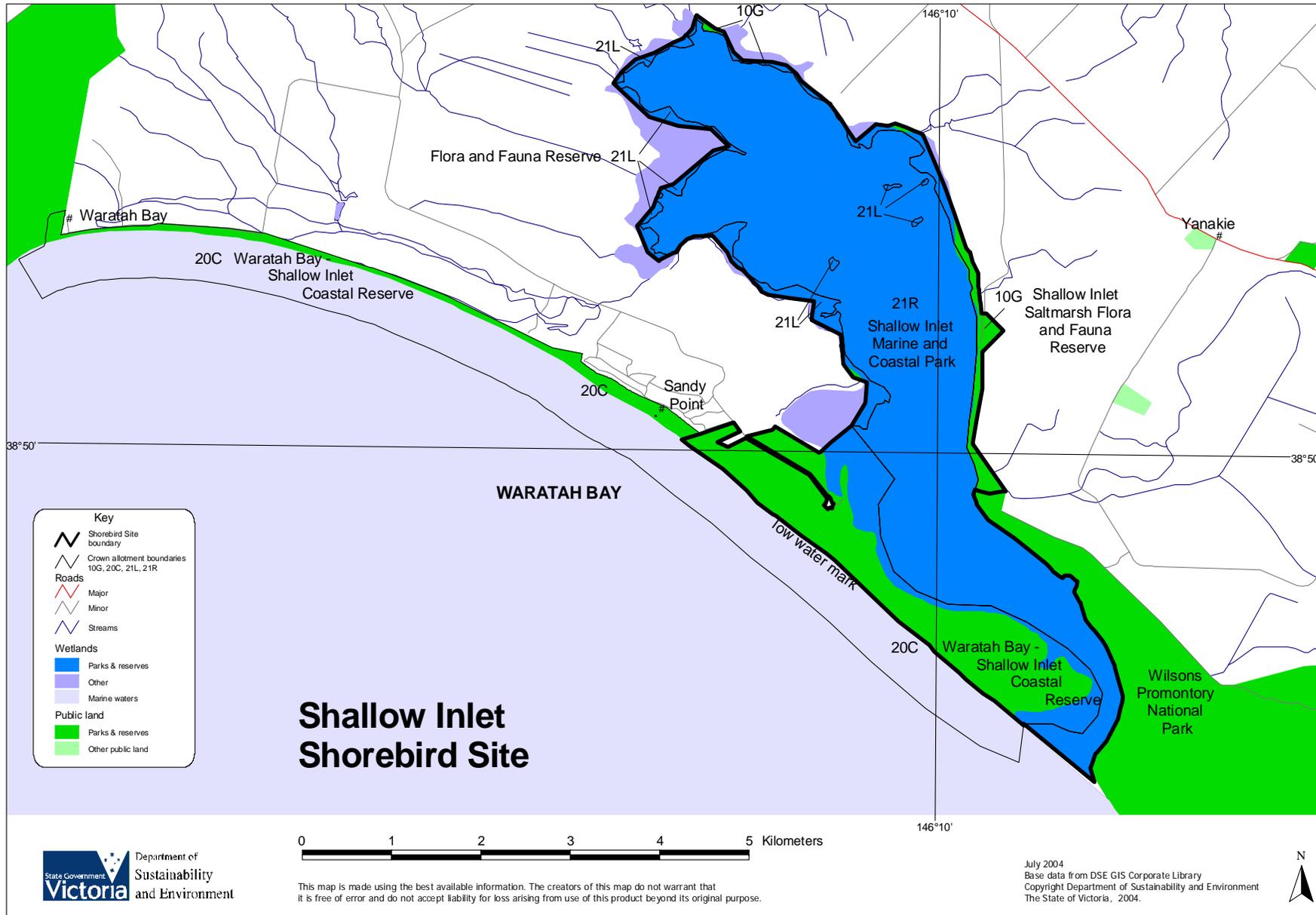
E - Sand, shingle or pebble shores; includes sand bars, spits and sandy islets; includes dune systems.

G - Intertidal mud, sand or salt flats.

H - Intertidal marshes: includes salt marshes.

J - Coastal brackish/saline lagoon.

10. Outline map of site



The shorebird site includes the following Crown allotments:

Area	Parish	Section	Allotment
Shallow Inlet Marine and Coastal Park	Waratah North	No Section	21R
Flora and Fauna Reserve on western shoreline and islands in the inlet	Waratah North	No Section	21L
Shallow Inlet Saltmarsh Flora and Fauna Reserve	Yanakie	No Section	10G
Waratah Bay – Shallow Inlet Coastal Reserve. Only the part of allotment 20C that is east of Sandy Point and above low water mark is included in the shorebird reserve.	Waratah North	No Section	20C*

11. Jurisdiction:

Land management: Parks Victoria and Committees of Management

State: Victorian State Government

Conservation agency: Department of Sustainability and Environment (DSE).

12. Management Authority:

Area	Management authority
1. Shallow Inlet Marine and Coastal Park 2. Flora and Fauna Reserve on western shoreline and islands in the inlet.	Parks Victoria Main Street FOSTER VIC 3690
3. Shallow Inlet Saltmarsh Flora and Fauna Reserve	Shallow Inlet Committee of Management.
4. Waratah Bay – Shallow Inlet Coastal Reserve (east of Sandy Point)	Sandy Point Foreshore Committee of Management.

13. Name and address of the compiler:

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14. General location:

Shallow Inlet is located on Victoria's south-east coastline at Waratah Bay, which lies north-west of Wilson's Promontory, near the small town of Sandy Point. The site is 180 kilometres south-east of Melbourne, and the population of Melbourne was 3.6 million in 2003.

15. Physical features:

Shallow Inlet is a large tidal embayment with a single marine connection partly enclosed by a sand barrier complex of spits, bars and mobile sand dunes (CFL 1990). It has a maximum length of 14 kilometres, maximum width of 260 metres, a water area of 503 hectares at low tide and 1168 hectares of saltmarsh and saltflat (OzEstuaries database). The entrance, although constricted and shifting, is permanently open to the sea with the absence of substantial human interference. The inlet is surrounded by dunes, low marshy shorelines and vegetated bluffs. The intertidal sediments include four sub-environments of deposition: salt marsh, coarse grained beaches, fine to medium grained intertidal mud and sand flats, and fine to medium grained sand dunes (CFL, 1990).

Thirteen sites of State, regional and local geological and geomorphological significance have been documented for Shallow Inlet Marine and Coastal Park (CFL, 1990).

16. Hydrological values:

Shallow Inlet has a high-tide surface area of 1660 hectares. The catchment of the inlet is 10,400 hectares. It is of low relief and drainage into the inlet is via numerous intermittent creeks and constructed drains. The streams are small, with the largest system being only 20 kilometres long and mostly dry in summer. Shallow Inlet is tidally dominated with negligible freshwater input. The average volume of runoff into the inlet has been estimated at 100 megalitres per tidal cycle or 0.5% of the high tide volume of the inlet. The spring tidal range in Waratah Bay, in which Shallow Inlet is found, is 2.5 metres (CFL, 1990).

17. Ecological features:

Marine and intertidal areas of the inlet are characterised by extensive seagrass meadows which are important nursery areas for fish and other marine life. Beds of *Heterozostera tasmanica* are restricted to deeper water adjacent to the main channels, while *Zostera muelleri*, the most abundant seagrass, is widespread on the tidal flats usually above the low tide mark but also extending below (CFL, 1990). Intertidal sand and mud flats are important feeding areas for resident and migratory shorebirds. The intertidal flats support large beds of bivalve molluscs and armies of the crab *Mictyris platycheles* are a regular sight (NRE, unpublished).

Fringing terrestrial vegetation is largely restricted to a narrow strip around the shoreline 10 to 300 metres wide (CFL, 1990). This vegetation includes:

- coastal woodlands dominated by *Eucalyptus obliqua* or *Banksia integrifolia*;
- coastal scrub communities (*Melaleuca ericifolia* closed scrub or closed dune scrub dominated by *Leptospermum laevigatum*, *Acacia sophorae* and *Leucopogon parviflorus*);
- foredune communities restricted to sandy shores which include introduced species used for dune stabilisation as well as native colonisers such as Coast Fescue *Austrofestuca littoralis* and *Acacia sophorae* and coastal shrub species;
- several different saltmarsh communities dominated by species such as *Samolus repens*, *Sarcocornia quinqueflora*, *Sclerostegia arbuscula*, *Juncus kraussii*, *Stipa stipoides*, *Gahnia filum* and, in an area about one hectare in area, the introduced cord grass *Spartina townsendii*.

Seven species are considered to be serious environmental weeds in Shallow Inlet (CFL, 1990). These are *Dipogon lignosus*, *Coprosma repens*, *Rubus fruticosus*, *Thinopyrum junceum*, *Spartina townsendii*, *Euphorbia paralius* and *Pittosporum undulatum*.

Spartina (Cord grass) is major environmental weed which can impact negatively on shorebird habitat. It colonises estuarine areas, leads to the rapid accumulation of sediment, excludes invertebrate life from the soil strata and spreads across tidal flats resulting in the displacement of wading birds from their intertidal feeding grounds (NRE unpublished). *Spartina* occurred in a very small amount on the western side of the Inlet. It was sprayed with herbicide in April 1994 and successfully controlled. It is likely that *Spartina* can be eradicated from Shallow Inlet (NRE unpublished).

18. Noteworthy flora:

Over 180 species, including 37 introduced flora species have been recorded in Shallow Inlet (NRE, unpublished). Significant species include:

- Prom She Oak *Allocasuarina media* (CFL, 1990) which is poorly known in Victoria and suspected of being rare or threatened;
- a *Banksia* species (CFL, 1990) which is yet to be identified which appears to be a distinct taxon;
- Coast Fescue *Austrofestuca littoralis* which is rare in Victoria (DSE 2003a); and
- 53 orchid species of which six are rare in Victoria (NRE unpublished draft).

19. Noteworthy fauna:

About 180 species of birds have been recorded in Shallow Inlet. Nineteen bird species are listed under the Japan-Australia Migratory Birds Agreement (JAMBA) and 16 species are listed under the China-Australia Migratory Birds Agreement (CAMBA).

Scientific name	Common Name	JAMBA	CAMBA
<i>Limosa lapponica</i>	Bar-tailed Godwit	✓	✓
<i>Sterna caspia</i>	Caspian Tern	✓	✓
<i>Tringa nebularia</i>	Common Greenshank	✓	✓
<i>Actitis hypoleucos</i>	Common Sandpiper	✓	✓
<i>Calidris ferruginea</i>	Curlew Sandpiper	✓	✓
<i>Numenius madagascariensis</i>	Eastern Curlew	✓	✓
<i>Pluvialis squatarola</i>	Grey Plover	✓	
<i>Heteroscelus brevipes</i>	Grey-tailed Tattler	✓	✓
<i>Gallinago hardwickii</i>	Japanese Snipe	✓	
<i>Sterna albifrons</i>	Little Tern	✓	✓
<i>Tringa stagnatilis</i>	Marsh Sandpiper	✓	✓
<i>Pluvialis fulva</i>	Pacific Golden Plover	✓	✓
<i>Calidris canutus</i>	Red Knot	✓	✓
<i>Calidris ruficollis</i>	Red-necked Stint	✓	✓
<i>Arenaria interpres</i>	Ruddy Turnstone	✓	✓
<i>Calidris alba</i>	Sanderling	✓	✓
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	✓	✓
<i>Diomedea exulans</i>	Wandering Albatross	✓	
<i>Numenius phaeopus</i>	Whimbrel	✓	✓

Shallow Inlet is of national significance for Pacific Golden Plover *Pluvialis fluva* and an important site for two species of endemic shorebird: Sooty Oystercatcher *Haematopus fuliginosus*, and Hooded Plover *Thinornis rubricollis* of which a maximum of 61 have been recorded at one time. This is more than the 1% population estimate of 50 (Watkins 1993). The inlet is an important breeding area for Red-capped Plover *Charadrius ruficapillus* and Pied Oystercatcher *Haematopus longirostris*. It regularly supports 100 Pied Oystercatcher out of a total population estimated at 11,000.

Eight species of amphibians and 12 reptiles have been recorded in the Park, including the Swamp Skink which is vulnerable in Victoria (CFL, 1990). A range of mammals occur in the park, including the White-footed Dunnart which is vulnerable in Victoria and the Swamp Antechinus which is near-threatened in Victoria (CFL, 1990). There are also six introduced mammals. Threatened and 'at risk' fauna recorded for Shallow Inlet are listed below.

Common name	Species name	Listed under the Victorian Flora and Fauna Guarantee Act 1988	Status in Victoria*
Swamp Antechinus	<i>Antechinus minimus maritimus</i>	L	LR
Cape Barren Goose	<i>Cereopsis novaehollandiae</i>		LR
Eastern Curlew	<i>Numenius madagascariensis</i>		LR
Great Egret	<i>Ardea alba</i>	L	Vul
Hooded Plover	<i>Thinornis rubricollis</i>	L	Vul
Little Tern	<i>Sterna albifrons</i>	L	Vul
Musk Duck	<i>Biziura lobata</i>		Vul
Pacific Gull	<i>Larus pacificus</i>		LR
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>		LR
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	L	Vul
White-footed Dunnart	<i>Sminthopsis leucopus</i>		Vul
Yellow-nosed Albatross	<i>Thalassarche chlororhynchos</i>		Vul
Swamp Skink	<i>Egernia coventryi</i>	L	Vul

Source: Atlas of Victorian Wildlife DSE (2003b) and CFL 1990.

*Status in Victoria

Vul Vulnerable: A taxon that is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future.

LR Lower Risk – near threatened: A taxon that has been evaluated, does not satisfy the criteria for any of the threatened categories, but which is close to qualifying for Vulnerable.

20. Social and cultural values:

Many aboriginal middens are found along the coast to the west of Shallow Inlet (CFL, 1990).

Shallow Inlet is popular for recreational activities such as fishing, sailboarding, camping and picnicking. A few commercial fishers are licensed to fish within the inlet except between the period 15 December to 15 February. There is also a commercial bait licence for the inlet (NRE unpublished draft).

21. Land tenure/ownership:

Shallow Inlet Shorebird Site is made up of Crown land as shown below.

Area of shorebird site	Land status
Shallow Inlet Marine and Coastal Park	Crown land temporarily reserved under the <i>Crown Land (Reserves) Act 1978</i> for the conservation of areas of natural interest or beauty or scientific history or archaeological interest and areas for public recreation and managed under the <i>National Parks Act 1975</i> .
Flora and Fauna Reserve on western shoreline and islands in the inlet	Crown land temporarily reserved under the <i>Crown Land (Reserves) Act 1978</i> for the conservation of native saltmarsh, flora and fauna. Reserve number Rs9805.
Shallow Inlet Saltmarsh Flora and Fauna Reserve	Crown land permanently reserved under the <i>Crown Land (Reserves) Act 1978</i> for the protection of the coastline. Reserve number Rs11070
Waratah Bay – Shallow Inlet Coastal Reserve (east of Sandy Point)	Crown land permanently reserved under the <i>Crown Land (Reserves) Act 1978</i> for the protection of the coastline. Reserve number Rs10892

22. Current land use:

(a) Land in the shorebird site:

- conservation and recreation.

(b) Surrounding area:

- The northern half of Shallow Inlet Shorebird Site is completely surrounded by freehold agricultural land used predominantly for dairying, sheep grazing and beef cattle production.
- To the south east the site adjoins Wilsons Promontory National Park.
- The south-western boundary adjoins the Waratah Bay – Shallow Inlet Coastal Reserve and the Sandy Point township.

23. Adverse factors affecting the ecological character of the site:

- Recreational activities require careful management to avoid adverse impacts on shorebird habitat and general disturbance to birds, particularly breeding birds. Human visitation is expected to increase if current trends continue (NRE unpublished draft).
- Pest animals, particularly cats and foxes, require careful management to reduce their impact on breeding shorebirds.
- Weeds require careful management to reduce their impact on the native vegetation communities. Although *Spartina* has been reduced in area it is not yet eradicated.
- Long term changes in the catchment, such as clearing of vegetation, nutrient runoff and erosion can impact negatively on water quality and hydrological regimes.
- Development on adjacent freehold land has the potential to impact negatively on the landscape values of the inlet.

24. Conservation measures taken:

Shallow Inlet Marine and Coastal Park was protected under the *Crown Lands (Reserves) Act* in March 1986. In April 1986 it was declared under the *National Parks Act*. Adjacent flora and fauna reserves are managed by Parks Victoria as part of the park. The park is managed by Parks

Victoria and the Sandy Point Foreshore Committee of Management in accordance with the requirements of the Acts. A proposed management plan that was produced for the Park in 1990. The management plan was updated in 1996 but not finalised and published. A community consultative group for Shallow Inlet Marine and Coastal Park was established in April 1989 to assist with the planning process for the management plan.

The Australasian Wader Studies Group conducts biannual counts of the waders and the Victorian Wader Study Group conducts population monitoring of Sanderling. There are also regular Hooded Plover counts conducted by Parks Victoria rangers.

25. Conservation measures proposed but not yet implemented:

The proposed management plan for Shallow Inlet Marine and Coastal Park (CFL 1990) sets out objectives and actions in relation to: boundary amendments and management zones, protection of wildlife, marine communities, flora; physical resources, landscape and cultural resources; management of recreation and visitor activities, facilities and commercial activities; working with adjacent landholders to protect the Park, research and monitoring and park management resourcing. Significant activities proposed but not yet implemented include rationalisation and consolidation of reservations for the Shallow Inlet Marine and Coastal Park.

The proposed management plan will be reviewed in 2006/07.

26. Current scientific research and facilities

There are no research facilities at Shallow Inlet.

The Victorian Wader Study Group regularly nets and releases Sanderling, as part of its monitoring programme into the breeding success of this species. This is part of an Australia-wide survey of breeding success for a wide variety of species. Parks Victoria conducts counts of shorebirds between the inlet mouth and the Surf Life Saving Club at Sandy Point.

27. Current conservation education:

Shallow Inlet Marine and Coastal Park is occasionally used by local schools for environmental education and by tertiary institutions as a field site for post-graduate research (mainly geology and geomorphology).

28. Current recreation and tourism:

Shallow Inlet Marine and Coastal Park is popular for recreational activities such as fishing, sailboarding, camping and picnicking. Total annual day visits to Shallow Inlet are estimated at 45,000. Sandy Point township has a resident population of 170 which peaks to about 4,000 in the summer (NRE unpublished draft).

29. References:

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