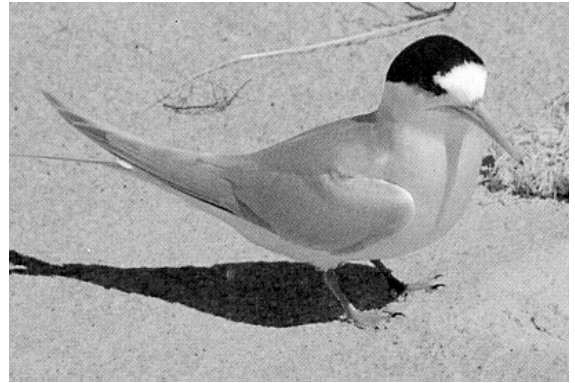


# Conservation assessment of beach nesting and migratory shorebirds in Tasmania



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Natural Heritage Trust Project  
No NWP 11990



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Department Primary Industries Water and Environment

2002



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## SUMMARY OF FINDINGS

### Summary of Information Compiled during the 1998 –1999 Shorebird Survey.

Information collected	Results
<b>Survey Effort</b>	
Number of surveys undertaken	863 surveys
Total number of sites surveyed	313 sites
Number of islands surveyed	43 islands
Number of surveys on islands	92 surveys
Number of volunteers	75 volunteers
Total number of participants	84 participants
Total number of hours spent surveying	970 hours of survey
Total length of all sites surveyed	1,092 kilometres surveyed
<b>Shorebird Species</b>	
No of shorebird species observed	32 species
No of shorebird species recorded breeding	13 species breeding
Number of breeding observations made	294 breeding observations
Number of surveys with a breeding observation	169 surveys
Total number of sites where species were breeding	92 sites
Highest number of species breeding per site	5 species breeding
Total number of species records made	3,650 records
Total number of bird sightings	116,118 sightings
<b>Site Disturbance Information</b>	
Number of surveys with disturbance information recorded	407 surveys
Number of individual sites with disturbance information	147 sites
Percentage of sites with No to Low impact disturbances	37.4 % of sites
Percentage of sites with High to Very High impact disturbances	62.6% of sites
Number of breeding sites with disturbance information collected	68 sites
Percentage of all sites with No to Low impact disturbances on breeding shorebirds	26.5%
Percentage of sites with High to Very High impact disturbances on breeding shorebirds	73.5%

### Priority Sites for Beach Nesting and Migratory Shorebirds in Tasmania

Site	Shorebird Value
Boullanger Bay / Robbins Passage which includes Bird Point, Five Islets, Mosquito Inlet (Robbins Island), Shipwreck Point (Perkins Is), Kangaroo Island, Montague Is, Wallaby Is, Seven Mile Beach (Anthony's Beach – east and west end)	Very high species diversity – stronghold for 17 species, priority site for resident species, priority site for Little Tern, Fairy Tern, long term monitoring site
Cape Portland / Little Musselroe	Very high species diversity – priority site for resident species, stronghold for Double-banded Plover, Sooty Oystercatcher, Little Tern, long term monitoring site
George Town / Tamar Estuary	Very high species diversity, good site for Eastern Curlew, priority site for resident species, long-term monitoring site

Site	Shorebird Value
Derwent region including Lauderdale, Clear Lagoon, Mortimer Bay, Pipeclay Lagoon, Calvert's Lagoon, South Arm Neck, Barilla Bay, Iron Creek, Carlton River, Five Mile Beach, Seven Mile Beach, Orielson / Sorell, Waterview Sanctuary	Very high species diversity, priority site for resident species, long-term monitoring site, priority site for Eastern Curlew, Whimbrel
Policeman's Point (includes The Gardens & the mouth of Anson's Bay)	Very high species diversity, priority site for resident species
Patriarch Inlet (Flinders Is)	Very high species diversity, priority site for resident species
Little Boomer	Very high species diversity, priority site for resident species
Steels Beach	High species diversity, priority site for resident species, priority site for breeding species, priority breeding site for Little Tern
Beaumaris Beach	High species diversity, priority site for resident species, priority breeding site for Little Tern
Lisdillon	High species diversity, priority site for resident species, priority site for breeding species including Little Tern, Fairy Tern
Great Musselroe	High species diversity
Ocean Beach (inc. mouth of Henty)	High species diversity, priority site for resident species, priority site for Sanderling
Orford Spit	High species diversity, priority site for resident species, priority site for breeding species, significant site for Fairy Tern
Scamander Spit & Barway & river mouth	Priority site for breeding species, priority site for Little Tern
Cameron Inlet / Logan's Lagoon (Flinders Is)	High species diversity, priority site for resident species, significant site for Fairy Tern
Cowper Point (King Is)	High species diversity, priority site for resident species, priority site for Little Tern
Moulting Lagoon	High species diversity, priority site for resident species
Marion Beach including Marion Bay causeway	High species diversity, priority site for resident species
Adelaide Bay (Flinders Is)	High species diversity
Little Swanport (lagoon mouth)	High species diversity, priority site for resident species
Meredith River (river mouth)	High species diversity, priority site for resident species
Moorland Point	Priority site for migratory species, significant site for Ruddy Turnstone
Lades Beach	Priority site for species diversity, significant site for many Tern species, monitoring site
Maurouard Beach (Peron Dunes)	Priority site for Fairy Tern and species diversity
Forwards & Picnic Beach	Priority site for resident species
Dianas Beach inc. Basin	Priority site for resident species, past site for Little Tern
Friendly Beaches	Priority site for resident species, priority site for Little Tern
Bruny Island - Great Bay, The Neck, Adventure Bay, Cloudy Bay, Lighthouse Bay	Priority site for resident species
Sandspit, Rheban	Priority site for resident species
Australia Point	Priority site for resident species
Bakers Beach	Priority site for resident species
Below Pollys Bay	Priority site for resident species
Horseshoe Bank	Priority site for resident species
Nye Bay	Priority site for resident species
Pebble Bay	Priority site for resident species
Pirates Bay	Priority site for resident species
Baynes Island	Priority site for breeding species including Fairy Tern
Lachlan Island	Priority site for breeding species

Site	Shorebird Value
Saltworks Beach	Priority site for breeding species
Green Island	Priority site for breeding species
Barren Island	Priority site for breeding species
Macleans Bay, Spike Bay (Clarke Is)	Priority site for Little Tern
Bioregional representation of beach nesting sites	Protection for the Hooded Plover

#### Shorebird Species in Tasmania of Conservation Concern.

Species	Status in Tasmania
Little Tern	TSPA = Endangered, status appropriate
Fairy Tern	TSPA = Rare, status requires review
White-fronted Tern	TSPA = Rare, status requires review
Eastern Curlew	TSPA = Endangered, status appropriate
Hooded Plover	Conservation Concern – declining pop'n, requires TSPA assessment
Pied Oystercatcher	Conservation Concern – declining pop'n, requires TSPA assessment
Pacific Golden Plover	Conservation Concern – declining pop'n, requires TSPA assessment
Red-necked Stint	Conservation Concern – declining pop'n, requires TSPA assessment
Caspian Tern	Conservation Concern – very low numbers, requires TSPA assessment
Whimbrel	Conservation Concern – very low numbers, requires TSPA assessment
Great Knot	Conservation Concern – very low numbers, requires TSPA assessment
Terek Sandpiper	Conservation Concern – very low numbers, requires TSPA assessment
Grey-tailed Tattler	Conservation Concern – very low numbers, requires TSPA assessment
Banded Lapwing	Conservation Concern – low numbers, requires TSPA assessment
Black-fronted Dotterel	Conservation Concern – low numbers, requires TSPA assessment
Sooty Oystercatcher	Conservation Concern – low numbers, requires TSPA assessment
Grey Plover	Conservation Concern – low numbers, requires TSPA assessment
Lesser Sand Plover	Conservation Concern – low numbers, requires TSPA assessment
Pacific Gull	Requires Monitoring – small population size with threats occurring
Red Knot	Requires Monitoring – small population size
Sharp-tailed Sandpiper	Requires Monitoring – small population size
Common Greenshank	Requires Monitoring – small population size
Sanderling	Requires Monitoring – small population size
Bar-tailed Godwit	Requires Monitoring – small population size
Double-banded Plover	Requires Monitoring – small population size
Ruddy Turnstone	Requires Monitoring – national declines recorded

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## NHT PROJECT OUTLINE

### NHT PROJECT FUNDED 1998-1999

This project was funded through the amalgamation of two separate but closely related NHT grant submissions by the Department of Primary Industries Water and Environment and Birds Tasmania to survey coastal shorebirds around Tasmania. These were:

- Conservation Strategy and Management of Tasmania's Shorebirds - submitted by Birds Tasmania (regional group of Birds Australia) - Community Group Application – NWP 09447
- Protection of Threatened Nesting and Migratory Shorebirds in Tasmania - submitted by Threatened Species Unit, DPIWE - National Partnership Arrangements – NWP 11990

Both applicants received part funding from NHT to achieve Action 1 and were therefore combined.

**ACTION 1** Undertake an inventory of coastal shorebirds in Tasmania through survey and collation of existing data. Objectives will be achieved after year 1 when an inventory is produced of species' locations, their conservation assessment and identification of essential habitats including 'hot spots'. The assessment will be detailed to obtain information on beach type, breeding sites and localities, breeding productivity, areas of sensitivity, disturbance factors, etc. An interim report will be produced on species distribution and conservation status.

### Nature Conservation Branch Tasks

Design and implement a statewide survey for volunteers using repeatable and simple survey techniques. In addition to volunteers, undertake specialist shorebird surveys around the State including targeted site searches. Collect information on other attributes affecting beach nesting and migratory shorebirds. Collate existing information and enter all new information including from the Birds Tasmania volunteers onto a database. Analyse results and produce a report on the findings.

### Birds Tasmania Tasks

To initiate and maintain a network of volunteer bird watchers to monitor designated coastal sites on a regular basis throughout the 1998 – 1999 breeding season. To provide advice and regular updates to volunteers including site visits. To increase awareness of the project aims. To operate in conjunction with the DPIWE component of the project.

## ACKNOWLEDGEMENTS

Financial assistance from the Natural Heritage Trust – National Wetlands Program, Environment Australia to undertake this project is gratefully acknowledged. This project has only been possible due to the contributions of a great number of people, mostly volunteer who have provided time, records and specialist skills in assessing shorebirds around Tasmania. This project is a representation of their tremendous efforts. Particular thanks are due to:

- Beatrice Bentley (Birds Tasmania) for co-ordinating all the volunteers
- Alan Fletcher for specialist surveys around the State
- the 75 volunteers who contributed records and regularly surveyed beaches, especially Don & Liz Jones, Sue Lovell, Tim McManus, Tomoko Chida, Beth Gregory, Tom MacFarlane, Rosemary Tuxworth and Gary Watts
- Priscilla Park - expert knowledge, personal records and continuing assistance for many years
- Bill and Maggie Wakefield – plethora of records and specialist surveys particularly on islands
- Ralph Cooper and Peter Duckworth - specialist surveys in the northeast and historical records
- Darryl Binns and Jim Napier- surveys around the St Helens and east coast area
- Tim Reid - construction of shorebird database and Yuzuru Hyakutake - for weeks of data entry
- Eric Woehler - personal records and other records collected from Birds Tasmania surveys
- Stewart Blackhall - permission to use Moulting Lagoon counts and assistance with wader counts
- James Hunter – annual survey records for Moorland Point
- Simon Plowright -organisation and logistics for the northwest wader count
- Trixi Madon, Peter Cotsell and Kathy Eyles from Environment Australia for their input and support
- Doug Watkins from Wetlands International – Oceana for support and advice on Ramsar criteria



## INTRODUCTION

### TASMANIA'S BEACH NESTING AND MIGRATORY SHOREBIRDS

Tasmania's coastal fauna includes significant populations of birds which are dependant on the beach and dunes for breeding and the littoral zones, mudflats and estuaries for feeding and roosting. Tasmania has over 4,700 km of coastline and 334 islands much of which provides habitat for shorebirds. Of Tasmania's 43 species of breeding and migratory shorebirds, 12 species are resident and breed locally while 31 species migrate to Tasmania annually from other parts of the world. Being the most southerly point of the East Asian-Australasian Flyway, Tasmania is an important destination for many migratory species that spend their winter months in the Southern Hemisphere.

Detailed descriptions of all the species covered in this project are provided in the Handbook of Australian, New Zealand and Antarctic Birds Volume 2 and 3 (Marchant & Higgins 1993, Higgins & Davies 1996) or in any recognised Australian bird field guide. More general texts on shorebirds have been produced by Lane (1987) and Pringle (1987).

### RESPONSIBILITIES FOR COASTAL MANAGEMENT IN TASMANIA

The management of coastal areas and protection of shorebirds is legislated under the following articles:

#### **State Coastal Policy 1996**

– Applies to all statutory authorities in Tasmania, and states that (1) natural and cultural values of the coast shall be protected (2) the coast shall be used and developed in a sustainable manner and (3) integrated management and protection of the coastal zone is a shared responsibility. Outcome 1.1.3 states that the coastal zone will be managed to conserve the diversity of all native flora and fauna and that appropriate conservation measures will be adopted for the protection of migratory species and the protection and recovery of rare, vulnerable and endangered species in accord with other relevant Acts and legislation.

#### **Convention on Wetlands of International Importance (Ramsar Convention)**

- The Ramsar Convention maintains a List of Wetlands of International Importance of which Tasmania has ten sites (see Ramsar section). Sites are selected using criteria based on international significance in terms of ecology, botany, zoology, limnology or hydrology.

#### **JAMBA / CAMBA**

- Agreements between the Australian Government and the People's Republic of China for the protection of migratory birds (CAMBA) and with the Government of Japan for migratory birds and those in danger of extinction and their habitat (JAMBA). These two agreements foster international co-operation to protect migratory birds and promote measures such as controlling the taking of migratory birds, establishing sanctuaries, undertaking joint research and exchanging information.

#### **National Parks and Wildlife Act 1970**

- All shorebirds covered in this report are wholly protected under the Tasmanian *National Parks and Wildlife Act 1970* and listed on the *Wildlife Regulations 1971*. It is an offence to take, harm or disturb them without a permit.

#### **Living Marine Resources Act 1995**

- 'Tasmanian waters' mean waters within the limits of the State of Tasmania and the coastal waters of Tasmania as described in the *Coastal Waters (State Powers) Act 1980* (Commonwealth), and any other waters to which legislative power of the State extend. This Act covers the harvest of kelp, shellfish, clams and other beach products upon which shorebirds depend.

### **Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and Tasmania's Threatened Species Protection Act 1995**

- These Acts provide for extra protection and management of native species which are classified as threatened either in the national or state context. The EPBC Act 1999 provides for new environmental impact assessment and approval processes for threatened species and gives special recognition to migratory species. Under this Act, any actions that have or are likely to have a significant impact on Ramsar wetlands and migratory bird species (under JAMBA / CAMBA) require Commonwealth approval before proceeding.

### **THE EAST ASIAN-AUSTRALASIAN FLYWAY**

Nationally, Australia has 15 species of resident (breeding) shorebirds, a further 36 shorebird species that are regular migrants and another 16 species that visit occasionally. All but one species of shorebird that migrate to Australia and Tasmania are trans-equatorial migrants that breed in northern China, Mongolia, Siberia and Alaska during June and July each year, and then migrate south for the non-breeding season. The exception being the Double-banded Plover which migrates from New Zealand to spend the winter in southern States. The migration route of these species is termed the East Asian-Australasian Flyway and can extend some 12,000 km to within the Arctic Circle to more than 40 degrees south to Tasmania and New Zealand.

Over 20 countries are part of the East Asian-Australasian Flyway and the total number of birds using this route has been estimated at between 4 to 6 million (Watkins 1994). The East Asian-Australasian Shorebird Site Network is an initiative under the Asia Pacific Migratory Waterbird Conservation Strategy 2001 – 2005 (previously 1996 - 2000) and the Action Plan for the Conservation of Migratory Shorebirds in the East Asian-Australasian Flyway 2001-2005 (which implements a component of the Strategy). These frameworks enable all sectors of the Asia – Pacific region (Gov, NGO, technical experts, etc.) to come together to promote the conservation of wetlands and waterbirds. The Network includes 29 sites from 10 countries including 2 sites in Tasmania (Logan's Lagoon on Flinders Is. and Orielton/Pittwater in the Derwent region).

Tasmania's geographical position places it at the extremity of the southern end of the range of Palaearctic migratory shorebirds. Tasmania, therefore serves as the final resting and feeding site for many individuals before they return to breeding grounds. While Tasmania, compared to some other Australian States, has a smaller compliment of migratory visitors it is the stronghold for several species and is likely to become increasingly important when other more proximal areas become unavailable or reach saturation population densities. Newman (1982) presented results based on the 1982 National Bird Atlas (Blakers *et al.* 1984) which suggested that Tasmania was potentially not only the stronghold for some species such as the Hooded Plover but that a number of other migratory and resident shorebird species occurred in Tasmania in greater densities than other States (e.g. Sooty Oystercatcher, Pied Oystercatcher, Double-banded Plover).

### **RAMSAR SITES IN TASMANIA**

One of the criteria used to identify wetland areas of international importance under the Ramsar Convention is its capacity to support 1% or more of the total population of a species. Australia currently has 57 Ramsar sites of which 10 occur in Tasmania. Tasmania has a further site (Boullanger Bay/Robbins Passage) that meets Ramsar criteria but has not been formally listed.

- East Coast Cape Barren Island Lagoons - 4230 ha
- Little Waterhouse Lake, Waterhouse area, northeast coast - 90 ha
- Logan Lagoon Conservation Area, Flinders Island - 2320 ha
- Moulting Lagoon, Moulting Lagoon Game Reserve, Freycinet - 3930 ha
- Interlaken Lakeside Reserve - 270 ha
- Pittwater - Orielton Lagoon, Sorell - 2920 ha
- Sea Elephant Conservation Area, Lavinia Nature Reserve, King Island - 1730 ha
- Apsley Marshes, Bicheno - 600 ha
- 'The Chimneys' Ringarooma Marshes, Ringarooma - 90 ha
- Jocks Lagoon, St Helens - 10 ha
  
- Boullanger Bay/Robbins Passage, northwest Tasmania – meets Ramsar criteria

## SHOREBIRD SURVEYS AND RESEARCH IN TASMANIA

Tasmania is in the enviable position of having conducted and published over 30 years of nearly consecutive bi-annual counts of waders at study sites throughout Tasmania. David Thomas started these counts in 1965 and apart from 1970 and 1971, there has been an almost continuous coverage of most sites across summer and winter, by members of the Tasmanian Shorebird Study Group (now Birds Tasmania) and their friends. Results of these surveys and a host of additional significant research and observational work on shorebird species, including systematic lists, has been published in two main reference journals: *An Occasional Stint* (Bulletin 1 – 4, 1982-1986), and the *Tasmanian Bird Report* (TBR) (Vol 1-28, still active).

The first published survey of waders in Tasmania was in the Derwent Estuary and Pittwater region in 1972 (Tas. Bird Report No. 2). Distribution maps for Palearctic waders in Tasmania were first published in 1977 in Tas. Bird Report No. 7 together with some numbers from areas in the north-west. In 1993, Tas. Bird Report No. 22 included the counts from the north and north-east of the State for the first time, earlier data for this area are available. The Tas. Bird Report No. 23 1994, was the first time the area was included in the summer and winter wader counts, although R. Ashby had previously published wader counts for the north-west (Tas. Bird Report No. 16, 1987; Tas. Bird Report No. 19, 1990; and in *The Stilt* 19, 1991). Intensive monthly counts of many of the Tasmanian wader sites were conducted in the period 1980 to 1985 and this data entered on the Australasian Wader Study Group's database. Intensive surveys have also been conducted by P. Duckworth and R. and B. Cooper at several study sites in the northeast and north of the State for over 25 years and are still continuing. Other specialists particularly P. Park, M. Newman, R. Patterson, A. Fletcher, L. Wall, W. Wakefield, K. Harris and E. Woehler have conducted numerous specific surveys or undertaken selected research on most of Tasmania's shorebird species.

Bird lists including wader species for the Furneaux region have been provided over a long period of time by Green (1969), Whinray (1970, 1971, 1972, 1975, 1976, 1977, 1980, 1982), Milledge (1983), Newman *et al.* (1984) and Schulz (1990).

General descriptions, distributions and reviews of beach nesting and migratory shorebird species can be found in Thomas (1979), Blakers *et al.* (1984), HANZAB Volumes 2, 3 (Marchant & Higgins 1993, Higgins & Davies 1996), Bryant and Jackson (1999) and Garnett and Crowley (2000). Distribution and breeding of the Fairy Tern and Little Tern have been reviewed by Rounsevell (1983) and an RAOU conservation statement by Hill *et al.* (1988). Specific surveys have been published for the Hooded Plover for over ten years (Holdsworth & Park 1993, Schulz 1993, Moore 1994, Woehler & Park 1997) and an RAOU Conservation Statement for this species has been produced by Schulz and Bamford (1987). A National Plan for Shorebird Conservation in Australia, which identified important sites in Tasmania, was first produced by Watkins (1993) and is currently being updated. More recently an Action Plan for the Conservation of Migratory Shorebirds in East Asian-Australasian Flyway 2001-2005 has been produced (Shorebird Working Group of Wetland International - Asia Pacific 1999, Environment Australia, Canberra).

Invaluable research by Nigel Brothers (Brothers *et al.* 2001) has provided basic inventory information for seabirds and other bird fauna on over 300 offshore islands around Tasmania. This reference contains information for species such as the Pied and Sooty Oystercatchers, Hooded Plover and all the species of Terns at many difficult to access and seldom visited sites. This work is complimented by similar long-term survey work undertaken by W. and M. Wakefield, a summary of which has been published in the Tas. Bird Report No. 27, 1998.

A multitude of research projects have been undertaken on shorebird species in Tasmania investigating a wide range of factors such as habitat requirements or ecological variables. Key references for these works have been provided in the bibliography of this report and most initial projects are covered in the journal *An Occasional Stint* (Bulletin 1-4).

## REQUIREMENTS OF BEACH NESTING AND MIGRATORY SHOREBIRDS IN TASMANIA

The habitats in Tasmania that are used by beach nesting and migratory shorebirds are the non-forested open habitats around the coastline or occasionally inland. These include spits, estuaries, river mouths, tidal mud flats, salt marsh, saline wetlands, sand dune and sandy beaches, coastal sheets and sand ridges incorporating closed herbfields or marsupial lawns and rocky coastlines.

### Nesting

Every species of shorebird that breeds in Tasmania requires specific conditions which may vary between species and between sites. Some species breed in isolated pairs, while others nest colonially either tightly clustered or in looser groupings. The most typical coastal habitat used as breeding sites are sandy beaches, coastal saltmarsh, coastal mudflats, rocky outcrops, sand spits, estuaries and sandbars. Several species concentrate their breeding on offshore islands such as the White-fronted Tern, Caspian Tern and most gull species. Shorebird nests are generally simple constructions being a shallow scrape or depression on the ground usually with little or no nesting material. They are often situated just above the high tide mark or on raised banks or dunes. Eggs are well camouflaged and nests are invariably in the open enabling parent birds full view of the surroundings and any approaching threats. Coastline containing introduced vegetation such as marram grass, rice grass, sea spurge or any other dense native or exotic vegetation types, are not suitable as breeding sites.

The most common breeding species in Tasmania is the Red-capped Plover. This species also has the most flexible breeding requirements, from salt or freshwater marshes to the margins of both salt and freshwater lagoons and from sea level to the high altitude lakes of the Central Highlands. Red-capped Plovers commonly breed on the spits at the mouths of creeks and rivers, but also at the base of dunes on wider beaches and among the native grasses. It will often nest in close proximity to others of its species and occasionally Hooded Plovers.

The Hooded Plover prefers sandy ocean beaches, but is occasionally found at other sites such as nearby dry lagoon beds. Nests are situated on sandy beaches and spits, in close proximity to the high tide mark, often on the widest expanse of sand. It requires a territory (an exclusive zone) of several hundred metres, which it will defend and drive out other Hooded Plover, although tolerant other small plovers.

The Pied Oystercatcher breeds on ocean beaches and also around the shores of larger river estuaries. Breeding age of species is at least 4 years old and pairs defend their territories for much of the year, faithful to the same sites year after year. The nest site is frequently within a few metres of the high tide mark on a raised area of saltmarsh or shell or sand spit. In contrast, the Sooty Oystercatcher breeds mainly on rocky coasts and often on offshore islands.

Fairy Tern and Little Tern have identical breeding site requirements. Both species prefer to nest colonially, with nests often being only a few metres apart. Preferred sites are shell and sand spits at the mouths of smaller rivers and creeks. Their preference for colonial nesting enables them to combine and successfully drive off natural predators.

### Feeding and Roosting

At regular periods throughout the day and night, shorebirds (particularly migratory species) feed on intertidal mudflats and beaches which are exposed at low tide and then roost (rest) at high tide just above the water level. These habitats are rich in invertebrates and shorebirds have developed a variety of techniques (and beak shapes) enabling their extraction, such as probing deep into the substrate, hunting under or in-between beach strewn debris or gathered from the surface. A range of food items are consumed including limpets, snails, chitons, mussels, clams, bivalves, pipi, crabs, barnacles, sandhoppers and other amphipods, worms and sea squirt. The feeding habitat for many migratory species is typified by an elevation above mean low water of no more than 10% of area 'high and dry'; at least 50% of area 'wet', no more than 50% of area 'shallow' (to 50 mm deep) and no restriction on tidal flow. Studies have shown that each species requires differing areas for feeding, for example, Bar-tailed Godwit require an area of intertidal flat of at least 10.5 ha (Lane 1987). Landform and vegetation surrounding feeding sites also influence the location and use of high tide roost sites.

During migration shorebird species stopover at different intermediate staging sites targeting the most productive ecosystems such as wetlands. These sites are essential so that birds are able to build up their fat reserves to sustain the long flight home and rapid return to breeding condition.

## **THREATS TO COASTAL SHOREBIRDS IN TASMANIA**

### **Natural Impacts**

Coastal habitats are exposed to continual threats from natural processes such as storms, tides including unusually high tides, shore erosion and accretion. Inundation by high tides and swollen rivers affects the success rate of a high proportion of beach breeding shorebirds in Tasmania. The breeding season commences in early spring – when spring tides reach peak levels. Inundation of nests during this period results in any second breeding attempt coinciding with summer and higher likelihood of disturbance from humans. These incidents have been documented numerous times in the systematic lists of the Tas. Bird Report and in specific reports (e.g. Napier 1972, Newman 1989, Alcorn *et al.* 1994, Binns 1998, etc.).

Shorebirds are subject to many natural predators, ranging from birds of prey, gulls, ravens, and other native mammal and reptile species (Rose 2001). The presence of large numbers of gulls exacerbated by tips, picnic sites, fish cleaning areas, etc. pose a real threat to the young and eggs of nesting shorebirds. In recent years, Kelp Gulls have nested or attempted to nest in areas that have substantial numbers of other breeding shorebirds.

### **Human Associated Impacts**

Human associated impacts include the increasing demand on coastal areas for recreation and exploitation especially during summer (i.e. the breeding season). These activities include for example, beach walking, exercising dogs (on and off lead), swimming and other group activities, the use of vehicles (4WDs, quad bikes and other off-road vehicles, etc. on beaches and dunes), feral and domestic animal disturbance and predation (e.g. stock grazing on coasts, dogs on beaches, feral cat predation, etc.). Other human associated impacts include depleted food supplies through fishing, harvesting of seaweed and shore bivalves, sand mining, urban encroachment and coastal subdivision, changes in habitat particularly dune formation due to weeds like marram grass, rice grass and sea spurge, pollution from sewage effluent, industrial and agricultural runoff, oil spills and heavy metal accumulation. Interfering with the natural flow of rivers also threatens the existence and natural integrity of sandbars and spits used for breeding. Human associated impacts threatening beach nesting and migratory shorebirds continue to be documented (Schulz & Bamford 1987, Buik & Paton 1989, Retallick & Bolitho 1993, Schulz 1993, Garnett & Crowley 2000).

Some beach activities have minimal impact on shorebird breeding success, except where the numbers of people participating is very high. Individuals walking on beaches, for example, causes short term disturbance to breeding birds but usually no long-term impact. Similarly, horse riding, if done with care and understanding of the need to keep close to the water line, has passing impact. If riding occurs at the top of the beach or at high tide, there is a high risk of trampling of both young and eggs. Surfers, sunbathers and other beach users, because of their presence on the beach for prolonged periods, may keep adult birds from their young or eggs, and are likely to cause breeding failure. Dogs, particularly off lead are well documented as a major threat to breeding birds particularly eggs and chicks. Surfers have been noted with dogs that are allowed to roam while their owners are surfing, which is also detrimental to breeding birds, both on the beach and in the surrounding areas. The increasing pressure to use vehicles and trail bikes on Tasmania's beaches has opened up previously isolated areas of coast and increases disturbance during the summer period.

Many of the bays and off shore waters around the State are increasingly being used for aquaculture. The need to access growing areas by driving on beaches is a serious threat, as is, in some areas, the practice of building processing sheds in close proximity of the shoreline. There is considerable disturbance around processing sheds, at all hours with some being frequently floodlit at night causing disturbance to roosting birds.

Beachwashed kelp is an invaluable and essential resource to shorebirds with over 40 bird species utilising beachcast vegetation in some way (McCulloch 1996). Tidewrack provides a number of key features,

firstly as a major food repository for invertebrates especially small crustacea such as sandhoppers or landhoppers, kelp flies, etc., and secondly as shelter from bad weather and camouflage from predators (especially as a refuge for chicks). Kelp is harvested commercially on King Island for processing into alginates and several other ventures especially on the west coast are being considered for licenses.

Many of these activities and their impact on beach breeding shorebirds have been documented by the Tasmanian Shorebird Study Group and Birds Tasmania members over the past 25 years.

### **Introduced Plants especially Marram Grass**

The introduction and spread of exotic coastal plants such as *Ammophila arenaria* (Marram Grass), *Spartina maritima* (Rice Grass), *Ulex europaeus*, (Gorse) and *Euphorbia paralias* (Coastal Sea Spurge) have displaced native dune species and made dunes and beaches above the high tide mark unsuitable as nesting sites for shorebirds. In particular, Marram Grass which is native to Europe, has been introduced to beaches around the world including Australia and Tasmania to stabilise sand. This plant has subsequently had a major impact on foredune formation (Heyligers 1985). Through its aggressive colonisation, Marram grass allows high tides to remove the base of the dune, while binding the top, thus causing a steep faced profile to develop. The base of the dune is then unsuitable as a nest site for shorebirds because of lack of visibility of predators and the probability of sand covering the site (Park 1994). Many shorebirds prefer to nest in the open, native grass strewn, gently sloping dune. This preference, makes inundation less likely, as they nest higher up the beach.

## **METHODS**

### **SHOREBIRDS COVERED BY THIS PROJECT**

Four groupings of birds were used in this project to represent Tasmania's 'beach nesting and migratory shorebirds'. The resident (i.e. breeding) species were: waders (Haematopodidae, Charadriidae, Vanellinae), terns (Sterninae) and gulls (Larinae). Gulls, although not commonly considered shorebirds, were included because they have formed part of the Tasmanian annual wader counts for many years and their conservation is dependent on appropriate coastal management. Migratory shorebird species included all those in the Family Scolopacidae.

This project covered 32 species

#### **RESIDENT – 15 species**

- Masked Lapwing *Vanellus miles* (note – this is not specifically a beach breeding species)
- Banded Lapwing *Vanellus tricolor* (note – this is not specifically a beach breeding species)
- Sooty Oystercatcher *Haematopus fuliginosus*
- Pied Oystercatcher *Haematopus astralegus*
- Red-capped Plover *Charadrius ruficapillus*
- Hooded Plover *Thinornis rubricollis*
- Black-fronted Dotterel *Elsemyornis melanotus*
- Little Tern *Sterna albifrons*
- Fairy Tern *Sterna nereis*
- Crested Tern *Sterna bergii*
- Caspian Tern *Sterna caspia*
- White-fronted Tern *Sterna striata*
- Pacific Gull *Larus pacificus*
- Kelp Gull *Larus dominicanus*
- Silver Gull *Larus novaehollandiae*

#### **MIGRATORY – 17 species**

- Red Knot *Calidris canutus*
- Great Knot *Calidris tenuirostris*
- Sharp-tailed Sandpiper *Calidris acuminata*

- Curlew Sandpiper *Calidris ferruginea*
- Terek Sandpiper *Xenus cinereus*
- Common Greenshank *Tringa nebularia*
- Ruddy Turnstone *Arenaria interpres*
- Sanderling *Calidris alba*
- Pacific Golden Plover *Pluvialis fulva*
- Whimbrel *Numenius phaeopus*
- Eastern Curlew *Numenius madagascariensis*
- Grey-tailed Tattler *Heteroscelus brevipes*
- Bar-tailed Godwit *Limosa lapponica*
- Red-necked Stint *Calidris ruficollis*
- Double-banded Plover *Charadrius bicinctus*
- Grey Plover *Pluvialis squatarola*
- Lesser Sand (Mongolian) Plover *Charadrius mongolus*

### Species not Included

This project did not include groups such as the albatrosses, gannets, shearwaters, cormorants, penguins, petrels or prions, which are more commonly termed 'marine or seabirds'. Other shorebird species not addressed in this report or recorded during this survey were:

- Black-tailed Godwit *Limosa limosa* – infrequently recorded in Tasmania, usually single birds in the southeast, last recorded in 1977
- Hudsonian Godwit *Limosa haemastica* – infrequently recorded, last reported Orielton Lagoon – Lauderdale area in 1991/92 (Patterson *et al.* 1994)
- Little Curlew *Numenius minutus* – infrequently recorded, single birds, reported 1965, 1966 and at Cape Portland in 1988
- Marsh Sandpiper *Tringa stagnatilis* – vagrant single birds, 5 records between 1969 and 1990
- Wood Sandpiper *Tringa glareola* – infrequently recorded, 3 records between 1967 and 1978
- Common Sandpiper *Actitis hypoleucos* – uncommon in Tasmania, few records since the 1980s
- Little Stint *Calidris minuta* – regularly recorded between 1980 to 1988, few records since
- Pectoral Sandpiper *Calidris melanotos* – 30 reports between 1971 and 1991, few regularly since
- Black-winged Stilt *Himantopus himantopus* – only recently establishing and sighted regularly
- Latham's Snipe *Gallinago hardwickii* – prefers inland areas and not a specific coastal species

### HOW INFORMATION WAS COLLECTED

Information was obtained in the following ways:

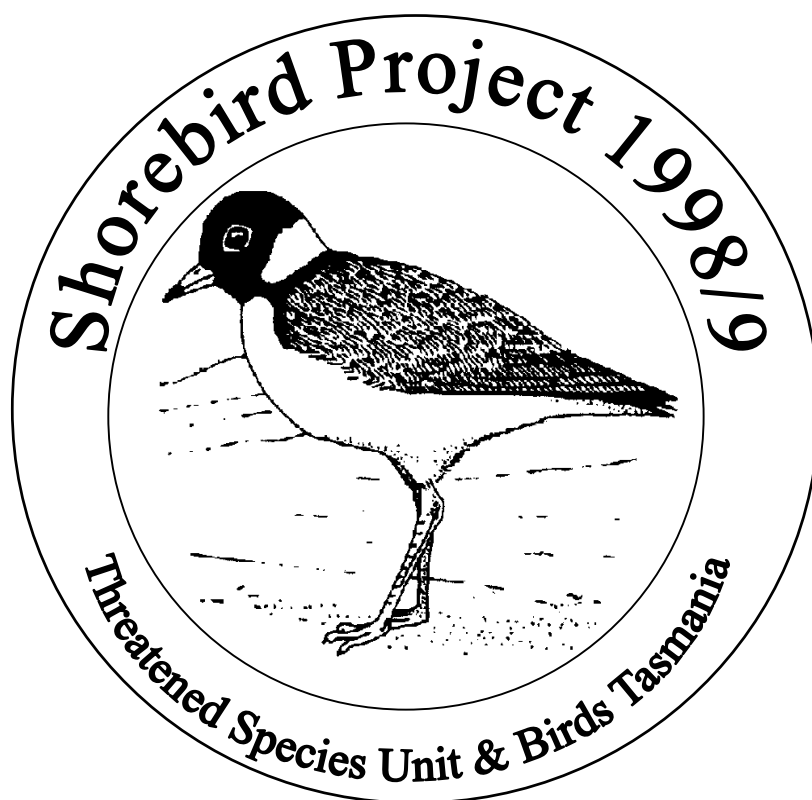
- beach surveys conducted by volunteers around Tasmania during 1998 – 1999
- targeted site surveys by specialist shorebird officer Alan Fletcher
- survey records obtained from specialists Bill and Maggie Wakefield
- historical information including long-term records from specialists Peter Duckworth, Ralph Cooper, and Priscilla Park
- records and site surveys by Priscilla Park, Darryl Binns, Eric Woehler, James Hunter, Sally Bryant
- island surveys by Nigel Brothers and Bill and Maggie Wakefield
- targeted survey of important areas or species (Moulting Lagoon, Robbins Passage - Boullanger Bay, southwest coastline, Birds Tasmania Summer and Winter Wader Counts / Hooded Plover Counts)
- literature search and other correspondence received

### CO-ORDINATION AND PARTICIPATION OF VOLUNTEERS

A Birds Tasmania Volunteer Co-ordinator Beatrice Bentley established a Statewide network of volunteers to undertake regular surveys of beaches over the 1998-1999 breeding season. Approaches for volunteer assistance were made to members of Birds Tasmania, DPIWE specialists, all Parks and Wildlife Service rangers managing coastal reserves, related organisations such as Coastcare, Wildcare, Landcare, the Environment Centres, Field Naturalists and Marine Naturalists, as well as the Parks and Wildlife volunteer register. Various assistance was forthcoming from all of these groups.

An information kit was provided to every volunteer containing an instruction sheet, survey forms with provision for location sketches, a completed sample form with some identification drawings, a marram grass information sheet and a shorebird sticker (Figure 1). Training sessions were held on site for several groups of volunteers. Publicity was generated through newsletters and the media and some specialist training was provided for those wanting to upgrade their identification skills. Volunteers were kept regularly updated and received follow up letters or phone calls from the co-ordinator. This information forms part of a separate report by B. Bentley for NHT Project NWP 09447.

128 people responded to an initial contact letter seeking assistance with surveys. Not all these people subsequently participated in surveys, returned survey forms or had their survey results included. Some survey forms were rejected because they were illegible, lacked sufficient site or species information or contained inaccurate species lists (despite the co-ordinators efforts to clarify). In total 75 volunteers supplied information on shorebirds and completed data sheets to a reliable standard.



**Figure 1 Shorebird Sticker produced for this project.**

#### **SHOREBIRD SURVEY FORM**

A survey form, designed to be as simple as possible, was used by all volunteers for site surveys. It contained explanatory notes, some basic descriptions and an example of a completed form. The recording technique aimed to collect information about species and where they were positioned on the beach (e.g. clustered at one end around a stream). Information from the survey form was entered on to the shorebird database. Several volunteers provided meticulously detailed forms and observations to a very high standard (see example provided).



## **SURVEY BOUNDARY AND REGIONS**

The coastal zone was defined as all open areas of tidal waters and mudflats, foreshore, dunes, sandy or rocky beaches, and those wetlands, marshes, lagoons or swamps directly on the coast. The State was zoned according to region (N, NE, NW, E, S, SW, SE, W and their associated islands) using the 1:25,000 TASMAR series.

## **SURVEY PERIOD**

The survey period for this project was from September 1998 to May 1999, except for some records included earlier in 1998 which were provided by W. & M. Wakefield. All records collected during this period were entered onto the shorebird database. Shorebird breeding records collected from 1990 to 1998 were included in the assessment but not entered onto the database.

## **TREATMENT OF OBSERVER INFORMATION**

Only survey forms from volunteers who had reliable shorebird identification skills were included on the database. Any unknown or unusual shorebird record that could not be verified was not included on the database. In those cases where data on the site visit was missing and could not be obtained, a standard substitute was made (standard survey time of one hour, a standard survey beach length of one kilometre). TASMAR 1:25,000 map sheets were used to obtain total beach length and the grid reference for the midpoint of each site to aid with identification.

## **SHOREBIRD DATABASE**

All observer, species and site information (location, time taken, beach length, length of survey, beach type and disturbance factors) collected during this project was entered onto a specially constructed Microsoft Access 97 database. A range of additional site information was requested on the Shorebird Survey form (Figure 2) such as land use, weather, tide, key beach features, vegetation type, position of species on the beach, etc. as it was hoped this information would assist in building a picture of shorebird areas throughout Tasmania. Unfortunately, the errors in reporting and range of responses for these variables precluded nearly all of them from being used. 'Beach Disturbance' was well reported and analysed in this report. Beach Disturbance was formatted and ranked in the database as shown in Table 1.

**Table 1 Categories for recording beach disturbance.**

<b>Disturbance Indicators</b>	<b>Impact on Shorebirds</b>
No disturbance reported	0 - No
1-2 people walking on beach and or undertaking low impact recreation (swimming, fishing)	1 - Low
More than two people, with or without dogs high impact recreation / dogs or stock roaming unattended	2 - High
Group activities + - pets / vehicles, bikes etc, on beach (or tracks seen)	3 - Very High

## **SURVEY LOCATIONS**

### **1. Targeted Sites**

Alan Fletcher was contracted to target well known locations around the State to collect information on breeding and the more difficult to identify species. The sites surveyed are shown in Table 2.

### **2. Remote Beaches of Southwest Tasmania**

Surveys of 18 remote sites in southwest Tasmania were undertaken between 11 - 15 January 1999 in conjunction with a west coast cleanup sponsored by the Tasmanian Surf Riders Association. Additional beaches were surveyed just prior to this in December 1998 and just after in February 1999 by Janet Fenton and family. Table 3 lists the details of the sites and surveys undertaken (see Appendix A for locations).

**Table 2 Sites Surveyed by A. Fletcher.**

<b>Dates Surveyed</b>	<b>Site Name</b>
20/11/98	Adventure Bay Beach (Bruny Is)
21/11/98	Barilla Bay
12/01/99	Bay of Fires
12/11/98	Bell Buoy
16/11/98	Boobyalla Reserve
13/11/98	Bridport
09/11/98, 07/12/98	Calvert's Lagoon
27/10/98	Clear Lagoon
20/11/98	Cloudy Bay (Bruny Is)
16/12/98	Connelly's Beach
16/12/98	Dunalley
28/10/98, 15/11/98, 13/01/99	George Town Reserve
21/01/99	Launderdale Coastline (Ralph's Bay)
07/10/98, 16/10/98	Lisdillon Beach
08/10/98, 10/01/99	Little Boomer
16/11/98, 14/01/99	Little Musselroe
28/10/98	Low Head
10/12/98, 10/01/99	Marion Beach
20/10/98, 23/11/98	Meredith River (river mouth)
10/11/98	Mortimer Bay
16/11/98, 15/01/99	Musselroe
09/02/99	Ocean Beach
22/12/98, 06/01/99	Orford Spit
16/10/98, 05/11/98, 30/12/98, 26/01/99	Orielton Lagoon
16/02/99, 27/02/99	“ “
22/10/98	Pelican Rocks
07/12/98, 31/12/98, 28/02/99	Pipeclay Lagoon
12/01/99	Policeman's Point
13/11/98	Ranson's Beach
19/11/98, 23/11/98	Saltworks Beach
06/10/98, 22/12/98	Sandspit
20/11/98	Simpson's Bay (Bruny Is)
08/11/98, 22/11/98, 30/12/98	Sorell
15/10/98, 04/11/98, 09/12/98	South Arm Neck (Ralph's Bay W. Sanctuary)
12/01/99	Steels Beach
20/11/98	Un-named 1
16/12/98	Un-named 2
13/11/98	Waterhouse

### **3. North West Survey of Boullanger Bay / Robbins Passage**

In conjunction with Birds Tasmania, 10 sites in the northwest of Tasmania around the Boullanger Bay / Robbins Passage area were comprehensively surveyed for this project. The sites were: Kangaroo Island, Five Islets (Robbins Is), Wallaby Island, Montagu Island, Bird Point (Robbins Is), Mosquito Inlet (Robbins Is), Shipwreck Point (Perkins Is), 7 Mile Beach (Anthony's west and east end), Welcome River Inlet.

**Table 3 Remote locations surveyed in southwest Tasmania.**

SW beach name	Beach Lgth km	No of Surveys	Tot. Survey Lgth km
Nye Bay	3.0	1	3.0
Louisa Bay	2.5	2	5.0
Noyhener Beach	2.0	1	2.0
Stephans Bay	2.0	1	2.0
Sandblow Bay	0.3	1	0.3
Mulcahy Bay	1.5	3	4.5
Towterer Beach	1.2	3	3.6
Cox Bight	4.0	3	9.0
Granite Beach	1.4	2	2.8
Prion Beach	6.5	2	7.5
Coffin Bay	3.0	1	0.8
South Cape Bay	3.5	4	10.6
Surprise Bay	1.0	3	3.0
Turu Beach	1.5	1	1.5
Osmiridium Beach	1.0	1	0.5
Wreck Bay Beach	2.5	1	2.5
Little Towterer Beach	0.2	1	0.2
Maatsuyker Island	1.0	2	2.0
<b>TOTAL</b>	<b>38.1 km</b>	<b>33 surveys</b>	<b>60.8 km</b>

#### 4. Summer and Winter Wader Counts

Comprehensive counts at the regular summer and winter wader survey sites, in addition to the northwest sites, were undertaken by Birds Tasmania using extra observers. The 12 sites were: Lauderdale, Clear Lagoon, Mortimer Bay, Pipeclay Lagoon, Calvert's Lagoon, South Arm Neck, Barilla Bay, Orielton, Iron Creek (Carlton), Marion and Blackmans Bays, Tamar/George Town, Cape Portland/Little Musselroe.

#### 5. Near Offshore Islands

A total of 92 surveys were conducted on 43 near offshore islands for this project. The majority of surveys were undertaken by W. and M. Wakefield who have also compiled records for many of these sites over the past 25 years.

#### 6. Moulting Lagoon

Bi-annual counts of waterfowl (including shorebirds) have been systematically conducted at Moulting Lagoon since 1992. Moulting Lagoon is an estuarine wetland at the mouth of the Swan and Apsley Rivers, Freycinet Peninsula. In addition to shorebirds, it is an important breeding area for Black Swan as well as supporting large populations of other waterfowl particularly Australian Shelduck and Chestnut Teal. A large group of volunteers made comprehensive surveys for the 1998 – 1999 periods of this project.

## RESULTS

### PART 1: SURVEY PERIOD INFORMATION

#### SURVEY EFFORT

Results from a total of 863 surveys completed during the 1998-1999 breeding period equated to a total of 970 hours spent on survey and a total of 1,092 km of shoreline surveyed. These results were compiled from 84 different 'observer names' (75 volunteers + 9 specialists), however, this number is considered a minimum for observer effort as some 'observer names' such as 'Birds Tasmania' represented a group activity with 4 to 5 observers. For simplicity n=84 was used in calculations to represent the number of people involved.

Table 4 shows the amount of survey effort for the 84 observers during the collecting period. Note that 16 observers conducted over 10 surveys each and of that group W. & M. Wakefield completed a staggering 326 surveys.

**Table 4 Amount of Survey Effort for Tasmania's Beaches.**

Number of People	Number of Surveys Each
15 people	1 survey each
10 people	2 surveys each
13 people	3 to 4 surveys each
19 people	5 to 8 surveys each
4 people	9 to 10 surveys each
9 people	10 to 19 surveys each
4 people	20 to 30 surveys each
Project Officer	58 surveys
W. & M. Wakefield	326 surveys
<b>TOTAL</b>	<b>863 surveys completed</b>

#### SITE VISITS

Of the total number of 863 surveys (or site visits), the majority of sites were surveyed only once or twice (70%). However, as Table 5 shows the amount of survey effort was significant and sustained to include a high number of repeat visits. The most surveyed sites were Beaumaris Beach (21 times), Binalong Bay (16 times), Moorland Point and Orielson Lagoon (15 times each).

**Table 5 Number of Surveys per Site.**

Number of Surveys per Site	Number of Sites (% of total)	Total Number of Surveys
1	167 (53.4%)	167
2	52 (16.6%)	104
3	27 (8.6%)	81
4 to 6	34 (10.9%)	174
7 to 10	20 (6.4%)	167
11 to 15	11 (3.5%)	133
16	1 (0.3%)	16
21	1 (0.3%)	21
<b>TOTAL</b>	<b>313 sites</b>	<b>863 surveys</b>

## COVERAGE OF THE STATE

Appendix A contains a detailed list of the 313 different locations and 863 surveys undertaken during this project. Table 6 shows the amount of surveys undertaken in each region and associated off shore islands in Tasmania. The east and southeast region of the State had most survey effort, while the west coast had fewest surveys with no island visits (due to the difficulty of access and remoteness of western sandy beaches). Sites in the southwest region were specifically targeted to provide data on low human use sites to gauge impacts. A total of 93 surveys were conducted on a total of 43 islands. Surveys were undertaken mainly by W. and M. Wakefield, but also included survey sites on Maria Island, Bruny Island, King Island, Flinders Island and several remote sites on Deal Island, Erith Island and Clarke Island in Bass Strait.

**Table 6 Survey Effort across Tasmania.**

Region	No of Sites Counted	Number of Surveys	Sum of Survey Time - hours	Total Length Surveyed kms
North	16	49	42.1	62.8
West	1	7	15.33	29.5
Northeast	35	144	148.04	252.3
Northwest	21	50	99.72	116.8
East	25	85	138.84	120.2
South	26	91	71.7	59.3
Southeast	80	205	191.91	199.0
Southwest	17	31	43.71	58.8
Sub-Total	221	662	751.35	898.7
Islands - N	0	0	0	0
Islands - S	17	54	67.82	133.7
Islands - SE	12	44	25.0	4.4
Islands - SW	1	2	3.3	2.0
Islands - NE	40	74	57.06	18.8
Islands - W	0	0	0	0
Islands - E	9	11	6.6	12.3
Islands - NW	13	16	58.5	21.7
Sub-Total	92	201	218.28	192.9
<b>TOTAL</b>	<b>313 sites</b>	<b>863 surveys</b>	<b>969.63 hours</b>	<b>1091.6 km</b>

## SPECIES RECORDS

Table 7 shows each species of shorebird against the number of surveys it was recorded in, the number of sites and the total number of sightings. The total number of sightings of all species made during the survey was 116,118. The number of sightings, however, does not represent the number of individuals seen as some sites were visited several times and sites surveyed on different days may have had the same birds.

**Table 7 Information on each species of shorebird collected during the survey.**

Shorebird	No. of Surveys Recorded	No. of Sites recorded	Total No of Sightings	Maximum Count at a Site
<b>RESIDENT SPECIES</b>				
Masked Lapwing	288	137	5,609	285 – Northeast River (river mouth)
Banded Lapwing	7	5	84	40 – Little Musselroe
Sooty Oystercatcher	250	134	2,750	179 – Northeast River (river mouth)
Pied Oystercatcher	522	198	9,939	370 – Seven Mile Beach (Anthony Beach)
Red-capped Plover	235	72	3,033	135 – Cape Portland

Shorebird	No. of Surveys Recorded	No. of Sites recorded	Total No of Sightings	Maximum Count at a Site
<b>RESIDENT SPECIES</b>				
Hooded Plover	372	113	1,899	47 – Stumpy Bay
Black-fronted Dotterel	10	8	28	6 – Calvert’s Lagoon
Little Tern	12	7	35	6 – Cowper Point
Fairy Tern	55	27	1,060	250 – Logan’s Lagoon
Crested Tern	193	117	7,233	2,000 – Governor Island
Caspian Tern	112	70	224	15 – Moulting Lagoon
White-fronted Tern	4	3	28	22 – Fisher Reef
Pacific Gull	388	166	3,265	95 – Seven Mile Beach
Kelp Gull	166	83	11,599	2,030 – Green Island
Silver Gull	490	193	23,327	2,000 – Lauderdale Coastline (Ralph’s Bay)
<b>MIGRATORY</b>				
Red Knot	8	7	816	500 – Five Islets
Great Knot	2	2	25	20 – Five Islets
Sharp-tailed Sandpiper	11	10	107	56 – Montague Island
Curlew Sandpiper	53	26	3,456	1,000 – Logan’s Lagoon
Terek Sandpiper	2	2	2	1 each – Five Is & Shipwreck Point
Common Greenshank	32	17	884	145 – Adelaide Bay
Ruddy Turnstone	66	27	6,338	900 – Shipwreck Point
Sanderling	27	11	1,415	266 – Blanche Point
Pacific Golden Plover	34	17	747	146 – Cape Portland
Whimbrel	14	8	37	7 – George Town Reserve
Eastern Curlew	43	22	1,139	166 – Kangaroo Island
Grey-tailed Tattler	16	5	41	6 – Bird Point
Bar-tailed Godwit	51	25	1,036	500 – Five Islets
Red-necked Stint	126	53	24,147	4,000 – Syndicate Lag.
Double-banded Plover	48	24	1,062	160 – Orielton Lagoon
Grey Plover	1	1	200	200 – Five Islets
Lesser Sand Plover	9	5	33	11 – Orielton Lagoon
‘Unidentified Wader Species’	3	3	4,520	4,000 – Shipwreck Point
<b>TOTAL</b>			116,118	

### SPECIES DIVERSITY AT SITES

Table 8 shows the range in total species recorded at sites (for all visits) across Tasmania. Individual site diversity is shown in Appendix A. The majority (71.5%) of sites had up to 6 species recorded per site. This level of diversity is mostly made up of species that are widespread across Tasmania such as the Pacific Gull, Silver Gull and Masked Lapwing.

**Table 8 Species Diversity at Shorebird Sites.**

Number of Sites (% of Total)	Total Number of Species Recorded
98(31.3%)	0 - 2
126 (40.2%)	3 – 6
60 (19.2%)	7 – 10
20 (6.4%)	11 – 14
9 (2.9%)	15 or more

Two levels were selected to identify priority sites having high shorebird species diversity by Tasmanian standards. Sites which had 7 or more species could be considered to have High shorebird diversity and those sites with 11 or more species recorded could be considered to have Very High shorebird diversity. These priority sites for shorebird diversity are identified in Table 9.

**Table 9 Priority Sites with Shorebird Diversity in Tasmania.**

Priority Sites	No. Species Recorded	No Resident / Migratory
<b>Very High Diversity</b>		
Cape Portland	22 species	11 / 11
Bird Point (Robbins Is)	20 species	8 / 12
Little Musselroe	19 species	11 / 8
George Town Reserve	18 species	8 / 10
Orielton Lagoon	17 species	8 / 9
Policeman's Point	16 species	10 / 6
Shipwreck Point (Perkins Is)	16 species	7 / 9
Patriarch Inlet (Flinders Is)	15 species	10 / 5
Little Boomer	15 species	10 / 5
<b>High Diversity</b>		
Lisdillon	14 species	10 / 4
Pipeclay Lagoon	13 species	7 / 6
Musselroe	13 species	5 / 8
Ocean Beach	13 species	8 / 5
Orielton Causeway	13 species	4 / 9
South Arm Neck (Wildlife Sanct)	13 species	8 / 5
Steels Beach	13 species	11 / 2
Orford Spit	12 species	10 / 2
Seven Mile (Anthony's)	12 species	7 / 5
Barilla Bay	12 species	7 / 5
Beaumaris Beach	12 species	11 / 1
Cameron Inlet / Logan's Lagoon (Flinders Is)	12 species	8 / 4
Cowper Point (King Is)	12 species	8 / 4
Moulting Lagoon	12 species	8 / 4
Marion Beach	12 species	9 / 3
Lauderdale Coast (Ralph's Bay)	11 species	7 / 4
Little Swanport (lagoon mouth)	11 species	9 / 2
Meredith River (river mouth)	11 species	8 / 3
Nine Mile Beach	11 species	9 / 2
Waterview Sanctuary	11 species	8 / 3

Sites vary in the diversity of resident and migratory shorebirds they contain and are important for either grouping or because they have a mixture of both (as in Table 9). Table 10 identifies the sites in Tasmania that are a priority for resident (breeding) shorebird diversity. As several common and widespread species were included in this project (e.g. Gull species and Masked Lapwing), the priority level was set at 8 or more resident species being present.

**Table 10 Priority Sites having a High Diversity of Resident Shorebird Species (8 or more species).**

Site	
<b>11 Resident Species</b>	
Cape Portland	Steels Beach
Little Musselroe	Beaumaris Beach
<b>10 Resident Species</b>	
Policeman's Point	Lisdillon
Patriarch Inlet (Flinders Is)	Orford Spit
Little Boomer	
<b>9 Resident Species</b>	
Marion Beach	Nine Mile Beach
Marion Bay Bridge	Forwards & Picnic Beach
Little Swanport (lagoon mouth)	Scamander River (mouth)
<b>8 Resident Species</b>	
Bird Point (Robbins Is)	Sandspit

Site	
George Town Reserve	Seven Mile Beach (east end)
Orielton Lagoon	The Neck (Bruny Is)
Ocean Beach	Australia Point
South Arm Neck (Wildlife Sanctuary)	Adventure Bay Beach (Bruny Is)
Cameron Inlet / Logan's Lagoon (Flinders Is)	Bakers Beach
Cowper Point (King Is)	Below Pollys Bay
Moulting Lagoon	Cloudy Beach (Bruny Is)
Meredith River (river mouth)	Horseshoe Bank
Waterview Sanctuary	Nye Bay
Dianas Beach	Pebbley Bay
Friendly Beaches	Pirates Bay
Great Bay (Bruny Is)	

Sites that were considered a priority because they contained a high diversity of migratory species are shown in Table 11. It is important to note that the results collected during the survey are a seasonal 'snapshot' and may not have captured some sites due to low counts for the year (e.g. Kangaroo Is). These sites are considered again in Part 3 of this report.

**Table 11 Priority Sites for Migratory Species Diversity (5 or more species)**

Site and Diversity
<b>12 Species</b>
Bird Point (Robbins Is)
<b>11 Species</b>
Cape Portland
<b>10 Species</b>
George Town Reserve
<b>9 Species</b>
Orielton Lagoon and Orielton Causeway
Shipwreck Point (Perkins Is)
<b>8 Species</b>
Little Musselroe and Musselroe
<b>7 Species</b>
Five Islets (Robbins Is)
<b>6 Species</b>
Pipeclay Lagoon
Policeman's Point
<b>5 Species</b>
Montague Island
Moorland Point
Ocean Beach
Patriarch Inlet (Flinders Is)
Seven Mile Beach (Anthony's Beach)
South Arm Neck (Wildlife Sanctuary.)
Little Boomer
Barilla Bay

#### **SITE DISTURBANCE**

From a total of 863 surveys, results on the degree of disturbance was recorded during 407 surveys, which equated to 212 sites and 147 individual sites. Disturbance was ranked according to its potential impact on breeding or roosting shorebirds and ranged from 'No impact' (no disturbance evident on beach), 'Low impact' (single or two people walking on beach or low impact recreation), 'High impact' (greater than 2 people with activities on the beach, any dogs or pets, dogs or pets or domestic stock roaming unattended)



to 'Very High impact' (variables for High impact activities plus any groups of people, and or any vehicles (or signs of vehicles) on the beach).

Table 12 shows that 25.3% of all surveys (n=103) recorded 'NO' disturbance on the beach. However, a total of 74.7% of surveys (n=304) recorded some degree of disturbance on the beach ranging from Low (14.5%) to Very High (42.8%) impact on shorebirds. Relating this information to sites it is found that 29.2% of sites had NO disturbance on the beach and 70.8% of sites had some degree of disturbance recorded ranging from Low to Very High impact on shorebirds.

This finding, however, includes sites that were visited more than once including sites that had different disturbance information recorded during each visit. Some of the sites that recorded No Disturbance were subsequently surveyed and found to have a disturbance level. The total number of different sites (n = 147) were then checked to identify the highest level of disturbance recorded during site visits. This result is shown in the last column of Table 12. By grouping the impacts into No or Low impact on shorebirds versus High to Very High impact on shorebirds it is found that 55 sites recorded No or Low impact disturbances (37.4%) compared to 92 sites (62.6%) that recorded High or Very High disturbance activities.

**Table 12 Level of Site Disturbance Recorded during the Survey Period.**

<b>Disturbance - Impact on Shorebirds</b>	<b>No of Surveys Recorded (%)</b>	<b>No Sites per Disturbance (%)</b>	<b>No of Different Sites (%)</b>
No disturbance reported – NO impact	103 (25.3%)	62 (29.2%)	35 (23.8%)
1-2 people walking or limited recreation (swimming, fishing) on beach – LOW impact	59 (14.5%)	43 (20.3%)	20 (13.6%)
> 2 People walking and or with dogs / people and recreation / dogs or stock unattended – HIGH impact	71 (17.4%)	39 (18.4%)	24 (16.3%)
Group activities + - pets / + - vehicles, bikes etc on beach – VERY HIGH impact	174 (42.8%)	68 (32.1%)	68 (46.3%)
<b>TOTAL</b>	<b>407 surveys</b>	<b>212 sites</b>	<b>147 sites</b>

### **BREEDING INFORMATION**

A total of 294 breeding observations were collected during the survey period for 13 of the 15 resident shorebird species. This figure is 8.0 % of all records obtained (3,650 records) which is valuable information considering the difficult in identifying the nest sites of shorebirds. This high percentage also reflects the value of gaining the assistance of skilled ornithologists. Appendix C contains a full list of sites and species recorded breeding.

**Table 13 Breeding Information collected during the 1998-1999 Survey.**

<b>Resident Species</b>	<b>No of Breeding Records</b>	<b>Number of Sites Recorded Breeding</b>
Masked Lapwing	6	5
Banded Lapwing	not recorded	not recorded
Sooty Oystercatcher	16	8
Pied Oystercatcher	60	33
Red-capped Plover	36	19
Hooded Plover	84	38
Black-fronted Dotterel	1	1
Little Tern	2	2
Fairy Tern	22	9
Crested Tern	3	2
Caspian Tern	5	5
White-fronted Tern	not recorded	not recorded
Pacific Gull	15	15
Kelp Gull	24	16
Silver Gull	20	16
<b>Total</b>	<b>294 observations</b>	<b>169 sites</b>

Appendix D contains a details of each shorebird species recorded breeding and its associated information on nests, eggs, chicks or juveniles where known. It was difficult to determine the breeding productivity of species due to the low number of replications during the breeding season.

### BREEDING SITE DIVERSITY

Appendix C contains the details of shorebird species recorded breeding during this survey and the sites. A total of 92 different site localities were identified as having shorebird species breeding. Table 14 shows that over half of these sites (54.3%) had only one species breeding but that many sites had several species including two sites (Green Island and Lachlan Island) had a total of five species breeding.

**Table 14 Shorebird Breeding Diversity across all Sites.**

Number of Species Breeding	Number of Sites (% of Total)
1	50 (54.3%)
2	18 (19.6%)
3	15 (16.3%)
4	7 (7.6%)
5	2 (2.1%)
<b>Total Number of Sites</b>	<b>92 sites</b>

Every site that has a species of shorebird using it for breeding is important, particularly if the species has a localised distribution or a threatened status. The 9 sites with the highest numbers of species breeding are shown in Table 15. The importance of these sites relates not just to the number of species breeding but also to the rarity of those species.

**Table 15 Sites and Regions with Highest Shorebird Breeding Diversity.**

Region and Site	Species Breeding
<b>Northeast</b>	
Baynes Island	Caspian Tern, Fairy Tern, Pacific Gull, Silver Gull
Steels Beach	Hooded Plover, Little Tern, Pied Oystercatcher, Red-capped Plover
<b>East</b>	
Lachlan Island	Caspian Tern, Kelp Gull, Pacific Gull, Silver Gull, Sooty Oystercatcher
Lisdillon	Fairy Tern, Hooded Plover, Pied Oystercatcher, Red-capped Plover
Orford Spit	Fairy Tern, Hooded Plover, Pied Oystercatcher, Red-capped Plover
Saltworks Beach	Black-fronted Dotterel, Hooded Plover, Pied Oysterc, Red-capped Plover
<b>South</b>	
Green Island	Caspian Tern, Kelp Gull, Pacific Gull, Silver Gull, Sooty Oystercatcher
Lighthouse Bay (Bruny Is)	Hooded Plover, Pacific Gull, Pied Oystercatcher, Sooty Oystercatcher
<b>Southeast</b>	
Barren Island	Caspian Tern, Kelp Gull, Pacific Gull, Silver Gull

Table 16 shows the priority breeding sites of species that are listed on Tasmania's *Threatened Species Protection Act 1995* or which have a very small population size and of conservation concern.

**Table 16 Breeding Sites of Shorebird Species of Conservation Concern.**

Species	Sites
Little Tern	Beaumaris Beach, Steels Beach
Fairy Tern	Cameron Inlet, Orford Spit, Syndicate Lagoon, Musselroe, Little Musselroe, Maurouard Beach, Seven Mile Beach, Baynes Island, Lisdillon Beach
White-fronted Tern	not recorded breeding during this survey
Caspian Tern	Lachlan Island, Barren Island, Baynes Island, Hog Island, Green Island
Black-fronted Dotterel	Saltworks Beach
Hooded Plover	Mulcahy Bay, Macleans Beach, Marion Beach, Marshall Beach, Maurouard Beach, Bakers Beach, Nine Mile Beach, Okehampton Bay, Orford Spit, Meredith River (river mouth), Hazards Beach, Cloudy Beach,

Species	Sites
	Fortescue Bay, Garden Cove, Binalong Bay, Bell Buoy, Lisdillon Beach, Grindstone Bay, Little Towterer Beach, Beaumaris Beach, Pirates Bay, Lighthouse Bay, Blanche Point, Adventure Bay Beach, Lagoon Beach, Green Point Beach, The Neck, Seven Mile Beach (east end), Roaring Beach (Southport), Sloping Main, Saltworks Beach, Two Tree Point, Two Mile Beach, Stephan's Bay, Steels Beach, Rebecca Beach, Swanwick Bay, Ranson's Beach

### **DISTURBANCE DURING BREEDING**

During the survey period there were 92 sites in total that had breeding information collected. Of these, 24 sites had no information recorded on disturbance at the time of survey, leaving a total of 68 sites where disturbance information was recorded and could be related to breeding species present. It should be acknowledged that while obtaining information for this project, observers were themselves a source of disturbance and that technically no site should have no disturbance recorded. To account for this No and Low represent low impact disturbances.

Using the same methods to calculate the results in Table 12, Table 17 shows that 26.5% of all sites (n = 18) had No or Low levels of impact on beaches containing breeding shorebirds, whereas 73.5% of sites (n = 50) had disturbances which were ranked as having High to Very High impact on breeding shorebirds (see Table 1 for categories).

**Table 17 Shorebird Breeding Sites with Level of Disturbance Reported.**

Degree of Disturbance on Breeding Shorebirds	Number of Breeding Sites (%)
No Impact	10 (14.7%)
Low Impact	8 (11.8%)
High Impact	7 (10.3%)
Very High Impact	43 (63.2%)
<b>Total</b>	<b>68 sites</b>

### **SUMMARY OF RESULTS COLLECTED DURING 1998 – 1999 SURVEY**

A summary of the information compiled during the 1998 – 1999 survey period is given in Table 18.

**Table 18 Summary of Information Compiled during the 1998 –1999 Shorebird Survey.**

Information Collected	Results
<b>Survey Effort</b>	
Number of surveys undertaken	863 surveys
Total number of sites surveyed	313 sites
Number of islands surveyed	43 islands
Number of surveys on islands	92 surveys
Number of volunteers	75 volunteers
Total number of participants	84 participants
Total number of hours spent surveying	970 hours of survey
Total length of all sites surveyed	1,092 kilometres surveyed
<b>Shorebird Species</b>	
No of shorebird species observed	32 species
No of shorebird species recorded breeding	13 species breeding
Number of breeding observations made	294 breeding observations
Number of surveys with a breeding observation	169 surveys
Total number of sites where species were breeding	92 sites
Highest number of species breeding per site	5 species breeding
Total number of species records made	3,650 records
Total number of bird sightings	116,118 sightings
<b>Site Disturbance Information</b>	

<b>Information Collected</b>	<b>Results</b>
Number of surveys with disturbance information recorded	407 surveys
Number of individual sites with disturbance information	147 sites
Percentage of sites with No to Low impact disturbances	37.4 % of sites
Percentage of sites with High to Very High impact disturbances	62.6% of sites
Number of breeding sites with disturbance information collected	68 sites
Percentage of all sites with No to Low impact disturbances on breeding shorebirds	26.5% of sites
Percentage of sites with High to Very High impact disturbances on breeding shorebirds	73.5% of sites

## PART 2: SPECIES ASSESSMENTS

The information presented in this section refers to Tasmania's *Threatened Species Protection Act 1995* (TSPA) and provides population estimates for Australia taken from HANZAB (Marchant & Higgins 1993, Higgins & Davies 1996).

### BEACH BREEDING SHOREBIRDS

#### Masked Lapwing *Vanellus miles*

Distribution in Tasmania	Ubiquitous and widespread in all regions including most islands
Occupancy	Resident during breeding but mobile and forms flocks when non-breeding
Preferred habitat	Natural and modified open habitats, coastally and inland including pasture, wetlands, beaches, marshland, parks, roadsides and lawn
Breeding habitat	Natural or modified areas of open ground in many situations
Breeding season	Late June to late Oct with a peak in mid-August
Results this survey	5,609 sightings – at 137 sites – in 288 surveys
Sites recorded	All sites listed in Appendix B
Largest count	285 birds at North East River (river mouth) (25/2/99)
Breeding sites this survey	5 sites = Cameron Inlet, Little Boomer, Pelican Rocks, Pipeclay Lagoon, Rocky Bay
Other known breeding sites	At many coastal and inland locations including offshore islands – not targeted by this survey
Population estimate	Australian Population ~ 297,000 birds (170,000 in N Australia and flyway, 127,000 SE Australia inc Tas and New Zealand), Tasmania unknown but likely at least to hold 50% of SE population at ~ 63,500 birds
Population trend and status	Increasing, common and widespread species
Management Needs	Pet and feral cat control, manage human conflicts (i.e. nest aggression) through education and minimal intervention

Notes = Tasmania is possibly the stronghold for the Masked Lapwing despite being a rare species till the 1880s. This is primarily due to land changes (agricultural development) favouring the species and the absence of a major predator (until recently) such as the European Red Fox. A very successful species in Tasmania having expanded its range to almost all habitats at many elevations and being widely distributed. Flock sizes of 200 or more are sometimes recorded (Tas. Bird Report systematic lists e.g. 647 at Margate in 1998). Not specifically a coastal species, as also commonly breeds inland and including on most offshore islands (Brothers *et al.* 2001). Hardy and resilient during breeding being able to withstand some degree of disturbance. This species is able to have two or potentially more clutches per breeding season in Tasmania (Johnstone & Woehler 1986).

#### Banded Lapwing *Vanellus tricolor*

Distribution in Tasmania	Mainly inland between Bridgenorth, Deloraine and Epping and Evandale, but also locally in southeast and northeast coast, also King Island and Flinders Island
Occupancy	Largely resident, sedentary when breeding, mobile when non-breeding, singularly, pairs or small flocks to 20 birds
Preferred habitat	Herbfields, poorer quality grassland, pasture or cultivated land
Breeding habitat	Open ground, mainly pasture, closely grazed paddocks
Breeding season	July to October but seasonally variable
Results this survey	84 sightings - at 5 sites - in 7 surveys
Sites recorded	Adelaide Bay, Cape Portland, Eagle Point Beach, Little Musselroe, Shark Bay
Largest count	40 birds at Little Musselroe (12/12/98)
Breeding sites this survey	Not recorded this survey

Other known breeding location	Breeding in its core range in central north, Midlands to northeastern Tasmania including Legana and Cape Portland
Population estimate	Australian population ~ 27,000 birds, Tasmania < 250 breeding birds but larger non-breeding flocks may be recorded
Population trend and status	Suspected decline due to changes in land use, pasture improvement and possible displacement by Masked Lapwing. Uncommon in Tasmania and may qualify for listing on TSP Act 1995
Management Needs	Requires monitoring, control of domestic pets and feral cats in core breeding range. Review status under the TSP Act.

Notes = Cooper (1995, 1996) has reviewed the status of the Banded Lapwing in its core range in the north of the State from Bridgenorth east to Cape Portland, south to Epping and west to Meander. This species seldom breeds on beaches which explains the low number of sightings in this survey. Cooper reports that the species has declined from many of its former known breeding sites in the Tamar River area, Richmond-Campania, Bridgewater-Brighton, Midway Point-Sorell and Cambridge areas. The species was recorded at fourteen sites in 1999 (Wakefield & Wakefield 1999) with flock sizes generally between 20 to 50 except for 157 birds reported at Evandale (9 May 1999). Numbers fluctuate between the breeding and non-breeding season and Cooper outlines historical evidence of significant population highs and lows that may occur over several decades. Cooper (1996) also confirms that dry winters may positively affect breeding success. The species remain annually recorded (< 50 birds) in the Cape Portland / Little Musselroe area (Lord 1995, Park 1997, 1998, 1999).

#### **Hooded Plover *Thinornis rubricollis***

Distribution in Tasmania	Coastally around Tasmania including King Island, Flinders Island and other major off shore islands
Occupancy	Territorial when breeding, sometimes near other nesting shorebirds, forms winter flocks undertaking local movement
Preferred habitat	Flat, sandy oceanic beaches, especially with river mouths, estuaries
Breeding habitat	Sand or dunes on beaches and spits, also sometimes shingle banks, especially estuaries and creek lines draining through sandy beaches, persistent breeders and faithful to a nesting locality
Breeding season	August/early September to March/April
Results this survey	1,899 sightings – at 113 sites – in 372 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	47 birds at Stumpy Bay (4/4/99)
Breeding sites this survey	84 observations at 38 sites – listed in Appendix C
Other known breeding location	Birds Tasmania have documented breeding sites on 160 to 200 beaches in Tasmania, key sites are Cloudy Bay, The Neck and Adventure Bay on Bruny Island, Planter Beach (Flinders Is), Shipwreck Point (Perkins Is), Bird Point (Robbins Is), Stumpy Bay, Cape Sorell to Ocean Beach, Seven Mile Beach (Anthony's), Mt Cameron, Studland Bay, Cape Portland, Musselroe to Eddystone Point, Croppies, Boltons Beach, Denison Beach, Friendly Beaches, Lagoons Beach, Nine Mile Beach, Marion Bay, Maurouard Beach, Rheban Beach & Sandspit, Saltwork Beach, Steels Beach, Taylors Beach, The Gardens, Two Mile Beach, Granville Harbour to Four Mile Beach, Puncheon Point to S of Little Creek (Cape Barren Is), Kent Bay (Cape Barren Is)
Population estimate	Australian population ~ 5,000-7,000 birds (inc. Newbey 1996 WA estimates), Tasmania's population estimate ~ 2,000 birds
Population trend and status	Average population decline of 1.56% per year reported for key sites, may qualify for listing on Tasmania's TSP Act 1995
Management Needs	Protection of breeding beaches during breeding season including by restricting human access including dogs and vehicles. Review status under the TSP Act

Notes = Population trends including declines and impacts are well documented for the Hooded Plover in Tasmania (Newman 1986, 1989, Schulz 1993, annual count records held by Birds Tasmania). In 1980 to 1982 the breeding densities around southeastern Australia for the Hooded Plover ranged from 0.4 to 1.4 Hooded Plover (HP) per km, but in Tasmania ranged from 1.4 to 2.0 HP per km and up to 3.0 HP per km on undisturbed secluded beaches. Newman and Patterson (1984) calculate that there is some 900 km of potentially suitable beaches in the Tasmanian region (600 mainland Tasmania, 75 km King Island, 125 km Flinders Island, 100 km offshore islands) and using the subset of east coast beach counts (Newman 1982) the Tasmanian population was estimated to total 1,730 HP in 1982. At that time the Victorian population was estimated to be 475 birds, South Australia 205 birds making a total national population of approximately 2,500 birds with Tasmania being the stronghold.

Following from Newman and Patterson (1984) a comprehensive survey of the Hooded Plover in Tasmania was again repeated in 1992 at many of the previous sites (Holdsworth & Park 1993). A total of 865 birds were recorded over 500.23 km of beach with statistics showing no significant decline of the species over the previous decade. A re-survey again in 1996 counted 815 birds per 391.25 km (Birds Tasmania records) equating to a total population estimate of 1,875. Closer analysis of a sub-set of site information re-surveyed consistently between 1982 and 1996 (17 beaches), however, shows some significant localised declines in Hooded Plover, especially at south and southeastern beaches (Woehler & Park 1997). Re-surveys in 1996 found a mean density of 1.87 HP per km (Woehler & Park 1997) representing a 19.5% decline at an annual rate of 1.56% over the 14 year period.

Additional surveys of the Hooded Plover have been conducted for consecutive years on Cape Barren Island (Moore 1994, Collier & Collier 1995) with average densities of 0.93 HP per km recorded. Collier and Collier (1995) suspect that not all beaches are in fact suitable for the species and that they prefer typically ocean facing sandy beaches with low dunes sparsely vegetated with native grasses. Schulz has surveyed for Hooded Plover along the southwest and northwestern Tasmanian coastline (Schulz 1990, 1993, 1993) obtaining densities as high as 3.5 HP per km.

Significant numbers of Hooded Plover have been recorded in Western Australia with a population estimate in 1995 being over 2,000 birds (Newbey 1996, Singor 1999). This work has significant implications for the national conservation assessment of the species but does not alter the significance of the species range in Tasmania and importance (Newman 1982, Lane 1987, Marchant & Higgins 1993).

**Black-fronted Dotterel *Elseyornis melanotus***

Distribution in Tasmania	Widespread in north, central and southeastern regions, occasionally in the west
Occupancy	Mainly sedentary, some local and seasonal movement in response to food, usually singly or in pairs, sometimes more (possible winter flocking)
Preferred habitat	Fresh or brackish shallow wetlands and some river mouths, also inland on dams, sewage farms and lakes
Breeding habitat	Shingle, herbfield, dry open ground, faithful to nesting site
Breeding season	September to February
Results this survey	28 sightings – at 8 sites – in 10 surveys
Sites recorded	Calvert's Lagoon, Cape Portland, Iron Creek, Moulting Lagoon, Okehampton Bay, Pearshape Lagoon (King Is), Policeman's Point, Saltworks Beach
Largest count	6 birds at Calvert's Lagoon (26/6/99)
Breeding sites this survey	1 site = Saltworks Beach (2/12/98)
Other known breeding sites	Coal River Valley but more commonly known breeding inland especially on wetlands in the Midlands
Population estimate	Australian Population ~ 17,000 birds, Tasmanian population 500 - 1,000 birds maximum
Population trend and status	Unknown population trend, small population may qualify for listing on TSP Act if declines can be demonstrated
Management Needs	Protection of wetlands and coastal breeding sites, annual monitoring, review status under the TSP Act

Notes = The Black-fronted Dotterel is also known to occur at Orielton, Clear Lagoon, St Helens sewerage ponds, Meredith River and some sites in the northwest. The low number of sightings in this study probably reflects the fact that this species more commonly occurs inland than on the coast. The Tasmanian Bird Atlas (Thomas 1979) shows very scattered and few locations around mainly the east and southeast coast, but with more inland. Brothers *et al.* (2001) recorded this species on only one island (Penguin Islet, off Hunter Is) during extensive surveys. Regularly recorded in small numbers (< 10 birds) at Moulting Lagoon (Blackhall 1998). Surveys on King Island (Schulz & Kristensen 1990) found greatest concentrations (n=27 at 7 sites) in the west on shallow sloping shingle beaches supporting suggestions that the species is increasing its range there (McGarvie & Templeton 1974). Usually individually or in small numbers (1 - 30) at most locations.

**Red-capped Plover *Charadrius ruficapillus***

Distribution in Tasmania	Widespread all regions but mainly in north and east including King Island and Flinders Island, also inland lagoons at high altitudes in Central Plateau
Occupancy	Small scale seasonal movements in response to water and food, solitary or mainly pairs but also loose flocks outside the breeding period
Preferred habitat	Along shores, coastal lagoons and estuaries around Tasmania, typically on saltmarsh and at the delta mouths of smaller rivers, also inland on salt pans
Breeding habitat	Sand, shingle, saltmarsh even short grass, sole pairs or semi-colonially with several pairs
Breeding season	From July (sheltered sites) / August through to March
Results this survey	3,033 sightings – at 72 sites – in 235 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	135 birds at Cape Portland (30/1/99)
Breeding sites this survey	19 sites = Pipeclay Lagoon, Beaumaris Beach, Waterhouse, Barilla Bay, Calvert's Lagoon, Horeshoe Bank, Sandspit, Lisdillon, Saltworks Beach, Meredith River (river mouth), South Arm Neck, Gardens Lagoon, Ocean Beach, Grindstone Bay, Steels Beach, Orford Spit, George Town Reserve, Orielton Lagoon, Okehampton Bay
Other known breeding sites	Cape Portland area, King Island, Flinders Island are also important sites. Coastally around Tasmania and commonly around inland lagoons, even at high altitudes such as Great Lake and Lake Augusta
Population estimate	Australian Population ~ 95,000 birds, Tasmania population ~ 2,500 birds
Population trend and status	Stable to slight increase in northeast and Derwent region
Management Needs	Requires monitoring at breeding sites (especially Cape Portland and Derwent region) and protection of nest sites at high visitation beaches

Notes = An important widespread resident species in Tasmania. Occurs on King Island at high densities of 3.3 birds/km of beach (~ 300 birds) and also in good numbers on Flinders Island, coastally and inland (Green 1969) (~ 425 birds). Brothers *et al.* (2001) recorded this species on very few islands (n=9) and similarly Wakefield and Wakefield (1998) do not record it all during their island surveys. High numbers (20 to 80) have been recorded in recent times at Calvert's Lagoon, Lades Beach, Orielton Lagoon, Patriarch Inlet, Grindstone Beach, Seven Mile Beach (Anthony's), Cape Portland, Lauderdale, Marion Bay, South Arm Neck, Pipeclay Lagoon (Wakefield & Wakefield 1999). In 1982 the South Arm area was identified as the most important breeding area for this species in south-eastern Tasmania (BOAT 1982). A comparison of trends in numbers of Red-capped Plover in the northeast and the Derwent region shown that although counts fluctuate annually there has been a steady increase at both areas over 15 years (Cooper *et al.* 1996).



### White-fronted Tern *Sterna striata*

Distribution in Tasmania	Widespread from Furneaux group, Devonport and coastally from Boat Harbour to Cockle Creek
Occupancy	Not well known but suspected to be partly migratory during non-breeding
Preferred habitat	Islands or stacks, sandy beaches to sheltered coasts including estuaries, bays, spits and shingle
Breeding habitat	Tasmania and New Zealand, colonial nesting on sand or soft vegetation
Breeding season	Sometimes mid September but generally October to February
Results this survey	28 sightings – at 3 sites – in 4 surveys
Sites recorded	3 sites are Cape Portland, Fisher Reef, Gunter's Bay
Largest count	22 Fisher Reef (12/12/98)
Breeding sites this survey	Not recorded this survey
Other known breeding sites	Only known Australian breeding sites are in Tasmania at 13 different islands in the Furneaux Group = Mile Is, Oyster Rocks, Billy Goat Reef, Briggs Islet, Penguin Is, Little Dog Is, Fisher Is Reef, Low Islets, Seal Point, Battery Is, Key Is, Neds Reef, Mid Woody Is. Common breeding species in New Zealand
Population estimate	Tasmania 1986 estimate of between 53 - 63 pairs, not possible to update estimate
Population trend and status	Unknown population trend, rare due to low numbers, status may need to be reviewed
Management Needs	Education on importance of protecting breeding sites particularly with the Flinders Island community, restriction of access during breeding times, regular monitoring of breeding sites needed, review status on TSP Act

Notes = Wall (1969) reported seeing this species in a mixed flock at West Ulverstone and listed past observations by others of the species at Bruny Island, Cape Portland, Cat Island (off Flinders Is), Orford and Kelso (no mention of breeding). Le Souef (1902) first reported the White-fronted Tern in the Furneaux Group, however, it was not confirmed breeding in Australia until quite recently. Whinray (1980), Wakefield (1981) then Brothers (1987) recorded this species breeding at 13 different islands in the Furneaux Group. Brothers (1987) suggests the species may also occur on other less visited sites in the Furneaux region and may occasionally change its breeding sites. Brothers *et al.* (2001) report up to hundreds of pairs throughout the Tasmanian range but this estimate seems contrary to other counts. Interestingly, the White-fronted Tern was not reported on Fisher Island during surveys by Serventy (1977), however, it is now well known from there. Systematic surveys other than those of Wakefield and Wakefield (1998) have not been undertaken. This species breeds in large numbers in New Zealand and may have moved across to Tasmania from there.

### Caspian Tern *Sterna caspia*

Distribution in Tasmania	Scattered coastally around Tasmania including King Island and the Furneaux islands
Occupancy	Low numbers, singly, pairs or in small groups
Preferred habitat	Coastal sandy beaches, inlets, lagoons and river deltas usually with sandy or muddy margins, also on islands
Breeding habitat	Isolated pairs or small colonies breed mainly on low offshore islands, sand-spits, behind sand hills, lagoon edges, open ground, bare rock, herbfields
Breeding season	August / September to January
Results this survey	224 sightings – at 70 sites – in 112 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	15 birds at Moulting Lagoon (1/2/99), regular counts in the 70s made there
Breeding sites this survey	5 sites = Baynes Is, Hog Is, Barren Is, Green Is, Lachlan Is

Other known breeding sites	Over 50 sites recorded widespread in Bass Strait and scattered coastally around Tasmania (Brothers <i>et al.</i> 2001, Wakefield & Wakefield 1998). Recent sites = Arch Is, Big Chalky Is, Little Chalky Is, Little Southport Is, Mile Is, Paddys Is, Barren Is (Pittwater), Big Spectacle Is, Curlew Is, Howie Is, The Iron Pot, Isles of Caves, St Helens Is, The Nuggets (off Cape Toureville), Visscher Is, ? Little Waterhouse Is, Carbuncles (Port Sorell)
Population estimate	Australian Population – possibly 1,000 to 3,000 birds, Tasmanian population small < 400 birds
Population trend and status	Unknown population trend, high conservation concern due to low numbers, may qualify for TSP Act, JAMBA / CAMBA
Management Needs	Restriction of access to key breeding sites during breeding season. Education on the importance of protecting breeding sites. Iconic species to use for education. Annual monitoring needed. Review status under the TSP Act

Notes = Most commonly observed in pairs or small numbers although occasionally high numbers (50 to 70s) have been recorded at some years at Moulting Lagoon, the Friars, the Nuggets (65 in 1999), Cameron Inlet and some other sites. Brothers *et al.* (2001) remarked at the low numbers of this species and estimated a total of 70 breeding pairs on Tasmania's offshore islands. The highest densities occur in the Furneaux Group and the east coast islands. Wakefield and Wakefield (1998) recorded Caspian Tern breeding on 20 offshore islands but no figures are provided. Significant numbers are regularly counted at Moulting Lagoon (10 – 80 birds) but the species is unlikely to breed there.

#### **Crested Tern *Sterna bergii***

Distribution in Tasmania	Mainly eastern and northern coast of Tasmania and also throughout Bass Strait islands
Occupancy	Sedentary to partly migratory after breeding
Preferred habitat	Coastal beaches, bays, estuaries, lagoons, often offshore islands
Breeding habitat	Islands, sand spits and flat rocky shelves above high water, rarely reefs or dunes, colonial nesting ranging from few to thousands of pairs
Breeding season	November to March
Results this survey	7,233 sightings – at 117 sites – in 193 surveys
Sites recorded	All sites listed in Appendix B
Largest count	2,000 birds at Governor Island (4/12/98)
Breeding sites this survey	3 breeding observations from 2 sites = Governor Island, Isle of Caves
Other known breeding sites	Green Is, The Iron Pot, Lachlan Is, Stack Is, Little Chalky Is, Little Spectacle Is, Paddys Is, Barren Is, Sea Gull Rock, Gull Is, Low Islets, Briggs Islet, Babel Island, Cat Is, Ninth Is, George Rocks, Low Islets, East Kangaroo Is, Actaeon Is, Southport Is, Southport Reef, Baynes Is, Billy Goat Reef, Spence's Reef (Green 1969), Curlew Is, Suzie Is, Swan Is, Cape Portland area, Frederick Henry Bay area including Midway Point
Population estimate	Australian population unknown, Tasmanian estimate < 8,000 pairs
Population trend and status	Unknown population trend, abundant at a few sites but not common or widespread
Management Needs	Protection of nesting sites through education and restriction of access onto offshore islands during breeding season. Regular monitoring needed at key sites to determine trends, DNA comparisons also needed

Notes = Brothers *et al.* (2001) report breeding colonies of 1 to 2,000 pairs at times on Cat Is, East Kangaroo Is and Ninth Is. Similar numbers have been recorded at times at George's Rocks, Governor Is and the Isles of Caves (Moverley & Wakefield 1995, Wakefield & Wakefield 1995, 1996, 1999, Higgins & Davies 1996), however, most colonies much smaller than this. Colonies are subject to disturbance at breeding time such as natural and feral species predation, high tides and human disturbance. Some

preliminary work (Woehler *et al.* 1991) has shown that morphological differences occur between a Tasmanian population and other mainland Australian populations of Crested Tern which should be investigated further.

**Little Tern *Sterna albifrons***

Distribution in Tasmania	Scattered along the northeast and east coast from Adams Cut to Marion Bay also King Island and Flinders Island and at few sites in the Boullanger Bay / Robbins Passage area
Occupancy	Sedentary while breeding then migratory, small groups
Preferred habitat	Coastally on sand-spits and barways, mouth or rivers, estuaries and sandy beaches
Breeding habitat	Colonially on sand-spit or shingle above high tide
Breeding season	September / October to late February
Results this survey	35 sightings – at 7 sites – in 12 surveys
Sites recorded	7 sites = Beaumaris Beach, Steels Beach, Bird Point (Robbins Is), Cowper Point (King Is), Friendly Beaches, Macleans Beach and Spike Bay (Clarke Is)
Largest count	6 birds at Cowper Point (31/1/99)
Breeding sites this survey	2 sites (eggs, chicks, juveniles) = Beaumaris Beach (2 pairs), Steels Beach (1 pair)
Other known breeding sites	Breeding sites recorded between 1990-2000 are: Doras Point (Bicheno), Lisdillon, Dianas Basin, Chain of Lagoons, Scamander including The Barway, Steels Beach, Little Musselroe, Great Musselroe, Wrinklers Beach, Campbells Point (Boobyalla), Stafford Beach (Triabunna), Murdocks Beach (Tomahawk), Falmouth, Sandspit River, Marion Bay
Population estimate	Australian pop ~ 300 breeding pairs, Tasmanian pop ~ 6 to 8 pairs
Population trend and status	Declining population, TSP Act 1995 = Endangered, JAMBA / CAMBA
Management Needs	Potential for extinction of this species from Tasmanian region. All nest sites need protection inc. legislation to prevent access, vehicles, human impact and domestic pets during breeding time. Management strategies such as pipes, shelter and wardens for all well known breeding sites on high use beaches including volunteer wardens and community surveillance are needed

Notes = Breeds in only 47 locations around Australia with a total population estimate of 300 pairs. This species has an extremely scattered distribution and breeding sites in Tasmania with very small numbers being reported breeding over the last 25 years (1968 – 18 sites, 1970s – 11 sites, 1980s – 9 sites, 1990s – 9 sites). Accounts of the Little Tern breeding in Tasmania from 1968 to 1979 has been provided by Napier (1970, 1972) and up to 1983 summarised by Rounsevell (1983). Breeding sites used over a long period of time (~ up to 30 years of sporadic attempts) include Scamander including the Barway and Steels Beach, Little Musselroe, South Croppies, Murdocks Beach (Tomahawk) and Adams Cut (Barnbogle). Most breeding records are of 5 or less pairs although 15-20 pairs were recorded at Garden Point (Kelly Basin) and 41 pairs at Pilot Bay, Cape Sorell.

This species rates a cursory mention by Brothers *et al* (2001) from nearly 300 island surveys. At nearly all the reported breeding sites the species has been spasmodic with a low success rate. The range in number of birds at any of these sites is 1- 20 pairs with a low success rate typically due to adverse weather or human disturbance. The population estimate in 1996 for Tasmania was less than 10 breeding pairs. Few young, if any, were successfully reared on Tasmanian mainland sites during this survey.

Little Tern are reported to live up to 20 years with irregular breeding success throughout their range. The species is annually but irregularly recorded at other sites such as Kangaroo Island, Perkins Island, Cape Portland, Scamander area including Wrinklers Lagoon, Bridport, George Town and a recent flock of 10 birds at Dianas Basin (Wakefield & Wakefield 1996). In addition to storms, high tides and human recreation, a range of native and feral species (e.g. feral cat, silver gulls, etc.) have been documented destroying breeding colonies (Rose 2001).

### All Breeding Sites Recorded in Tasmania (historic and recent)

Chain of Lagoons	Dianas Basin
Falmouth	Doras Point, Bicheno
Lisdillon, Triabunna	Beaumaris Beach
Scamander (inc Steels Beach & The Barway)	Bird Point, Robbins Island
Shipwreck Point, Perkins Island	Cowper Point
Friendly Beaches	Macleans Beach, Clarke Island
Spike Bay	Little Musselroe
Great Musselroe, NE	Sandspit River
Marion Bay Spit	Wrinklers Beach, Bicheno
Adams Cut (mouth of Great Forester River)	Campbells Point, Boobyalla
Cape Portland	Forester River mouth
Pilot Bay, Cape Sorell	South Croppies – Lake Creek, Waterhouse
Waterhouse Beach	Stafford Beach, Triabunna
Murdochs, Tomahawk	Garden Point, Kelly Basin
Georges Bay	Stack Island, south of Hunter Is.
Logan's Lagoon (Flinders Is)	Cameron Inlet (Flinders Is)
Patriarchs (Flinders Is)	Kelly Basin, Port Davey

References for sites are from Birds Tasmania records including the Tasmanian Bird Report systematic lists, R. Cooper pers. records, P. Duckworth pers. records, Napier (1972), Rounsevell (1983)

### Fairy Tern *Sterna nereis*

Distribution in Tasmania	Widespread on islands of Bass Strait including King and Flinders, scattered along the north coast and east coast from Waterhouse to Bruny Is, scattered in west around Boullanger Bay
Occupancy	Sedentary while breeding then migratory or partly migratory, small groups
Preferred habitat	Inshore and offshore islands, inlets, river mouths, estuaries, sandspits and barways
Breeding habitat	Colonial nesting, sandspit or shingle above high tide
Breeding season	October to February
Results this survey	1,060 sightings – at 27 sites – in 55 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	250 birds at Logan's Lagoon (Flinders Is) (26/2/99)
Breeding sites this survey	9 sites = Baynes Island, Lisdillon Beach, Little Musselroe, Maurouard Beach, Musselroe, Orford Spit, Seven Mile Beach (Anthony's), Syndicate Lagoon and Cameron Inlet (Flinders Is)
Other known breeding sites	40 known breeding colonies recorded from 1968 – 1982, many no longer viable
Population estimate	Australian population ~ 2,000 breeding pairs, Tasmanian population estimated at < 150 breeding pairs
Population trend and status	Declining population, TSP Act 1995 = Rare, status possibly needs review
Management Needs	All nest sites on recreational beaches need fencing to restrict vehicles, humans and domestic pets. All breeding sites require monitoring. More surveys needed in the southwest. Review status on TSP Act

Notes = Historically the Fairy Tern was recorded as inhabiting many of the low sandy islands in Bass Strait, including sites on Flinders Island at Adelaide Bay, Lady Barron and Whitemark (Hitchcock 1959). Breeding records were obtained in 1887 and 1889 at Mosquito Inlet (Robbins Island) and later in 1957 with up to 30 pairs reported breeding there. The species was also distributed along the northwest, north coast and more commonly down the east coast of Tasmania with a breeding record at Anson's Bay in 1952. Napier (1972) reports the spasmodic breeding behaviour of this species at Sandspit River, Rheban with a large variance in pairs attempting to breed on consecutive years. Wakefield (1982) outlines the decline of the only colony in the Derwent estuarine region i.e. Mortimer Bay due to repeated human disturbance. The species was considered resident at George's Bay, St Helens by Wall in 1983 (Wall

1983). Binns (1998) reported on the repeated attempts by Fairy Tern to breed at Maurourd Beach, St Helens but continually exposed to natural and human disturbances.

**All Breeding Sites Recorded in Tasmania (historic and recent)**

Tiddys Beach, Cape Sorell	Baynes Island
Cameron Inlet, Flinders Island	Petrification Bay
Lisdillon Beach, Triabunna	Little Musselroe
Maurourd Beach, east coast	Musselroe
Orford Spit	Seven Mile Beach (Anthony's)
Syndicate Lagoon	Bakers Beach
Blanche Point	Bridport Beach
Boobyalla, Ringarooma River	Campbells Point, Boobyalla
Cape Portland	Dianas Beach
Lades Beach, NE	Scamander River
George Town Reserve	Georges Bay, St Helens
Logan's Lagoon	Meredith River
Patriarch Inlet	Pebbly Bay
Policeman's Point, NE	Murdochs Beach, Tomahawk
Saltworks Beach	Rheban Beach & Sandspit River
Shipwreck Point, Perkins Is.	Kangaroo Island, Montagu
Bird Point, Robbins Island	Steels Beach, east coast
Sea Elephant, King Island	Southport Lagoon
North East River, Flinders Is.	Oyster Rocks, Flinders Island
Planter Beach, Flinders Is.	Key Island
Sorell	Ralph's Bay, South Arm
Gorringes Beach, Mortimer Bay	Pipeclay Lagoon, Cremorne
Whares Point, Bruny Island	Kelly Basin, Port Davey
South Beach, Little Chalky Island	Little Swanport
? Port Davey (no site location)	Swan Island
Black River Spit	Peggs Beach, NW
Four Mile Beach, west coast	Ocean Beach, Henty River
St. Helens Point	Anson's Bay
Yellow Rock River mouth	West Bay
Wrinklers Beach, Bicheno	Granville Harbour, west coast
Gellibrand Spit	Waterhouse Island
Cape Naturalist (N of Anson's Bay)	St Helens Point

References for sites are from Birds Tasmania records including the Tasmanian Bird Report systematic lists, R. Cooper pers. records, P. Duckworth pers. records, L. Wall pers. records, J. Whinray records, Napier (1972), Rounsevell (1983), Binns (1998)

**Pied Oystercatcher *Haematopus ostralegus***

Distribution in Tasmania	Widespread, coastally with large flocks occur in the Derwent Estuary, Moulting Lagoon, Flinders Island and King Islands and far northwest coast and islands
Occupancy	Sedentary but moves between roost and feeding sites. Singly, in pairs or in flocks of up to 200 or more, often with Sooty Oystercatchers
Preferred habitat	Beaches and bays especially sandy beaches and inter-tidal mudflats, roosting on spits and in the low dunes. Also feed in pasture near coasts.
Breeding habitat	Sand or shingle above high water mark on beaches, sandbars, estuaries, pairs may be faithful to sites
Breeding season	September to January
Results this survey	9,939 sightings – 198 sites – in 522 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	370 birds at Seven Mile (Anthony's Beach) (30/1/99)
Breeding sites this survey	33 breeding sites listed in Appendix C

Other known breeding sites	Coastally around King Island, Flinders Island, Maria Island, Seven Mile and Five Mile Beaches (Sorell area), key sites are Cape Portland, Derwent region, Moulting Lagoon and Marion Bay
Population estimate	Australian Population ~ 10,000 birds, Tasmanian population estimate ~ 2,500 birds
Population trend and status	Declining population well documented, low breeding success mainly due to disturbance, may qualify for listing on TSP Act 1995
Management Needs	Nest sites require protection, beach zoning and fencing from vehicles, human and dog disturbance September to January. Iconic species to use in education. Review status under the TSP Act

Notes = Excellent coverage of the Pied Oystercatcher is provided in HANZAB (Marchant & Higgins 1993). A well known and commonly seen species on Tasmania's sandy beaches. Tasmania has some of the largest Australian concentrations in the Derwent estuary (up to 300 at some sites), St Helens, Flinders Island (up to 500 at some sites) and far northwest coasts and islands. A total of 35-40 pairs have been recorded along Five Mile and Seven Mile Beaches in the Sorell area in the 1980s (Newman & Patterson 1986) but has likely to have declined due to increased recreational activity in recent years. A well studied species in Tasmania particularly in annual wader counts covering sites in the Derwent region including Lauderdale, Seven Mile and Five Mile Beaches, Marion Bay, Mortimer Bay and South Arm. Newman (1982, 1983, 1984, 1985, 1991, 1992) has studied this species in the southeastern region and recorded the decline of 8-9 pairs at Mortimer Bay to the point where sometimes only 1 young has been successfully fledged. Newman has forecast the decline of the species due to increasing disturbance around sandy beaches. Brothers *et al.* (2001) estimated about 110 pairs breeding on offshore islands nearly half of which are found in the Furneaux group. While Schulz (1990) reported the Pied Oystercatcher as the most frequently recorded wader on beaches of the southwest, however, the species may have declined in some localities since earlier surveys possibly due to increased visitation (i.e. southcoast walking track). Annual wader counts conducted since the 1970s for some regions show a steady decline in numbers and breeding success. Latest population counts suggest the total to be around 2,000 - 2,500 (Park 1997, 1999).

#### **Sooty Oystercatcher *Haematopus fuliginosus***

Distribution in Tasmania	Widespread coastally including Bass Strait islands. Larger numbers known in Furneaux Islands, the northwest coast, Cape Portland, and the Tamar and Derwent estuaries
Occupancy	Sedentary but moves between roost sites and feeding sites and winter flocks. Often seen with Pied Oystercatchers, singly, pairs or sometimes forming flocks of up to 100
Preferred habitat	Prefers rocky coastlines and offshore islands, using bays and more sheltered coastline during winter or rough weather
Breeding habitat	Offshore islands, secluded rocky shores. Nest scrapes on low rocky headlands or shingle beaches close to the high tide mark.
Breeding season	October to January
Results this survey	2,750 sightings – 134 sites – in 250 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	179 birds at North East River (river mouth) (25/2/99)
Breeding sites this survey	8 breeding sites = Australia Point, Coffin Bay, Foster Islands (east inlet), Green Island, Iron Pot, Lachlan Island, Lighthouse Bay (Bruny Is), Two Tree Point
Other known breeding sites	Many sites on offshore islands including King and Flinders and Cape Barren Is, Green Is (monitoring site) and west coast
Population estimate	Australian Population ~ 4,000 birds (may be an under-estimate), Tasmanian population estimate ~ 2,000 birds
Population trend and status	Stable population at stronghold sites on islands and isolated parts of west coast but declining in the northeast, east and southeast on heavily used beaches, may qualify for listing on TSP Act

Management needs	Increased survey along rocky coasts and at breeding sites. Iconic species (in conjunction with the Pied Oystercatcher) to use for education and display. Review status under the TSP Act
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Notes = Containing approximately 50% of the population, Tasmania is the Australian stronghold for this species. Brothers *et al.* (2001) estimated a total of 721 breeding pairs around Tasmania's offshore islands and comments that no island regardless of size, is without at least one pair of Sooty Oystercatchers. Wakefield and Wakefield (1998) also found this species commonly on islands and have recorded breeding success for several years on Green Is. The highest congregations occur in the Furneaux Group. Consistently highest counts for the Tasmanian mainland are from the Boullanger Bay / Robbins Passage area. Because of this species breeding site preference for rocky / shingle coasts including islands this species is probably less disturbed during breeding and therefore able to maintain its population size in Tasmania. A comprehensive evaluation of the Sooty Oystercatcher in the Hobart area from 1964-1982 (Newman 1982) found a population decline of 33% across the major sites of Pipeclay Lagoon and South Arm Neck. Similarly Schulz (1990) reported a decline in the species on the beaches of the southwest between 1983-1988 which he attributed to increased visitation.

### **Pacific Gull *Larus pacificus***

Distribution in Tasmania	Widespread around Tasmania on coast and islands including King Island and Furneaux Group, river margins and regularly inland
Occupancy	Partly resident and partly dispersal relating to age, breeding season and food source, either solitary, in twos or small groups (high at modified sites)
Preferred habitat	Usually sandy but also rocky coasts, bays, inlets, lagoons, estuaries and high numbers at modified sites e.g. tips, pasture, etc.
Breeding habitat	On raised areas, cliffs or headlands among rock or low vegetation, loose colonies or singly
Breeding season	October to December
Results this survey	3,265 sightings – at 166 sites – in 388 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	95 birds at Seven Mile Beach (31/1/99)
Breeding sites this survey	15 breeding sites = Pebbly Bay, Green Is, Lachlan Is, Barren Is, Pirates Bay, Baynes Is, Sloping Is, Lighthouse Bay and Cloudy Beach (Bruny Is), Hog Is, Policeman's Point, Curlew Is, Foster Is (west), Double Rock
Other known breeding sites	Over 130 sites on islands recorded by Brothers <i>et al.</i> (2001) of which 33 sites are monitored by Wakefield & Wakefield (1998)
Population estimate	Australian Population ~ 2,200 birds (1996 estimate) with some evidence of recent declines, Tasmanian population estimated 1,000 – 3,000 birds
Population trend and status	Stable but with some local increases at modified sites, widespread but naturally small in number, Tasmania is the stronghold
Management needs	Continued monitoring at key sites to determine level of displacement by Kelp Gull and if significant declines occurring

Notes = Population trends and dynamics of the Pacific Gull have been studied by Wakefield (1983). Brothers *et al.* (2001) confirms that this species although widespread does not occur in large numbers with most island populations consisting of only a few pairs. Brothers suggests a total island population of 1,322 breeding pairs which is slightly higher than other estimates. Wakefield (1984) has reported some displacement of this species at breeding sites by the relatively recent invasion of Kelp Gull, however, increased availability of food at as tips probably has caused an increase in numbers of both these species.

### **Kelp Gull *Larus dominicanus***

Distribution in Tasmania	Eastern Tasmania but mostly in southeast, sporadic elsewhere but expanding in range since arriving from New Zealand
Occupancy	Resident to migratory depending on age, dispersal between colonies in winter, either solitary, in twos but usually small to large groups

Preferred habitat	Sandy and rocky coasts, bays, inlets, lagoons, estuaries and modified sites e.g. tips, pasture, etc.
Breeding habitat	Beaches, ledges, rocky or low vegetation, mounds, islands, pairs or loose colonies
Breeding season	August to December
Results this survey	11,599 sightings – at 83 sites – in 166 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	2,030 birds on Green Island (1/2/98)
Breeding sites this survey	16 breeding sites – Isle of Caves, Rocky Islet, Lachlan Is, South Arm Neck, Sloping Is, Kelly Is, Iron Pot, Sandspit, Green Is, Governor Is, Orielton Lagoon, Curlew Is, Calvert’s Lagoon, Visscher Is, Barren Is, White Rock Point
Other known breeding sites	Recorded breeding on 26 islands by Wakefield & Wakefield (1998) and also breeds on Macquarie Island
Population estimate	Australian Population maybe 4,500 birds and increasing, Tasmanian population ~ 4,000 birds (Wakefield <i>et al.</i> 1995)
Population trend and status	Increasing and expanding its range as a relatively recent arrival from New Zealand / sub-Antarctic islands
Management needs	May pose a threat to Pacific Gull or other shorebird species due to locally high numbers particularly at breeding colonies. Monitoring at key sites needed to determine if or where control management may be needed

Notes = The population trend of this species in Tasmania has been monitored for many years mainly by W. Wakefield (1983, 1984, & Wakefield 1995). Since arriving in Tasmania from New Zealand (first reported in 1955 by L. Wall and first reported breeding in 1963 on Little Chalky island by Wolf) this species now breeds on island sites used by the Pacific Gull with possible displacement of that species now occurring (Wakefield 1983). Wakefield (1994) reported Kelp Gulls killing Pacific Gull at a rate of 5% per year in one major breeding colony. The species was reported at Anson’s Bay in 1996 (Wakefield & Wakefield 1996) at that time its northern most distribution. Wakefield *et al.* (1995) report that this species change their behaviour at the end of June by moving to their breeding colonies on offshore islands. The population size was reported to be about 400 breeding pairs in 1983 (Wakefield 1983) showing an increase in population size of 1/3 over four years. Brothers *et al.* (2001) suggest a population of 401 breeding pairs on 8 offshore islands, however, some surveys were conducted in the 1980s and the species has continued to expand its range since then.

#### **Silver Gull *Larus novaehollandiae***

Distribution in Tasmania	Widespread around all coasts and many islands including Tasman Sea and Bass Strait
Occupancy	Partly resident and migratory depending on breeding season and age, gregarious and usually in groups
Preferred habitat	Most areas coastal and inland including natural and modified habitats, e.g. tips, causeways, parks, jetties, etc
Breeding habitat	Headlands, causeways, islands, rocky, open or low vegetation
Breeding season	August to December
Results this survey	23,327 sightings – at 193 sites – in 490 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	2,000 birds at Ralph’s Bay Lauderdale (23/5/98)
Breeding sites this survey	16 breeding sites = Baynes Is, Maatsuyker Is, Curlew Is, Friendly Beaches, Lachlan Is, Barren Is, Orielton Lagoon, Kelly Is, Iron Pot, Isle of Caves, Cloudy Beach, Fortescue Bay, Binalong Bay, Green Point Beach, Green Is, Visscher Is
Other known breeding sites	Numerous around the coast and on offshore islands. Well known sites include the embankment of the Sorell Causeway, Egg Island, Fisher Is
Population estimate	Australian Population > 250,000 breeding pairs, Tasmanian southeastern population estimate ~ 7,000 birds in 1995 (Wakefield <i>et al.</i> 1995), the total population size likely to be many times greater than this



Population trend and status	Increasing due to urbanisation, proliferation of tip sites and other modified sites, common and widespread species
Management needs	Protection of core breeding sites, ensure that mitigation measures at sensitive sites (e.g. airstrips, ports, causeways, etc.) use mitigation methods rather than poison. Some control may be needed at sensitive shorebird breeding sites if impacted by artificially increased numbers

Notes = Common and widespread species which is increasing in population size due to the availability of modified sites. Large numbers recorded at tip sites and on urban coastlines. Population trend monitored for many years particularly in southeastern Tasmania (Wakefield *et al.* 1995) and found to have declined somewhat but fluctuated between 5,000 to 10,000 birds over 15 years. Likely to be many additional pairs breeding on offshore islands including Flinders and King Island (Green 1969). Management trials by Skira and Wapstra (1990) reported 5,000-8,000 birds breeding on Egg Island near Devonport. Brothers *et al.* (2001) reported this species to be found naturally in quite small, scattered colonies consisting of 20 – 50 pairs on many islands with a total island population estimate of 4,970 breeding pairs.

## MIGRATORY SHOREBIRDS

### Eastern Curlew *Numenius madagascariensis*

Distribution in Tasmania	North and east coasts, rarely inland, mainly Orielton-Sorell area, Tamar-George Town area and northwest around Boullanger Bay
Occupancy	September through to March/April, often in small flocks, a few may over-winter
Preferred habitat in Tas	Estuarine shores and bays of large rivers, feeds on the expanse of mudflats, or seagrass, roosts sandy spits, shoreline above high tide
Breeding sites	Russia and northeast China
Results this survey	1,139 sightings – at 22 sites – in 43 surveys
Sites recorded	Adelaide Bay, Bakers Beach, Barilla Bay, Cape Portland, East Inlet, George Town, Great Bay, Kangaroo Is, Lauderdale coastline, Little Boomer, Little Musselroe, Long Point, Mosquito Inlet, Moulting Lagoon, Musselroe, North East River (river mouth), Orielton Causeway, Orielton Lagoon, Ralph's Bay, Samphire Corner, Sorell and Waterview Sanctuary.
Largest count	166 birds at Kangaroo Island NW (30/1/99)
Other known sites	90% of population occurs in three areas (1) Boullanger Bay / Robbins Passage (2) Tamar River inc George Town and (3) Pittwater / Orielton Lagoon in the Derwent region
Most important sites	Kangaroo Is, Orielton-Sorell area, George Town
Population estimate	Australian Pop ~ 19,000 birds, Tasmanian pop estimate < 400 birds
Population trend and status	Declined by 65% since the 1950s and > 30% between 1991 - 2001, TSP Act 1995 = Endangered, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = The species is declining globally and its status in Tasmania has recently been reviewed by Reid and Park (2002) who estimate the total population to be less than 400 birds. Flocks of over 450 birds were regularly recorded in the Derwent area during the late 1940s, but falling to an average of 140 by the late 1970s. More recent counts are smaller still. Lane (1987) provides a total population estimate for Eastern Curlew in 1987 at 531 birds but this count contains minimal coverage of key sites in the northwest. Currently, the most important areas for this species are in three regions (1) Boullanger Bay / Robbins Passage where counts of 150-170 are consistently made on Kangaroo Is, (2) Tamar River including George Town with counts from 50-100 sometimes made (Henderson 1979, 1981), (3) Pittwater / Orielton Lagoon in the Derwent region where counts of 70- 100 birds have been made from time to time.

**Whimbrel *Numenius phaeopus***

Distribution in Tasmania	Scattered along northern and eastern coasts, occasionally Flinders Is
Occupancy	September/October through to March/April
Preferred habitat in Tas	Intertidal mudflats, sheltered coasts, lagoons, estuaries, river mouths, occasionally sandy beaches
Breeding sites	Alaska, Iceland, Scandinavia to parts of Scotland
Results this survey	37 sightings – 8 sites – in 14 surveys
Sites recorded	George Town Reserve, Little Boomer, Marion Beach, North West Bay (river mouth), Orileton Causeway, Orileton Lagoon, Sorell, Waterview Sanctuary
Largest count	7 birds at George Town Reserve (15/11/98, 13/2/99)
Other known sites	At times found at Boullanger Bay area including Perkins Is, Kangaroo Is, Marion Bay, Blackman Bay, Barilla Bay, Waterview Sanctuary, Orileton Lagoon, Adelaide Bay and Patriarch Inlet (Flinders Is)
Most important sites	George Town and Sorell areas
Population estimate	Australian pop < 10,000 birds, Tasmania's population estimate ~ 50 birds
Population trend and status	Unknown population trend, naturally rare species in Tasmania, may qualify for listing on TSP Act 1995 if declines shown, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed, review status under the TSP Act

Notes = Wader counts over many years show the Whimbrel is typically recorded in very small numbers (nil in some years) and at very few sites in Tasmania. Only recorded in small number (1-4) from Orileton / Sorell in the southeast since 1986 with some also seen in winter surveys (Moverley 1996). The maximum count reported has been 40+ in 1971 at Adelaide Bay on Flinders Island (Tas. Bird Report 1971). In 1999 a total of 20 sightings were received for Tasmania the highest count being 5 birds at George Town (Wakefield & Wakefield 1999). George Town has periodically been a consistent site for this species in the past with up to 6 birds observed annually (Henderson 1979, 1982). This species more commonly occurs across northern Australia (and New Zealand) and becomes rarer southward of Roebuck Bay in northwest Australia.

**Great Knot *Calidris canutus***

Distribution in Tasmania	Boullanger Bay area, also Cape Portland, Little Musselroe, and the Marion Bay, Orileton, Sorell area
Occupancy	October / November through to February / March
Preferred habitat in Tas	Sheltered coasts, estuaries, lagoons with extensive mudflats, also some ocean beaches
Breeding sites	Northeastern Siberia
Results this survey	25 sightings – at 2 sites – in 2 surveys
Sites recorded	Bird Point (Robbins Is), Five Islets (Robbins Is)
Largest count	20 birds at Five Islets (Robbins Is) (30/1/99)
Other known sites	Kangaroo Island, Flinders Is, Orileton/Sorell area, South Arm Neck, Cape Portland, Perkins Island
Most important sites	Boullanger Bay / Robbins Passage
Population estimate	Australian Population ~ 270,000 birds, Tasmanian population estimate 100 - 200 birds
Population trend and status	Unknown population trend, only recorded in small numbers sporadically, naturally rare in Tasmania, may qualify for listing on TSP Act, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed. Review status under TSP Act

Notes = Infrequently recorded species in Tasmania and not always recorded annually. Great Knot are consistently observed in the largest numbers in the Boullanger Bay / Robbins Passage area where Ashby (1987, 1991) has observed up to 60 in the summer time. Infrequently recorded in the south with only four records at two sites between 1973 and 1993, at South Arm Neck, Orielton / Sorell area (Moverley 1996). Has also been recorded on Flinders Island (Milledge 1983) and one at Cape Portland in 1966, although the scientific name is confused (Thomas & Wall 1966).

**Red Knot *Calidris canutus***

Distribution in Tasmania	Regularly recorded coastally around Tasmania, on King Island and Flinders Island, especially Boullanger Bay/ Robbins Passage area, Port Sorell and George Town area
Occupancy	August / September through to February / May, small flocks of 30 or less often with Bar-tailed Godwits, some over-winter
Preferred habitat in Tas	Muddy estuaries, intertidal mudflats, estuaries, sandy beaches of sheltered coasts
Breeding sites	North America, Russia, Greenland, Alaska and Canadian Arctic
Results this survey	816 sightings – at 7 sites – in 8 surveys
Sites recorded	Bird Point, Calvert's Lagoon, Five Islets, George Town Reserve, Musselroe, Orielton Causeway, Shipwreck Point (Perkins Is)
Largest count	500 birds at Five Islets Robbins Is) (30/1/99)
Other known sites	Cape Portland, Orielton/Sorell, Midway Point, Lades Beach, Ralph's Bay, also Flinders Is and Cape Barren Is, Barilla Bay, George Town, Pipeclay Lagoon, South Arm Neck, Waterview Sanctuary
Most important sites	Boullanger Bay / Robbins Passage
Population estimate	Australian Population ~ 153,000 birds, Tasmanian population < 2,000 birds
Population trend and status	Unknown but possibly stable, largest numbers occur in the Boullanger Bay /Robbins Passage area, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = Regularly recorded in the Boullanger Bay / Robbins Passage area and in numbers from 200 – 1,000 (Ashby 1987, 1990, 1991, Wakefield & Wakefield 1997). Regularly recorded in the summer but in much smaller numbers in the Derwent region (Tas. Bird Report 1977, Patterson 1984, 1986, Bulman 1990, Moverley 1996). Frequent visitor in small numbers to the Cape Portland area (Cooper 1981) and occasionally in George Town area (Wakefield & Wakefield 1996). Also small numbers recorded on Flinders Island especially Adelaide Bay (Milledge 1983) and Cape Barren Is (Wakefield & Wakefield 1995).

**Sharp-tailed Sandpiper *Calidris acuminata***

Distribution in Tasmania	Coastal areas east of line from George Town to Hobart, scattered in west, also islands in Bass Strait, occasionally inland
Occupancy	August / November through to January / February, few remain over-winter
Preferred habitat in Tas	Muddy edges of shallow, fresh or brackish wetlands, including lagoons, swamps, lakes and dams
Breeding sites	Northeast Siberia, possibly also Norway
Results this survey	107 sightings – at 10 sites – in 11 surveys
Sites recorded	10 sites = Break Yoke Beach, Cape Portland, Cowper Point, Little Musselroe, Logan's Lagoon, Montague Island, Ocean Beach, Pebbly Beach, Policeman's Point, Seven Mile Beach (Anthony's)
Largest count	56 birds at Montague Island (30/1/99)
Other known sites	Pipeclay Lagoon, Shipwreck Point (Robbins Is), Logan's Lagoon, Adelaide Bay, Waterview Sanctuary, Orielton, Barilla Bay, occasionally at Clear Lagoon and Calvert's Lagoon, Legana, Lades Beach, Sandy Point

	(N of Bridport), Cape Portland, King Island
Most important sites	Boullanger Bay / Robbins Passage
Population estimate	Australian Population ~ 166,000 birds, Tasmania population estimate ~ 500 birds
Population trend and status	Unknown but possibly stable, naturally rare and edge of range for the species in Tasmania, low numbers recorded, CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = Seldom seen in large numbers in Tasmania (i.e. < 50 birds per site), the Sharp-tailed Sandpiper has been recorded from the Orielton / Sorell and Barilla Bay areas over many years as a summer visitor (Tas. Bird Report 1977, Park 1983, Bulman 1990). The species has been recorded at Adelaide Bay and other sites on Flinders Island (Green 1969, Milledge 1983) and also on King Island (Patterson 1986). Seen in low numbers at times at Cape Portland and Musselroe (Cooper 1981, Lord 1994, Wakefield & Wakefield 1996). A rare record of 7 birds occurs for the Central Highlands area in 1983 (Patterson 1984). A recent sighting of 500 birds at Mosquito Inlet (Robbins Island) in 2000 by R. Ashby, may have been first arrivals which suggests the total population estimate may be fairly accurate. This species, unlike most other waders, prefers freshwater and brackish habitat and feeds while paddling rather than on exposed mudflats (Moverley 1996).

#### **Curlew Sandpiper *Calidris ferruginea***

Distribution in Tasmania	King Island and Furneaux group, mostly in east of line between George Town and Lake Augusta, occasional northwest and west around Strahan, Macquarie Harbour
Occupancy	September / October through to March / April, large flocks in 1,000s often associated with Red-necked Stints and other shorebirds
Preferred habitat in Tas	Extensive mudflats and soft sand in sheltered areas, also estuaries, bays, lagoons and sewage farms
Breeding sites	Grassy tundra of northern Siberia
Results this survey	3,456 sightings – at 26 sites – in 53 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	1,000 birds at Logan's Lagoon (Flinders Is) (26/2/99)
Other known sites	Well recorded at many sites in the east
Most important sites	Boullanger Bay / Robins Passage particularly Shipwreck Point and Kangaroo Is, Derwent region especially Orielton / Sorell area, Flinders Is
Population estimate	Australian Population ~ 188,000 birds, Tasmanian population 3,000 to 5,000 birds
Population trend and status	Generally stable with consistent numbers recorded at most sites over many years, however, some declines in the Derwent region evident. Larger counts now obtained with better coverage of the northwest region, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = The Curlew Sandpiper is one of the more regularly recorded waders in Tasmania. Adults arrive around September and depart by March / April, entering Tasmania using a southward migration through north-west Australia (Barter 1984, 1986, Newman *et al.* 1985). First year birds arrive nearly two months later and those with insufficient fat reserves may over-winter on Flinders Island and Victoria (Barter 1984). Longevity is estimated at between 7 – 15 years (Harris 1984). The species has been and continues to be well recorded in southern Tasmania especially at sites in the Derwent region with numbers at times totalling around 1,000 (Tas. Bird Report 1977, Fletcher *et al.* 1982, Newman *et al.* 1985, Patterson 1986, Bulman 1989, Lord 1994). Milledge (1983) reported numbers up to 2,000 at sites such as Adelaide Bay on Flinders Island. A commonly recorded species numbering 100+ at George Town (Henderson 1979, 1981) and similarly in the Cape Portland area (Cooper 1981). Large numbers recorded (up to 1,000 – 2,000) around Bird Point, Shipwreck Point and Kangaroo Island and 500 to 1,000 regularly at other

Boullanger Bay / Robbins Passage sites (Ashby 1987, 1990, 1991, Lord 1995, Park 1997). A comparison between counts at sites in the northeast and the Derwent region over 15 consecutive counting years has found the species to be relatively stable in the northeast but declining in the Derwent region (Cooper *et al.* 1996).

**Terek Sandpiper *Xenus cinereus***

Distribution in Tasmania	Around Port Sorell and George Town, in southeast around Sorell, Orielton, Barilla Bay, South Arm to the west at Macquarie Heads, Kangaroo Island and Flinders Island
Occupancy	September / October through to March / May, may roost with other waders
Preferred habitat in Tas	Saline intertidal mudflats in sheltered estuaries and lagoons
Breeding sites	Northern Russia through Arctic to central Finland
Results this survey	2 sightings – at 2 sites – in 2 surveys
Sites recorded	Five Islets (Robbins Island) and Shipwreck Point (Perkins Is)
Largest count	1 bird at each site
Other known sites	Sporadic over 25 years at George Town, Orielton / Sorell, Barilla Bay, South Arm Neck, Henty River mouth, Flinders Is, Five Islets, Shipwreck Point, Trial Harbour, Calvert's Lagoon
Most important sites	All sites
Population estimate	Australian Population ~ 18,000 birds, Tasmania population estimate probably < 10 birds
Population trend and status	Unknown population trend, only occasionally recorded in Tasmania, extremely rare, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = The Terek Sandpiper was first recorded at Port Sorell in 1973 (Tas. Bird Report 1973) and has only occurred at other sites sporadically since (Higgins & Davies 1996). Between 1973 – 1993, this species has been recorded only once (1 bird) at Orielton/Sorell in 1992 (Moverley 1996). Several sightings of 1-2 birds were reported for Shipwreck Point and Five Islets (Robbins Is) in 1999 (Park 1999). This species regularly occurs on the northern Australia coast from Shark Bay (WA) to the estuaries of northern NSW (Lane 1987) and it is likely Tasmania is just south of its natural range.

**Common Greenshank *Tringa nebularia***

Distribution in Tasmania	Mainly coastal from around Temma in northwest to Hobart in southeast, also King Island and Flinders Island
Occupancy	October to late November through to March - April, numbers fluctuate annually, some winter sightings
Preferred habitat in Tas	Salt or freshwater wetlands, marshland or mudflats, sewage farms, can be inland and away from beaches
Breeding sites	Extensive, from Scotland through to Russia and the far northeast of Siberia
Results this survey	884 sightings – 17 sites – in 32 surveys
Sites recorded	17 sites = Adelaide Bay (Flinders Is), Bird Point (Robbins Is), Cameron Inlet (Flinders Is), Cowper Point (King Is), George Town Reserve, Georges Bay, Long Point, Meredith River (river mouth), Moulting Lagoon, Musselroe, North East River (river mouth, Flinders Is), Orielton Causeway, Orielton Lagoon, Waterview Sanctuary, Sea Elephant Inlet (King Is), Sewage Point Spit, Syndicate Lagoon (Flinders Is)
Largest count	145 birds at Adelaide Bay (Flinders Is) (21/2/99)
Other known sites	Marion Bay, Pebbly Bay, Temma (northwest)
Most important sites	Most regularly recorded down the east coast to the Derwent region but high counts in northwest at Bird Point & Five Islets, Moulting Lagoon and also at Adelaide Bay (Flinders Is)
Population estimate	Australian Population ~ 20,000 birds, Tasmanian population ~ 500 birds
Population trend and	Stable, naturally rare species in Tasmania, JAMBA / CAMBA

status	
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = The Common Greenshank occurs regularly in small numbers in the southeast region especially at Orielton, Sorell and South Arm Neck where counts between 1973 – 1993 show numbers to be fairly stable (Moverley 1996). The species is also a regular visitor to the George Town Reserve area on the Tamar (Henderson 1979, 1982). Moulting Lagoon is also considered an important site for the species with high numbers being recorded by Wakefield (1984) to the present (Blackhall 1998). The highest annual wader count of this species is 173 recorded in 1999 (Park 1999) but this did not include any Flinders Island counts. Adelaide Bay on Flinders Island is a regularly consistent site for this species with numbers up to 100 recorded at times (Milledge 1983). Summary counts for Tasmania give a total population size of 278 birds in 1987 (Lane 1987), however, more extensive counting of sites in the northwest region should now increase this estimate.

#### **Ruddy Turnstone *Arenaria interpres***

Distribution in Tasmania	Coastally widespread including in Bass Strait, King Island and Flinders Island, mostly between Temma and St Helens, and especially Boullanger Bay area in northwest
Occupancy	September through to March / April, Some birds remain over winter thinly scattered in the northeast, northwest and King Island
Preferred habitat in Tas	Exposed rocky or sandy coastline containing kelp or beach-washed debris, tidal pools
Breeding sites	Coastally through Europe, Asia and North America
Results this survey	6,338 sightings – at 27 sites – in 66 surveys
Sites recorded	Sites are listed in Appendix B
Largest count	900 birds at Shipwreck Point (Perkins Is) (30/1/99)
Other known sites	Regularly recorded at many sites around the coast and on offshore islands
Most important sites	Highest numbers on Kangaroo Island, Shipwreck Point, Five Islets and Bird Point (Boullanger Bay / Robbins Passage), also on King Island and consistent annual counts at Cape Portland, Little Musselroe, George Town area and Moorland Point
Population estimate	Australian Population ~ 14,000 birds, Tasmanian population estimate ~ 5,000 birds
Population trend and status	Some national declines being reported but Tasmanian counts appear stable, national stronghold for species, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = This species is regularly recorded at many locations around the north and east coast including on King, Flinders and other offshore islands (Milledge 1983, Brothers *et al.* 2001). Its highest density is in the northeast and northwest of the State. Smaller numbers at fewer sites have been recorded in the Derwent region over 20 years (Moverley 1995). Consistently recorded at George Town (Henderson 1981, 1982, Tas. Bird Report systematic lists), Lades Beach (Duckworth 1999), Cape Portland (Cooper 1981) and at Moorland Point (J. Hunter, pers. records). The annual wader count for 1998 estimated a population size of 2,606 birds (Park 1998) and 2,040 birds in 1997 (Park 1997), both counts excluding King and Flinders Island. King Island had a count of 830 birds in 1987, Lane (1987). Kangaroo Island had a count of 1,500 birds in 1998 (Park 1998). A total population estimate of 5,000 – 10,000 was reported for Tasmania by Higgins and Davies (1996) but this range appears too high.

#### **Sanderling *Calidris alba***

Distribution in Tasmania	Mainly the west coast around the Henty estuary, the northeast especially Little Musselroe Bay and the mouth of Anson's Bay and far northwest coasts King Island and Furneaux Group, rarely sighted between Marrawah
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	and Cape Naturalist
Occupancy	Mid September through to April, small flocks of less than 100 individuals, may roost with other small waders, some may over-winter
Preferred habitat in Tas	Exposed sandy ocean beaches usually strewn with kelp, seaweed and other debris
Breeding sites	North America to northern Russia and islands in Arctic Ocean
Results this survey	1,415 sightings – at 11 sites – in 27 surveys
Sites recorded	11 sites = Bay of Fires, Bird Point, Blanche Point, Dianas Basin, Friendly Beaches, Maurouard Beach, Ocean Beach, Policeman’s Point, Seven Mile Beach (Anthony’s), Shipwreck Point, Steels Beach
Largest count	266 birds at Blanche Point (21/11/98)
Other known sites	Marion Bay, Scamander, Pipeclay Lagoon
Most important sites	Boullanger Bay / Robbins Passage area and Ocean Beach area
Population estimate	Australian Population ~ 8,000, Tasmania population estimate ~ 500 birds
Population trend and status	Likely increasing, still small numbers but more consistent sightings, CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = The first record of Sanderling in Tasmania was by Wall in 1965 at Anson’s Bay (Wall 1965). Since then the species has been recorded irregularly until about the mid 1980s. Milledge (1983) recorded small numbers of birds at Foo Chow Inlet and Patriarch Inlet, Flinders Island. Largest numbers recorded were 200 and 300 at Ocean Beach Strahan (Park 1996) and 140 in the Furneaux Group (Lane 1987). Small numbers (< 20 birds) have consistently been recorded in the Boullanger Bay area at Shipwreck Point and Bird Point since the mid 1990s. Considering the number of sites this species has been recorded during this survey it may be that the Sanderling is increasing its frequency of occurrence and range in Tasmania.

#### **Pacific Golden Plover *Pluvialis fulva***

Distribution in Tasmania	Few and low numbers, mainly in east through to Bruny Island with key areas being Derwent Estuary and Pittwater and along the northwest coast from Flowerdale to Boullanger Bay
Occupancy	September / October through to March / May, with a few over-winter
Preferred habitat in Tas	Bays, islands, extensive mud flats of the larger river systems but some small flocks also use marsh land or nearby agricultural land
Breeding sites	Arctic and sub-Arctic tundra of Siberia and Alaska
Results this survey	747 sightings – at 17 sites – in 34 surveys
Sites recorded	17 sites = Barilla Bay, Bird Point, Cape Portland, Foster Islands (west inlet), George Town Reserve, Lanoma Point, Lisdillon Beach, Little Musselroe, Montague Island, Moorland Point, Musselroe, North East Arm, Orielson Causeway, Orielson Lagoon, Pipeclay Lagoon, Seven Mile Beach (Anthony’s), Wallaby Islands
Largest count	146 birds at Cape Portland (15/2/99)
Other known sites	Occurs most consistently at the sites listed
Most important sites	Kangaroo Island, Shipwreck Point consistently at Cape Portland / Little Musselroe, George Town area, consistently Orielson, Pipeclay area
Population estimate	Australian Population ~ 9,000 birds, Tasmanian population < 800 birds
Population trend and status	Declining, particularly at sites in the northeast, east and southeast, may qualify for listing on TSP Act, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed, review status under the TSP Act

Notes = A distinctive species that is regularly recorded in varying numbers at regular sites around Tasmania. Consistently recorded at most times of the year at Moorland Point with numbers around 30-50

over summer (Hunter, pers. records). Also consistently recorded but at lower numbers in the George Town area (Henderson 1979, 1982) and Cape Portland where counts of up to 200 were recorded in the early 1980s (Cooper 1981), but now not this high. Results indicate there may have been a peak in numbers for Pacific Golden Plover around 1988 for northeastern sites and Derwent region sites, with a steady decline thereafter (Cooper *et al.* 1996). Counts ranging between 168 - 319 birds in the Derwent region were common up to 1988 (Tas. Bird Report 1977, Bulman 1990) but have steadily decreased annually since (Tas. Bird Report systematic lists including Lord 1994, Park 1999). Numbers between 20 – 250 have been recorded at several sites in the Boullanger Bay / Robbins Passage area since Ashby commenced survey work (1987, 1990, 1991, Tas. Bird Report systematic lists).

Tasmania's population estimate for the Pacific Golden Plover in 1984 was 447 birds (Patterson 1984) compared to 574 birds in 1999 which included more extensive coverage of the northwest Boullanger Bay / Robbins Passage area (Park 1999). This may suggest a much wider decline of the species in its northern and eastern ranges throughout Tasmania.

**Grey-tailed Tattler *Heteroscelus brevipes***

Distribution in Tasmania	Scattered locations in the southeast around Sorell, northeast, northwest and also King Island and some Furneaux Group
Occupancy	October / November through to March / June, small numbers, occasionally seen in winter
Preferred habitat in Tas	Sheltered coasts or estuaries with reefs or rock platforms or intertidal mudflats
Breeding sites	Siberia
Results this survey	41 sightings – at 5 sites – in 17 surveys
Sites recorded	5 sites = Bird Point (Robbins Is), Cape Portland, George Town Reserve, Montague Island, Moorland Point
Largest count	6 birds at Bird Point (Robbins Island) (30/1/99)
Other known sites	Sporadically seen at Waterview Sanctuary, Cape Portland / Little Musselroe, King Island and Furneaux Group, mostly on north coast from Boullanger Bay to Cape Portland and east at Anson's Bay, Meredith River, Lisdillon, Triabunna to Marion Bay and Derwent region and Bruny Island, also in the west in the Pieman and around Four Mile Beach, Moulting Lagoon
Most important sites	Boullanger Bay / Robbins Passage area, Moorland Point, George Town and Cape Portland and southeast around Sorell
Population estimate	Australian Population ~ 36,000 birds, Tasmanian population probably < 50 birds
Population trend and status	Unknown population trend, very rare and sporadic species in Tasmania, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = The Grey-tailed Tattler is regularly recorded but in very low numbers (< 10 at any site) in Tasmania. Regularly recorded in a small number of sites but sporadically occurs at others. At sites on Flinders Island 1 to 2 birds have been sighted between 1969 and 1973 by Milledge (1983). Its occurrence in the Orielton / Sorell area from the 1960s to 1982 is reviewed by Park (1983) with irregular counts of less than 10 birds. Lord (1994) reports 3 birds in 1993 (2 at Barilla Bay and 1 Orielton/Sorell) as being the first in the Derwent region since 1989. Previous to this there were 17 birds in the Derwent region in 1974 (Tas. Bird Report 1977). Henderson (1979, 1982) records annual counts of up to 14 birds for the George Town Reserve area. Most recent counts in Tasmania are 12 birds in 1998, 9 birds in 1999 (Park, 1998, 1999), however, 9 birds were recorded at Bird Point alone in 1990 (Ashby 1991). A summer annual count of 180 Grey-tailed Tattler on Kangaroo Island in 1994 (Lord 1995) is hard to explain as it is significantly higher than any count previous or since.



**Bar-tailed Godwit *Limosa lapponica***

Distribution in Tasmania	Scattered reports on north and east coasts mainly in the southeast between Orford and Southport Lagoon, few records in the west around Port Davey, Macquarie Heads, Strahan
Occupancy	September through to March, usually in small flocks, sometimes with Red Knot or other waders, small numbers over-winter
Preferred habitat in Tas	Larger estuarine waters and nearby mudflats, sometimes roost at the mouths of smaller rivers and creeks and on man made causeways
Breeding sites	Northern Scandinavia, Russia and northwest Alaska
Results this survey	1,036 sightings – at 25 sites – in 51 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	500 birds at Five Islets (Robbins Island) (30/1/99)
Other known sites	On Flinders Island recorded at Adelaide Bay, Long Point, Patriarch Inlet and North East River, and also at Eddystone Point, Lades Beach, Ocean Beach, Great Bay and Little Taylor Bay on Bruny Is, Blanche Beach in the St Helens area, Waterview Sanctuary, Moulting Lagoon, Maurouard Beach, also on Cape Barren Is at Lee River
Most important sites	Boullanger Bay / Robbins Passage for highest counts, George Town and Derwent region for consistent long term counts
Population estimate	Australian Population ~ 165,000 birds, Tasmanian population < 800 birds
Population trend and status	Stable small population, better site coverage in the northwest have boosted annual counts, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = Regular counts of the Bar-tailed Godwit in summer and winter have been obtained for nearly 30 years in the Derwent region and also over a long time in the northeast at Cape Portland / Little Musselroe and at George Town. Cooper (1981) reports this species as being scarce in the Cape Portland area and has been recorded irregularly since. Summer counts for the Derwent region have varied between 165 birds in 1973 (Tas. Bird Report 1977) to 104 birds in 1989 (Bulman 1990) including 41 birds at Orielton / Sorell during winter in 1989. Significant numbers are still recorded at sites in this region, such as 70 birds at Orielton Lagoon in 1999. George Town contained up to 50 - 60 birds annually during the summers of the late 1970s and 80s and continues to the present to be a regular site including for birds over-wintering (Henderson 1979, 1982, Lord 1994, Park 1999). Small numbers (1-6) are recorded regularly at Lades Beach, north of Bridport (Duckworth 1999). During the 1990s the Bar-tailed Godwit has been recorded in densities ranging from 1 – 500 birds at sites in the Boullanger Bay / Robbins Passage area (Ashby 1991), including 350 birds at Bird Point (Park 1996) and 500 birds at Five Islets in 1999 (Park 1999), making it the most important region for the species.

**Red-necked Stint *Calidris ruficollis***

Distribution in Tasmania	Widespread coastally around Tasmania, returning annually to same sites
Occupancy	August / September through to March, some over-winter
Preferred habitat in Tas	Soft mud along many beaches, river estuaries and nearby wetlands, occasionally inland lakes, sewage farms
Breeding sites	Tundra areas of northern Siberia and Alaska
Results this survey	24,147 sightings – at 53 sites – in 126 surveys
Sites recorded	All sites are listed in Appendix B
Largest count	4,000 birds at Syndicate Lagoon (Flinders Is) (26/2/99)
Other known sites	Occurs at many of the sites listed on a regular basis
Most important sites	Boullanger Bay / Robbins Passage especially Bird point, Five Islets, Kangaroo Is, Perkins Is and Montagu Is
Population estimate	Australian Population ~ 353,000 birds, Tasmanian estimate < 10,000 birds
Population trend and status	Declining, trends evident at study sites over 30 years, may qualify for listing on the TSP Act 1995, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed, review status

	under the TSP Act
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Notes = A common migrant to Tasmania arriving in September and departing in March / April. Adult Red-necked Stints enter Australia through the northwest region and depart on their northward migration by overflying the Bass Strait Islands and Victoria (Newman *et al.* 1985). Regularly recorded in numbers of 350 - 800 during the 1970s and early 1980s at George Town (Henderson 1982, Patterson 1986) but numbers have been only < 200 annually since this time (Lord 1995, Park 1996, Park 1997, Park 1998). Flocks totalling around 3,000 birds were regularly recorded in the Derwent region (Fletcher *et al.* 1982, Newman *et al.* 1985) during 1973 – 1981 period, however, long term analysis of counts at several sites show an overall decline of Red-necked Stint in southeastern Tasmania during the 1973-93 period (Moverley 1996). Trends in numbers recorded in the northeast at George Town and Cape Portland and those in the Derwent region for 15 years (1981-96) of consecutive annual counts show fluctuating counts but with a general steady rate of decline (Cooper *et al.* 1996). A population estimate for Red-necked Stint in 1987 was 9,720 birds (Lane 1987), compared to more recent population estimates of 7,177 birds in 1998 and 6,679 birds in 1999 which also include much better coverage of key northwestern sites (Park 1998, 1999). The total population may be slightly higher than these recent estimates to include Flinders Island and King Island populations. The highest numbers of this species are still being recorded in the Boullanger Bay / Robbins Passage area (Ashby 1990, 1991, Park 1997).

#### **Double-banded Plover *Charadrius bicinctus***

Distribution in Tasmania	Widespread in east and north including Bass Strait, regularly seen Cape Portland, King Island and the Derwent and Pittwater areas, also inland including Midlands area
Occupancy	July / August through to February / April, flocks of up to 100, sometimes with Red-capped Plover
Preferred habitat in Tas	Sheltered bays, marshes, saltmarsh, also agricultural land and poorer pasture
Breeding sites	North and South Island of New Zealand
Results this survey	1,062 sightings – at 24 sites – in 48 surveys
Sites recorded	Arthur Beach, Barilla Bay, Bird Point, Calvert's Lagoon, Cape Portland, Forwards & Picnic Beach, Grindstone Bay, Lauderdale Coastline (Ralph's Bay), Little Boomer, Little Musselroe, Little Swanport (lagoon mouth), Moorland Point, Moulting Lagoon, North East Arm, Ocean Beach, Orielson Causeway, Orielson Lagoon, Patriarch Inlet, Pipeclay Lagoon, Ralph's Bay, Seven Mile Beach (East end), Shipwreck Point, South Arm Neck (Ralph's Bay Wildlife Sanctuary), Stumpy Bay
Largest count	160 birds at Orielson Lagoon (26/6/99)
Other known sites	Bird Point, Five Islets, Montague Is, Perkins Is, George Town, on Flinders Is at Sellars Lagoon, Adelaide Bay & Foo Chow Inlet, Stokes Point (King Is) – also many inland sites
Most important sites	Cape Portland regularly has good numbers. Good counts may be obtained at different sites, recently George Town, Seven Mile (Anthony's), Shipwreck Point (Perkins Is), Lades Beach
Population estimate	Australian Population ~ 12,450 birds, Tasmanian estimate < 2,000 birds
Population trend and status	Stable, no evidence of declines but small population size
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed, summer and winter, including at inland sites

Notes = Unlike other species, the Double-banded Plover migrates from New Zealand and arrives in Tasmania much later than other migratory species. Although small numbers are usually recorded during summer, surveys for this species must be undertaken in winter and target inland as well as coastal area. Newman (1982) reported that Tasmania is the Australian stronghold for this species. Ashby (1991) consistently recorded Double-banded Plover (1 – 20 birds) at sites in the northwest around the late 1980s, however, more recent counts are of higher numbers (150 – 300 birds) (Lord 1994, Park 1997). In the Derwent region counts of this species have ranged fairly consistently between 200 – 800 birds between

1986-94 (Patterson 1986, Bulman 1990, Lord 1994). Significant numbers have been recorded historically from Cape Portland (Thomas & Wall 1966) and George Town (Patterson 1984) with similar numbers continuing to the present time. Counts of Seven Mile (Anthony's) Beach in April 2000 was of 180 birds (west end) and 600 birds (east end) (B. Wakefield, pers. com). Small numbers have been recorded on Prion Beach in southwest Tasmania on rare occasions (Schulz 1990). The species also occurs at several sites on Flinders Island and King Island (Schulz 1990). A flock of 197 birds was reported at Ocean Beach (Park 1998). Lane (1987) published a total of 2,014 birds in Tasmania for 1987, which included some inland sites. In 1996 and 1999, the annual winter wader counts recorded total population sizes of 966 - 819 birds (Park 1996, Park 1999) for coastal sites, so it may be that the 1987 population estimate is still appropriate.

#### **Grey Plover *Pluvialis squatarola***

Distribution in Tasmania	Mainly north and east coastal, also Flinders Island, frequently nomadic moving from site to site
Occupancy	October / November through to March
Preferred habitat in Tas	Mainly sandy shores, inlets, estuaries and lagoons containing mudflats, occasional rocky coasts
Breeding sites	Tundra of Eastern Siberia, Arctic, Alaska and Canada
Results this survey	200 sightings – at 1 site – in 1 survey
Sites recorded	1 site recorded = Five Islets (Robbins Is)
Largest count	200 birds at Five Islets (30/1/99), largest count ever recorded
Other known sites	Orielton Lagoon, Kangaroo Island, Shipwreck Point, George Town, Beer Barrel Beach, mouth of Great Musselroe Bay, Little Musselroe, Orielton / Sorell area
Most important sites	Boullanger Bay / Robbins Passage esp. Five Islets, Kangaroo Is and occasionally sighted at George Town, Cape Portland, Derwent region
Population estimate	Australian Population ~ 12,000 birds, Tasmanian population estimate < 250 birds
Population trend and status	Unknown population trend, very rare in Tasmania although being recorded more regularly in Boullanger Bay / Robbins Passage area, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = Very rarely reported in Tasmania prior to the 1990s. Occurs in ones or twos or occasionally small flocks at scattered sites. Only recorded in recent years with any regularity in the Boullanger Bay area where it has occurred in largest numbers on Five Islets (20 – 200 birds) and on Kangaroo Island (45 – 100 birds) where some birds may even over-winter (Ashby 1991, Lord 1995, Wakefield & Wakefield 1995, 1996, 1997, Park 1998). A small number of individuals have been recorded for several years at George Town / Tamar Estuary, Cape Portland/ Little Musselroe and in the Derwent region (see next section).

#### **Lesser Sand (Mongolian) Plover *Charadrius mongolus***

Distribution in Tasmania	Mainly northwest in Boullanger Bay area, in north from Cape Portland to Tamar River and south around Pittwater, Orielton and Sorell, rare on King Island and Flinders Island
Occupancy	July / October through to April
Preferred habitat in Tas	Coastal beaches, sheltered bays, and estuaries with tidal mudflats, sometimes sandy beaches and saltmarsh
Breeding sites	Central and northeast Asia including China, Mongolia and Himalayas
Results this survey	33 sightings – 5 at sites – in 9 surveys
Sites recorded	5 sites = Bird Point, Cape Portland, Five Islets, Orielton Lagoon, Shipwreck Point
Largest count	11 birds at Orielton Lagoon (5/11/98)
Other known sites	Low numbers at all sites including on Flinders Is, King Is, Lades Beach

Most important sites	Cape Portland and Boullanger Bay / Robbins Passage area especially Bird Point, Shipwreck Point and Kangaroo Island
Population estimate	Australian Population ~ 20,000 birds, Tasmania probably < 100 birds
Population trend and status	Stable population, only small numbers ever recorded but regular sightings at several sites over many years, JAMBA / CAMBA
Management needs	Protection of key feeding and roost sites from human disturbance including vehicles, infrastructure developments, water pollution, uncontrolled stock grazing. Regular monitoring needed

Notes = Small numbers of the Lesser Sand (previously Mongolian) Plover have been recorded at regular intervals at a few sites around Tasmania. Regular sightings of the species have occurred in northeast at Port Sorell to Little Musselroe Bay with Cooper (1981) reporting that the species could be seen at Cape Portland in all months in small numbers (5 - 10 birds). The species continues to be observed in this area (Wakefield & Wakefield 1996, 1997, Bonnitcha 1998). Lesser Sand Plover have been most regularly observed since the 1990s in numbers of 2 – 27 birds at sites in the Boullanger Bay / Robbins Passage area, especially on Bird Point, Shipwreck Point and Kangaroo Island. Small numbers have persisted in the Sorell / Orielton Lagoon area (Patterson 1984, 1986, Bulman 1989) but sightings are becoming intermittent. Duckworth (1999) has recorded small numbers (< 3 birds) at Lades Beach, Bridport during the 1990s. Schulz (1990) reported the species as a rare visitor to the Bass Strait islands but found it at several sites on Flinders Island and one bird at Surprise Bay on King Island.

### SHOREBIRD SPECIES OF CONSERVATION CONCERN IN TASMANIA

The conservation assessment of shorebird species according to the Tasmania's *Threatened Species Protection Act 1995* (TSPA) are shown in Table 19. The Conservation Categories on the TSPA are Extinct, Endangered, Vulnerable and Rare with criteria available to determine each category.

**Table 19 Shorebird Species in Tasmania of Conservation Concern.**

Species	Status in Tasmania
Little Tern	TSPA = Endangered, status appropriate
Fairy Tern	TSPA = Rare, status requires review
White-fronted Tern	TSPA = Rare, status requires review
Eastern Curlew	TSPA = Endangered, status appropriate
Hooded Plover	Conservation Concern – declining pop'n, requires TSPA assessment
Pied Oystercatcher	Conservation Concern – declining pop'n, requires TSPA assessment
Pacific Golden Plover	Conservation Concern – declining pop'n, requires TSPA assessment
Red-necked Stint	Conservation Concern – declining pop'n, requires TSPA assessment
Caspian Tern	Conservation Concern – very low numbers, requires TSPA assessment
Whimbrel	Conservation Concern – very low numbers, requires TSPA assessment
Great Knot	Conservation Concern – very low numbers, requires TSPA assessment
Terek Sandpiper	Conservation Concern – very low numbers, requires TSPA assessment
Grey-tailed Tattler	Conservation Concern – very low numbers, requires TSPA assessment
Banded Lapwing	Conservation Concern – low numbers, requires TSPA assessment
Black-fronted Dotterel	Conservation Concern – low numbers, requires TSPA assessment
Sooty Oystercatcher	Conservation Concern – low numbers, requires TSPA assessment
Grey Plover	Conservation Concern – low numbers, requires TSPA assessment
Lesser Sand Plover	Conservation Concern – low numbers, requires TSPA assessment
Pacific Gull	Requires Monitoring – small population size with threats occurring
Red Knot	Requires Monitoring – small population size
Sharp-tailed Sandpiper	Requires Monitoring – small population size
Common Greenshank	Requires Monitoring – small population size
Sanderling	Requires Monitoring – small population size
Bar-tailed Godwit	Requires Monitoring – small population size
Double-banded Plover	Requires Monitoring – small population size
Ruddy Turnstone	Requires Monitoring – national declines recorded

## PART 3: ASSESSMENT OF LONG TERM SURVEY SITES

### NORTHWEST TASMANIA

#### Boullanger Bay / Robbins Passage

Inferences as to the importance of this northwest region for migratory and breeding shorebirds was first reported by Wall (1955) but the significance of its importance was not confirmed until 1983 after surveys conducted by Ashby (Ashby 1987, 1990, 1991). This area is now recognised as a priority for migratory and many breeding species of shorebird.

Ashby estimated the area could accommodate over 100<sup>2</sup>km of tidal mudflat with many of the likely roost sites being difficult to access. He provides habitat descriptions for each of the survey sites and observations on the fluctuations of shorebird species. Annual shorebird counts at up to 10 sites in this region are produced annually in the Tasmanian Bird Report commencing in 1993 (Tas. Bird Report No. 22). The regular survey sites include Kangaroo I, Five Islets (Robbins Is) Wallaby Is, Montague Is, Bird Point (Robbins Is), Mosquito Inlet (Robbins Is), Shipwreck Point (Perkins Is), Seven Mile Beach (Anthony's west end), Seven Mile Beach (Anthony's east end) and Welcome River Inlet. Ashby's counts of waders at Mosquito Inlet (Robbins Is) during August 2000 indicates that this area is also a significant wintering site (800 Red-necked Stint, 50 Ruddy Turnstone, 500 Curlew Sandpiper, 120 Red Knot plus other resident species). Table 20 provides a summary of this information.

**Table 20 Maximum count of shorebird species, summer or winter, at Boullanger Bay / Robbins Passage 1990-1999.**

Species	1990	1991	1993	1994	1995	1996	1997	1998	1999	Max Count
Bar-tailed Godwit	4	133	13	1	284	350	37	61	500	500
Whimbrel	0	0	0	1	0	0	0	0	0	1
Eastern Curlew	292	243	191	160	200	0	183	186	200	292
Common Greenshank	42	25	0	40	100	50	27	75	110	110
Terek Sandpiper	0	0	0	0	0	0	0	2	2	2
Grey-tailed Tattler	9	0	0	180	0	0	6	5	6	180
Ruddy Turnstone	900	658	670	900	1850	1050	1920	2800	1762	2800
Great Knot	1	2	0	1	14	0	29	10	25	60*
Red Knot	1021	1505	18	403	1050	11	808	820	804	1505
Sanderling	0	0	0	20	24	12	5	0	28	28
Red-necked Stint	2100	2410	1000	3050	4150	2500	6659	4450	4045	6659
Sharp-tail Sandpiper	0	0	0	4	35	20	11	68	56	68
Curlew Sandpiper	2150	1520	912	1900	3400	550	2310	1870	452	3400
Pied Oystercatcher	484	727	270	465	524	252	1143	915	704	1143
Sooty Oystercatcher	505	373	195	120	120	50	334	400	440	505
Pacific Golden Plover	370	212	110	150	112	0	109	162	272	370
Grey Plover	0	137	0	100	240	21	12	95	200	240
Red-capped Plover	78	62	152	225	130	70	137	188	54	225
Double-banded Plover	28	6	19	10	7	2	150	1	552	786**
Lesser Sand Plover	4	0	0	2	9	5	8	27	11	27
Black-fronted Dotterel	0	0	0	0	0	0	0	0	0	0
Hooded Plover	7	18	15	15	14	7	15	64	73	73
Masked Lapwing	142	75	26	2	12	0	6	363	199	363
Banded Lapwing	0	0	0	0	0	0	13	0	0	13
<b>TOTAL</b>	<b>8137</b>	<b>8106</b>	<b>3591</b>	<b>7749</b>	<b>12275</b>	<b>4950</b>	<b>13922</b>	<b>12562</b>	<b>10495</b>	<b>19350</b>

\* recorded in 1987, \*\*recorded in 2000

## EAST TASMANIA

### Moulting Lagoon Game Reserve - Ramsar site

While Moulting Lagoon is well known as a waterfowl area particularly for Black Swan, annual counts show that a diversity of shorebirds also regularly occur there (Table 21). Moulting Lagoon is fed by the Apsley River at its northern point and the Swan River to the west and contains a variety of bays and inlets providing shallow water, saltmarsh, samphire flats, mudflats and including Pelican Rocks. Wakefield (1984) has discussed the habitats of the area in relation to their importance to shorebirds and provides maximum numbers for 16 shorebird species between 1978 – 1983. Wakefield highlights the importance of the area for Common Greenshank and the site meets Ramsar criteria for Pied Oystercatcher. In addition to those species in Table 20, Caspian Tern (0 – 73 birds), Crested Tern (0 – 125 birds), Pacific Gull (0 – 117 birds), Kelp Gull (0 – 1 bird) and Silver Gull (0 – 717 birds) have been recorded annually since 1992 (Blackhall 1998). Observations by Schokman (1991) during 1987-90 found similar species diversity and seasonality to that recorded more recently and annually by Blackhall (1998).

**Table 21 Maximum count of shorebird species, summer or winter, at Moulting Lagoon 1990-1999.**

Species	1990	1992	1993	1994	1995	1996	1997	1998	1999	Max Count
Bar-tailed Godwit	0	0	0	1	0	0	0	0	2	2
Whimbrel	1	2	0	6	0	0	0	0	0	6
Eastern Curlew	12	14	26	47	1	24	14	20	19	47
Common Greenshank	1	0	115	164	0	30	95	7	79	115
Terek Sandpiper	0	0	0	0	0	0	0	0	0	0
Grey-tailed Tattler	0	0	0	0	0	0	0	0	0	0
Ruddy Turnstone	0	0	0	0	0	0	0	0	0	0
Great Knot	0	0	0	0	0	0	0	0	0	0
Red Knot	0	0	0	0	0	0	0	0	0	0
Sanderling	0	0	0	0	0	0	0	0	0	0
Red-necked Stint	57	19	0	362	0	100	28	118	0	362
Sharp-tail Sandpiper	0	0	0	0	0	0	0	0	0	0
Curlew Sandpiper	0	0	0	0	0	0	10	20	0	20
Pied Oystercatcher	28	108	103	142	56	119	232	183	147	232
Sooty Oystercatcher	0	0	0	4	0	3	9	6	0	9
Pacific Golden Plover	35	0	0	0	0	0	0	0	0	35
Grey Plover	0	0	0	0	0	0	0	0	0	0
Red-capped Plover	12	401	18	27	13	255	150	22	14	401
Double-banded Plover	16	0	0	81	2	34	152	0	36	152
Lesser Sand Plover	0	0	0	0	0	0	0	0	0	0
Black-fronted Dotterel	0	0	0	9	9	0	1	1	4	9
Hooded Plover	0	0	0	0	0	0	0	0	0	0
Masked Lapwing	12	38	38	68	30	48	91	60	59	91
Banded Lapwing	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>174</b>	<b>582</b>	<b>300</b>	<b>911</b>	<b>111</b>	<b>613</b>	<b>782</b>	<b>437</b>	<b>360</b>	<b>1481</b>

1990 results from Schokman (1991), the remainder from Blackhall (1998)

## NORTHERN TASMANIA

### George Town/Tamar Estuary

Wall (1969) reported on the wading birds of the Tamar estuary including the parochial nature of species on the east side (George Town and Low Head) compared to western side (Kelso and Greens Beach). Wall reported up to 15 species using these areas including up to 200 Curlew Sandpiper and 100 Red-necked Stint. From 1979 onwards the mudflats below the George Town/Tamar River estuary were known to regularly support 10 species of summering migratory wader as well as small numbers of 9 species that regularly over-wintered (Henderson 1979, 1981). Commonest were Red-necked Stint, Curlew Sandpiper, Ruddy Turnstone and Eastern Curlew. The George Town site has long formed part of the annual summer

and winter wader counts with surveys stemming back to the 1970s (Tas. Bird Report 1977). The site lies in an estuary and much of it is rocky which provides high tide roosts and where the receding tide exposes scattered mudflats. This area suffered some degradation from the Iron Baron oil spill in 1995 (Cooper 1996). Recent counts of the George Town / Tamar Estuary region are shown in Table 22.

**Table 22 Maximum count of shorebird species, summer or winter, at George Town/Tamar Estuary 1992-1999.**

Species	1992	1993	1994	1995	1996	1997	1998	1999	Max Count
Bar-tailed Godwit	59	52	0	0	57	52	39	28	59
Whimbrel	0	8	0	1	0	9	0	7	9
Eastern Curlew	43	0	71	28	5	61	53	34	71
Common Greenshank	41	22	32	4	21	43	22	38	43
Terek Sandpiper	0	0	0	0	0	0	0	0	0
Grey-tailed Tattler	4	0	5	5	1	4	5	1	5
Ruddy Turnstone	137	59	89	46	33	71	65	68	137
Great Knot	0	0	0	0	0	0	0	0	0
Red Knot	6	0	43	4	0	1	0	0	43
Sanderling	0	0	0	0	0	0	0	0	0
Red-necked Stint	77	87	75	56	172	96	150	70	172
Sharp-tail Sandpiper	0	0	1	0	0	0	0	0	1
Curlew Sandpiper	118	249	137	54	76	104	103	82	249
Pied Oystercatcher	24	37	11	16	35	29	22	20	37
Sooty Oystercatcher	4	11	2	2	4	3	6	4	11
Pacific Golden Plover	10	2	8	4	3	3	3	4	10
Grey Plover	1	1	2	1	1	1	1	0	2
Red-capped Plover	0	0	0	15	4	8	16	46	46
Double-banded Plover	21	0	0	27	29	23	6	25	29
Lesser Sand Plover	0	0	0	0	0	0	0	0	0
Black-fronted Dotterel	0	0	0	0	0	0	0	0	0
Hooded Plover	0	0	0	0	0	0	0	0	0
Masked Lapwing	27	11	15	12	60	48	12	45	60
Banded Lapwing	0	18	0	0	0	0	0	0	18
<b>TOTAL</b>	<b>572</b>	<b>557</b>	<b>491</b>	<b>275</b>	<b>501</b>	<b>556</b>	<b>503</b>	<b>472</b>	<b>1002</b>

### **Moorland Point, Devonport**

Moorland Point near Wesley Vale, Devonport has been counted consistently up to several times per year by J. Hunter since 1985 (recent records provided in Table 23). The site contains rocky shelves, seaweed beds and mudflats exposed at low tide. This site meet Ramsar criteria for Ruddy Turnstone and is a good site for shorebird diversity. Additional species such as Caspian Tern (occasionally 1 bird), Crested Tern (20 birds in 1993) and Fairy Tern (regularly 3 – 4 birds) also occur at this site. J. Hunter reports that the site at times is experiences disturbance especially from people and motor bikes.

## **NORTHEAST TASMANIA**

### **Cape Portland and Little Musselroe**

Historical accounts of the significance of this region for resident and migratory shorebirds has been provided by Thomas and Wall (1966) and Wall and Thomas (1967). They remark on the high diversity of bird species linked with the diversity of native and exotic habitats (wetlands, pasture, beach and dunes, coastal heath, swamps, lagoons, marshes, salt pans and tidal mudflats) in this area including nearby rocky reefs and islands. The area has contained 16 species of shorebirds and a probable first sighting of Ruff.

Cape Portland / Little Musselroe have long been a regular monitoring site by R. Cooper since the mid 1970s and he has published widely on the importance of the area (1981, 1982, *et al.* 1996) including management prescriptions for Government. The area is particularly significant for its high diversity of breeding and migratory shorebirds. Fairy Tern have bred at Little Musselroe Bay and the area contains annually high numbers of Red-necked Stint, Pacific Golden Plover and Ruddy Turnstone. The area has

consistent high numbers of Double-banded Plover and, as reflected in the seasonal counts, often has higher numbers of some species in the winter (e.g. Hooded Plover, Red-capped Plover, Sooty Oystercatchers) indicating that it is also a popular winter flocking site. Long term analysis of trends in abundance suggests there has been a steady decline in overall bird numbers in this area over the last 15 years (Cooper *et al.* 1996). This site meets Ramsar criteria for double-banded Plover and Sooty Oystercatcher. Counts for the last decade are given in Table 24.

**Table 23 Maximum count of shorebird species, summer or winter, at Moorland Point 1991-1999.**

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	Max Count
Bar-tailed Godwit	0	0	0	0	0	0	0	0	0	0
Whimbrel	0	0	0	0	0	0	0	0	0	0
Eastern Curlew	0	0	0	0	0	0	1	0	0	1
Common Greenshank	0	0	0	0	0	0	0	0	0	0
Terek Sandpiper	0	0	0	0	0	0	0	0	0	0
Grey-tailed Tattler	1	0	0	1	0	2	2	2	2	2
Ruddy Turnstone	200	300	300	300	300	300	300	300	300	300
Great Knot	0	0	0	0	0	0	0	0	0	0
Red Knot	0	0	0	0	0	0	0	0	0	0
Sanderling	0	0	0	0	0	0	0	0	0	0
Red-necked Stint	0	0	0	0	8	3	0	7	2	8
Sharp-tail Sandpiper	0	0	0	2	0	0	0	0	0	2
Curlew Sandpiper	0	0	0	1	0	0	0	0	0	1
Pied Oystercatcher	0	P	2	2	P	2	18	2	15	18
Sooty Oystercatcher	0	0	5	8	0	12	12	6	16	16
Pacific Golden Plover	6	7	3	20	6	8	9	6	10	20
Grey Plover	0	0	0	0	0	0	0	0	0	0
Red-capped Plover	3	4	12	11	8	15	6	20	10	20
Double-banded Plover	0	0	24	50	15	40	50	50	50	50
Lesser Sand Plover	0	0	0	0	0	0	0	0	0	0
Black-fronted Dotterel	0	0	0	0	0	0	0	0	0	0
Hooded Plover	0	0	1	0	0	0	0	0	0	1
Masked Lapwing	0	0	P	0	0	0	P	0	P	P
Banded Lapwing	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>210</b>	<b>312</b>	<b>348</b>	<b>395</b>	<b>338</b>	<b>382</b>	<b>399</b>	<b>393</b>	<b>406</b>	<b>440</b>

P = Present (counted as a min of 1 individual)

## SOUTHEAST TASMANIA

### Derwent Region

The annual summer and winter wader counts for Tasmania's Derwent region (Derwent estuary and Pittwater) are the longest running (spanning ~ 30 yrs) and most consecutive of all surveyed regions. The Derwent region consists of 11 discrete but close proximity locations: Lauderdale, Clear Lagoon, Mortimer Bay, Pipeclay Lagoon, Calvert's Lagoon, South Arm Neck, Barilla Bay, Iron Creek-Carlton River, Five Mile Beach, Seven Mile Beach, Orierton / Sorell. Most of these sites have been reviewed individually for their habitat, species diversity and the species changes experienced over the long survey period (BOAT 1982, Patterson 1982, Wakefield 1982, Wall 1982, Park 1983, Newman 1986, 1989, Newman & Patterson 1986). The summer and winter counts are analysed for the last ten years and shown in Table 25. For several species especially the Sooty Oystercatcher, Red-capped Plover and Double-banded Plover the winter counts are often the highest.

### Marion Bay and Blackman Bay

Marion and Blackman Bay counts form part of the summer and winter counts totalled for the Southeast region. Marion Bay includes the causeway area entering Marion Bay Beach. Counts gained at these sites since 1992 are shown in Table 26.



**Table 24 Maximum count of shorebird species, summer or winter, at Cape Portland / Little Musselroe 1991-1999.**

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	Max Count
Bar-tailed Godwit	3	104	0	0	0	0	0	0	0	104
Whimbrel	1	3	0	0	0	0	0	0	0	3
Eastern Curlew	2	0	2	2	0	0	0	1	2	2
Common Greenshank	0	1	0	0	0	0	0	0	0	1
Terek Sandpiper	0	0	0	0	0	0	0	0	0	0
Grey-tailed Tattler	4	0	5	5	0	2	3	2	3	5
Ruddy Turnstone	62	123	33	120	101	174	49	142	96	174
Great Knot	0	0	0	0	0	0	0	0	0	0
Red Knot	0	2	0	0	0	0	0	0	0	12
Sanderling	0	0	0	0	0	0	0	0	0	0
Red-necked Stint	844	1899	552	281	485	1262	565	1071	428	1899
Sharp-tail Sandpiper	2	51	33	12	36	0	9	1	0	51
Curlew Sandpiper	13	683	37	23	50	51	10	55	2	683
Pied Oystercatcher	44	30	34	31	31	51	40	22	29	51
Sooty Oystercatcher	35	34	29	21	40	29	26	35	32	40
Pacific Golden Plover	120	75	86	82	12	68	71	67	143	143
Grey Plover	0	2	0	0	0	0	1	0	0	2
Red-capped Plover	145	101	119	128	142	177	118	135	114	177
Double-banded Plover	184	350	127	139	220	335	213	153	410	350
Lesser Sand Plover	1	9	1	9	2	2	2	3	3	9
Black-fronted Dotterel	1	0	1	0	1	0	0	5	0	5
Hooded Plover	35	26	20	33	9	37	40	19	9	40
Masked Lapwing	74	24	65	100	82	174	97	46	114	174
Banded Lapwing	0	0	0	31	0	13	52	16	23	52
<b>TOTAL</b>	<b>1570</b>	<b>3517</b>	<b>1144</b>	<b>1017</b>	<b>1211</b>	<b>2375</b>	<b>1296</b>	<b>1773</b>	<b>1408</b>	<b>3977</b>

**Table 25 Maximum count of shorebird species, summer or winter, in the Derwent region 1991-99.**

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	Max Count
Bar-tailed Godwit	83	104	45	83	20	84	53	57	86	104
Whimbrel	1	3	4	6	5	5	4	6	2	6
Eastern Curlew	106	118	117	117	90	110	90	85	89	118
Common Greenshank	64	81	67	28	46	44	73	74	25	74
Terek Sandpiper	0	0	0	0	0	0	0	0	0	0
Grey-tailed Tattler	0	0	3	0	0	0	0	0	0	3
Ruddy Turnstone	2	0	0	1	0	0	0	0	0	2
Great Knot	0	0	0	0	0	0	0	0	0	0
Red Knot	3	22	0	4	3	1	0	0	5	22
Sanderling	0	0	0	0	0	0	0	0	0	0
Red-necked Stint	1263	1767	1163	1470	1068	2127	1333	1451	1096	2127
Sharp-tail Sandpiper	16	69	0	0	1	0	8	1	0	69
Curlew Sandpiper	455	1162	640	1000	494	404	320	800	253	1162
Pied Oystercatcher	626	554	522	689	699	680	636	789	894	894
Sooty Oystercatcher	42	48	40	52	40	15	68	65	53	68
Pacific Golden Plover	206	97	51	69	19	0	49	25	45	206
Grey Plover	0	3	2	0	1	0	0	0	0	3
Red-capped Plover	170	276	251	207	255	269	227	285	221	285
Double-banded Plover	338	340	358	384	253	297	330	190	294	384
Lesser Sand Plover	0	0	0	0	0	0	0	0	0	0
Black-fronted Dotterel	2	1	0	7	6	12	38	6	6	38
Hooded Plover	4	10	12	4	7	6	5	4	33	33
Masked Lapwing	521	592	460	344	463	596	514	180	943	943
Banded Lapwing	0	0	0	0	0	1	2	0	0	2
<b>TOTAL</b>	<b>3902</b>	<b>5247</b>	<b>3735</b>	<b>4465</b>	<b>3470</b>	<b>4651</b>	<b>3750</b>	<b>4018</b>	<b>4045</b>	<b>6543</b>

**Table 26 Maximum count of shorebird species, summer or winter, in Marion / Blackmans Bay 1992-1999.**

Species	1992	1993	1994	1995	1996	1997	1998	1999	Max Count
Bar-tailed Godwit	1	0	0	0	3	3	3	5	5
Whimbrel	0	0	0	0	0	0	2	1	2
Eastern Curlew	0	2	1	0	0	2	0	0	2
Common Greenshank	1	0	0	2	2	0	1	3	3
Terek Sandpiper	0	0	0	0	0	0	0	0	0
Grey-tailed Tattler	0	0	0	0	0	0	0	0	0
Ruddy Turnstone	0	0	0	0	0	0	0	0	0
Great Knot	0	0	0	0	0	0	0	0	0
Red Knot	0	0	0	0	0	0	0	0	0
Sanderling	0	0	0	0	0	0	0	0	0
Red-necked Stint	386	134	21	55	121	450	75	600	600
Sharp-tail Sandpiper	0	0	0	0	0	0	0	0	0
Curlew Sandpiper	0	0	0	0	0	0	1	0	1
Pied Oystercatcher	117	149	29	108	121	85	60	131	149
Sooty Oystercatcher	2	8	2	2	8	0	0	3	8
Pacific Golden Plover	0	0	0	20	0	0	0	0	20
Grey Plover	0	0	0	0	0	0	0	0	0
Red-capped Plover	25	76	40	68	72	105	46	95	105
Double-banded Plover	49	65	61	5	55	15	60	70	70
Lesser Sand Plover	0	0	0	0	0	0	0	0	0
Black-fronted Dotterel	0	1	0	0	0	0	0	0	1
Hooded Plover	28	22	35	5	24	10	19	8	35
Masked Lapwing	22	21	79	87	51	2	0	125	125
Banded Lapwing	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>631</b>	<b>478</b>	<b>268</b>	<b>352</b>	<b>457</b>	<b>672</b>	<b>267</b>	<b>1041</b>	<b>1126</b>

#### COMPARISON BETWEEN LONG TERM SURVEY SITES

Table 27 shows the comparison in maximum number of each species sighted over the last decade between Tasmania's 7 long-term survey sites. Most of this information has been obtained from the relevant issues of Tas. Bird Report which demonstrates the importance of this journal as an invaluable reference for monitoring change.

It can be seen from Table 27 that the Boullanger Bay / Robbins Passage (~ 10 sites) is the single most important region for migratory shorebirds in Tasmania. It also holds a significant number of the State's breeding shorebirds and has the highest shorebird diversity. It meets Ramsar criteria for 8 species (Eastern Curlew, Ruddy Turnstone, Red-necked Stint, Curlew Sandpiper, Pied Oystercatcher, Sooty Oystercatcher, Double-banded Plover and Hooded Plover) and is the stronghold for a further 9 species in Tasmania (Grey Plover, Great Knot, Red Knot, Sharp-tailed Sandpiper, Sanderling, Grey-tailed Tattler, Bar-tailed Godwit, Lesser Sand Plover, Pacific Golden Plover). It also has the highest numbers recorded for 17 of the 24 shorebird species regularly surveyed. The eligibility of the northwest region as a Ramsar site has been covered in two reports (Dunn 2000, 2001), however, this area is yet to gain the wide community support necessary for its listing as a site of international importance.

The Derwent region (which comprises ~11 sites) meets Ramsar criteria for three species (Pied Oystercatcher, Sooty Oystercatcher, Double-banded Plover), unfortunately several of the sites in this region are now degraded, e.g. Mortimer Bay. Cape Portland / Little Musselroe meets Ramsar criteria for 2 species (Sooty Oystercatcher, Double-banded Plover) and Moulting Lagoon and Marion Bay meet Ramsar criteria for 1 species each (Pied Oystercatcher). Moulting Lagoon is already listed as a Ramsar site in Tasmania. Moorland Point meets Ramsar criteria for Ruddy Turnstone and is also a significant site for shorebird diversity.

**Table 27 Comparison of Maximum Counts between Survey Sites between 1990-1999.**

Species	Moorland Point	Marion Bay	Moulting Lagoon	Cape Port L Mussel	George Town	Derwent Region	Boullg/Rob Pass	Ramsar 1% Criteria
Bar-tailed Godwit	0	5	2	104	59	104	500	1200
Whimbrel	0	2	6	3	9	6	1	
Eastern Curlew	1	2	47	2	71	118	292#	210
Common Greenshank	0	3	115	1	43	74	110	400
Terek Sandpiper	0	0	0	0	0	0	2	
Grey-tailed Tattler	2	0	0	5	5	3	180	250
Ruddy Turnstone	300#	0	0	174	137	2	2800#	250
Great Knot	0	0	0	0	0	0	60	
Red Knot	0	0	0	12	43	22	1505	2000
Sanderling	0	0	0	0	0	0	28	100
Red-necked Stint	8	600	362	1899	172	2127	6659#	4700
Sharp-tail Sandpiper	2	0	0	51	1	69	68	
Curlew Sandpiper	1	1	20	683	249	1162	3400#	2500
Pied Oystercatcher	18	149#	232#	51	37	894#	1143#	110
Sooty Oystercatcher	16	8	9	40#	11	68#	505#	40
Pacific Golden Plover	20	20	35	143	10	206	370	1000
Grey Plover	0	0	0	2	2	3	240	250
Red-capped Plover	20	105	401	177	46	285	225	
Double-banded Plover	50	70	152	350#	29	384#	786#	300
Lesser Sand Plover	0	0	0	9	0	0	27	100
Black-fronted Dotterel	0	1	9	5	0	38	0	
Hooded Plover	1	35	0	40	0	33	73#	50
Masked Lapwing	P	125	91	174	60	943	363	
Banded Lapwing	0	0	0	52	18	2	13	
<b>TOTAL</b>	<b>440</b>	<b>1126</b>	<b>1481</b>	<b>3977</b>	<b>1002</b>	<b>6543</b>	<b>19350</b>	<b>-</b>

# = meets Ramsar 1% criteria for species population

#### OFFSHORE ISLANDS

W. Wakefield commenced island survey work in 1975 which he continues to the present. He classified islands into four categories according to their use by birds (1) breeding (2) feeding (3) roosting (4) casual visitors and recorded variation in species related to distance from the mainland and availability of shelter (Wakefield 1986). A summary of the shorebird species breeding on 67 near offshore islands has been published (Table 28, Wakefield & Wakefield 1998) indicating the importance of these areas.

**Table 28 Island Breeding Sites for Some Shorebird Species in Tasmania (from Wakefield & Wakefield 1998)**

Island	Pied O	Sooty O	Silver G	Pac G	Kelp G	Casp T	Crest T	W-f Tern	Fairy T
Arch Island		B	B	B	B	B			
Actaeon Island		B	B	B			B		
Baynes Island		B	B	B		B	B		
Big Betsy Island					B				
Big Chalky Island	B	B	B	B		B			
Big Spectacle Is.	B	B	B	B	B	B			
Billy Goat Reef			B				B	B	
Charity Island		B	B	B	B				
Courts Island					B				
Courts Rock					B				
Curlew Is.	B	B	B	B	B	B	B		
Dart Island									
Diamond Island		B?							

Island	Pied O	Sooty O	Silver G	Pac G	Kelp G	Casp T	Crest T	W-f Tern	Fairy T
Double Island					B				
Faith Island									
Foster Island		B		B					
Fulham Island		B		B	B				
Garden Island	B								
Governor Island	B	B	B		B		B		
Green Island	B	B	B	B	B	B	B		
Hog Island		B	B	B	B	B			
Hope Island									
Howie Island	B	B	B	B		B			
Huon Island									
Iron Pot Island	B	B	B	B	B	B	B		
Iron Pot Reef			B	B	B				
Is. du Nord									
Is. of Caves	B	B	B	B	B	B	B		
Isabella Island		B		B					
Isle de Phoc									
Kelly Islands			B		B				
King George Island									
Lachlan Island		B	B	B	B	B	B		
Little Betsy Island			B						
Little Chalky Island	B	B	B	B		B	B		B
Little Southport Is.		B	B	B		B			
Little Spectacle Is.	B		B		B		B		
Little Waterhouse Is.		B?	B	B		B?			
Mackrel Islets									
Middle Spectacle Is.			B		B				
Mile Island		B		B		B		B	
Neds Reef									
North Pascoe Island		B		B					
North Tin Pot Pens.		B	B	B	B				
Paddys Island		B	B	B	B	B	B		
Partridge Island									
Picnic Island									
Baren Is, Pittwater	B		B	B	B	B	B		
Preservation Island	B	B		B					
Refuge Island		B?							
Roydon Island	B	B		B					
Sea Gull Rock			B	B			B		
Slopen Island									
Smooth Island				B					
Snake Island	B								
South Port Island									
St.Helens Island		B		B		B			
Sterile Island									
Suzie Island, Orielton Lag			B		B		B		
Swan Island	B	B	B	B			B		
The Nuggets		B?	B	B	B	B			

Island	Pied O	Sooty O	Silver G	Pac G	Kelp G	Casp T	Crest T	W-f Tern	Fairy T
The Pineapples		B?							
Tin Kettle Island	B	B							
Visscher Island		B	B	B	B	B			
Wedge Island									
Woody Is., Pittwater	B?				B?				

With the recent release of similar long-term seabird island inventory by Brothers *et al.* (2001), a closer analysis of shorebird species and breeding islands should be compiled. Information is lacking for the importance of islands such as those in the Hunter group, Clarke Island, Cape Barren Island and long term surveys from King Island and Flinders Island are also needed. While a large numbers of islands were surveyed in the course of this project it is difficult to ascertain priority sites due to lack of continuous monitoring. Islands require specific conservation analysis, however, this has not been possible in this report.

### PRIORITY SITES FOR BEACH NESTING AND MIGRATORY SHOREBIRDS IN TASMANIA

By combining information collected during this survey and from the literature, Table 29 provides a list of priority sites for beach nesting and migratory shorebirds in Tasmania. It is also necessary that sites are identified to ensure bioregional representation is provided for the Hooded Plover, which at present is thinly scattered on beaches around most of the Tasmanian coastline.

**Table 29 Priority Sites for Beach Nesting and Migratory Shorebirds in Tasmania.**

Site	Shorebird Value
Boullanger Bay / Robbins Passage which includes Bird Point, Five Islets, Mosquito Inlet (Robbins Island), Shipwreck Point (Perkins Is), Kangaroo Island, Montague Is, Wallaby Is, Seven Mile Beach (Anthony's Beach – east and west end)	Very high species diversity – stronghold for 17 species, priority site for resident species, priority site for Little Tern, Fairy Tern, long term monitoring site
Cape Portland / Little Musselroe	Very high species diversity – priority site for resident species, stronghold for Double-banded Plover, Sooty Oystercatcher, Little Tern, long term monitoring site
George Town / Tamar Estuary	Very high species diversity, good site for Eastern Curlew, priority site for resident species, long-term monitoring site
Derwent region including Lauderdale, Clear Lagoon, Mortimer Bay, Pipeclay Lagoon, Calvert's Lagoon, South Arm Neck, Barilla Bay, Iron Creek, Carlton River, Five Mile Beach, Seven Mile Beach, Orielton / Sorell, Waterview Sanctuary	Very high species diversity, priority site for resident species, long-term monitoring site, priority site for Eastern Curlew, Whimbrel
Policeman's Point (includes The Gardens & the mouth of Anson's Bay)	Very high species diversity, priority site for resident species
Patriarch Inlet (Flinders Is)	Very high species diversity, priority site for resident species
Little Boomer	Very high species diversity, priority site for resident species
Steels Beach	High species diversity, priority site for resident species, priority site for breeding species, priority breeding site for Little Tern
Beaumaris Beach	High species diversity, priority site for resident species, priority breeding site for Little Tern

Lisdillon	High species diversity, priority site for resident species, priority site for breeding species including Little Tern, Fairy Tern
Great Musselroe	High species diversity
Ocean Beach (inc. mouth of Henty)	High species diversity, priority site for resident species, priority site for Sanderling
Orford Spit	High species diversity, priority site for resident species, priority site for breeding species, significant site for Fairy Tern
Scamander Spit & Barway & river mouth	Priority site for breeding species, priority site for Little Tern
Cameron Inlet / Logan's Lagoon (Flinders Is)	High species diversity, priority site for resident species, significant site for Fairy Tern
Cowper Point (King Is)	High species diversity, priority site for resident species, priority site for Little Tern
Moulting Lagoon	High species diversity, priority site for resident species
Marion Beach including Marion Bay causeway	High species diversity, priority site for resident species
Adelaide Bay (Flinders Is)	High species diversity
Little Swanport (lagoon mouth)	High species diversity, priority site for resident species
Meredith River (river mouth)	High species diversity, priority site for resident species
Moorland Point	Priority site for migratory species, significant site for Ruddy Turnstone
Lades Beach	Priority site for species diversity, significant site for many Tern species, monitoring site
Maurouard Beach (Peron Dunes)	Priority site for Fairy Tern and species diversity
Forwards & Picnic Beach	Priority site for resident species
Dianas Beach inc. Basin	Priority site for resident species, past site for Little Tern
Friendly Beaches	Priority site for resident species, priority site for Little Tern
Bruny Island - Great Bay, The Neck, Adventure Bay, Cloudy Bay, Lighthouse Bay	Priority site for resident species
Sandspit, Rheban	Priority site for resident species
Australia Point	Priority site for resident species
Bakers Beach	Priority site for resident species
Below Pollys Bay	Priority site for resident species
Horseshoe Bank	Priority site for resident species
Nye Bay	Priority site for resident species
Pebbly Bay	Priority site for resident species
Pirates Bay	Priority site for resident species
Baynes Island	Priority site for breeding species including Fairy Tern
Lachlan Island	Priority site for breeding species
Saltworks Beach	Priority site for breeding species
Green Island	Priority site for breeding species
Barren Island	Priority site for breeding species
Macleans Bay, Spike Bay (Clarke Is)	Priority site for Little Tern
Bioregional representation of beach nesting sites	Protection for the Hooded Plover

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## APPENDIX A = Information on sites surveyed in this project

(grid reference is for site locality only but does not refer to position of shorebirds at the site)

Beach Name	1: 25000 TasMap	Northing	Easting	Region	Tot. Beach Length km	No of Surveys	Length Surveyed	Hours Surveyed	Species Diversity
Abbotsbury Beach	ANSONS BAY	540	086	NE	3.5	1	0.5	0.66	3
Adelaide Bay (Flinders Is)	FISHER	475	025	Islands-NE	10.0	4	0.4	3.0	10
Adventure Bay Beach (Bruny Is)	FLUTED CAPE	981	278	Islands-S	3.0	9	25.0	9.75	8
Arch Rock (Island)	DOVER	070	144	Islands-S	0.1	2	0.2	1.0	2
Arthur Beach	SUNDOWN	465	045	NW	6.5	6	19.0	5.8	9
Arthur River (river mouth)	BLUFF	527	030	NW	3.0	1	2.0	0.66	8
Austins Ferry Yacht	RICHMOND	632	206	SE	0.2	1	0.1	0.5	1
Australia Point	BLUFF	533	015	NW	4.0	2	6.5	2.5	8
Badger Beach	GREENS BEACH	528	758	N	5.0	3	15.0	6.25	6
Bagot Point (Nine Mile Beach)	COLES BAY	383	018	E	15.0	1	0.1	0.25	1
Bakers Beach	PORT SORELL	445	640	N	7.5	9	14.2	9.6	9
Barilla Bay	HOBART	588	395	SE	3.0	6	8.3	6.25	12
Barren Island	CARLTON	594	433	Islands-SE	0.1	1	0.1	0.5	5
Bay of Fires	EDDYSTONE	606	124	NE	3.0	1	2.0	1.5	8
Baynes Island	LYME REGIS	861	790	Islands-NE	1.0	1	0.1	0.5	5
Beaumaris Beach	BEAUMARIS	144	069	NE	4.0	21	32.4	17.85	12
Beedham Bay	RICHMOND	597	206	SE	0.5	3	0.3	1.5	2
Beerbarrel Beach	ST HELENS	286	133	NE	0.3	1	0.1	0.1	7
Bell Buoy	LOW HEAD	567	858	N	2.0	1	2.0	1.0	3
Below Pollys Bay	TEMA	355	066	NW	6.0	2	2.0	2.0	9
Betsey Island	BLACKMANS BAY	330	392	Islands-S	5.0	2	0.2	1.0	2
Big Green Island	WHITEMARK	510	830	Islands-NE	1.0	1	0.1	0.5	4
Big Spectacle Island	CARLTON	535	490	Islands-SE	1.0	5	0.5	2.5	6
Binalong Bay	BINALONG	328	085	NE	1.4	16	21.0	9.86	4
Bird Point (Robbins Is)	ROBBINS	987	232	Islands-NW	0.2	1	0.2	8.0	20
Black Jack Rocks	BLACKMANS BAY	347	393	Islands-S	0.1	3	0.3	1.5	3
Black River Beach	SMITHTON	789	570	NW	6.0	2	6.5	6.5	6

Blanche Point (St Helens area)	ST HELENS	294	115	NE	1.0	6	6.0	2.91	7
Bloodstone Beach (Maria Is)	RIEDLE	775	850	Islands-E	1.7	1	1.7	0.5	3
Bluff Point	STUDLAND	856	050	NW	0.3	1	0.1	0.1	3
Bluff Road (Flinders Is)	LEVENTHORPE	606	856	Islands-NE	1.0	1	0.1	0.2	4
Boat Harbour	WYNARD	660	850	NW	1.5	1	0.1	0.45	4
Boobyalla Reserve	LYME REGIS	854	802	NE	2.0	1	1.0	0.75	2
Boomer Bay	DUNALLEY	535	680	SE	2.0	2	0.2	1.0	6
Bowen Bridge	HOBART	595	252	SE	0.8	1	0.1	0.5	2
Break Yoke Beach	THE GARDENS	465	065	NE	4.0	4	16.5	5.75	9
Bridport	BRIDPORT	606	333	NE	1.0	2	1.1	1.0	2
Bryan's Beach	GRAHAM	206	060	E	1.0	1	1.0	0.5	2
Buttons Beach	ULVERSTONE	437	315	N	0.7	1	0.7	5.0	3
Calvert's Beach	BLACKMANS BAY	363	395	S	3.0	1	3.0	2.5	4
Calvert's Lagoon	BLACKMANS BAY	399	368	S	3.0	10	11.6	9.5	9
Cameron Bay	RICHMOND	601	210	SE	0.5	3	0.3	1.5	3
Cameron Inlet (Flinders Is)	LOGAN	596	078	Islands-NE	1.0	3	0.3	1.5	12
Cape Deliverance	BLACKMANS BAY	338	330	S	0.5	1	0.1	0.5	2
Cape Portland	LYME REGIS	865	815	NE	5.0	6	9.0	15.3	22
Charlotte Cove	DOVER	090	117	S	0.5	1	0.1	0.5	1
City of Melbourne Bay (King Is)	GRASSY	672	536	Islands-NW	0.4	1	0.4	0.5	5
Clear Lagoon	CREMORNE	462	410	SE	1.0	3	3.0	2.0	2
Cloudy Bay (Bruny Is)	CLOUDY	885	204	Islands-S	2.0	1	2.0	1.0	2
Cloudy Bay Beach (Bruny Is)	CLOUDY	884	206	Islands-S	8.0	5	19.5	7.75	8
Coffin Bay	BREAKSEA	080	166	SW	3.0	1	0.8	0.75	2
Coningham Beach	BLACKMANS BAY	303	228	S	1.0	2	0.2	1.0	5
Connelly's Beach	CARLTON	510	592	SE	1.0	1	1.0	0.75	1
Cornelian Bay	HOBART	550	262	SE	1.0	2	0.2	1.0	1
Coswell & Piermont Beach	SWANSEA	325	886	E	1.2	1	1.2	1.25	3
Cowper Point (King Is)	SEA ELEPHANT	880	540	Islands-NW	3.0	1	3.0	2.5	12
Cox Bight	COX	838	368	SW	4.0	3	9.0	5.0	6
Cremorne Beach	CREMORNE	435	435	SE	1.0	2	0.2	1.0	4

Crescent Bay	RAOUL	170	704	SE	1.0	1	1.0	0.2	6
Curlew Island	PARTRIDGE	916	139	Islands-S	0.1	1	0.1	0.5	6
Cygnets	CYGNET	215	059	S	1.0	2	0.2	1.0	3
Darlington Beach (Maria Is)	DARLINGTON	850	871	Islands-E	1.0	2	1.4	1.5	3
Deal Island (no site given)	FLINDERS	345	254	Islands-NE	1.0	1	0.1	0.5	3
Denison Canal	DUNALLEY	508	657	SE	1.0	1	0.1	0.5	2
Dennes Point (Bruny Is)	BLACKMANS BAY	318	284	Islands-S	0.3	1	0.1	0.5	4
Diana's Basin	BEAUMAUROS	185	072	NE	3.0	1	0.1	0.5	3
Diana's Beach	BEAUMAUROS	192	083	NE	3.5	5	12.7	7.6	10
Dora Point	ST HELENS	293	108	NE	0.2	1	0.2	0.5	2
Double Rock	DUNALLEY	529	795	SE	0.1	2	0.2	1.0	2
Dowsing's Point	HOBART	586	249	SE	0.5	2	0.2	1.0	3
Dru Point	BLACKMANS BAY	360	227	S	0.5	3	0.3	1.5	3
Duck Island	TANNER	937	766	Islands-NE	0.3	1	0.1	0.5	1
Dunalley	MURDUNNA	495	667	SE	3.0	1	2.0	1.0	2
Dunckel's Beach	ADVENTURE BAY	009	259	S	0.5	6	3.0	3.8	5
Eagle Point Beach	HARFORD	390	648	N	1.0	1	0.8	1.0	3
East Cove (Deal Is, at jetty site)	no map available	-	-	Islands-NE	0.2	9	1.8	5.78	5
East Inlet	STANLEY	810	548	NW	0.1	1	0.1	0.5	4
Elwick Bay	HOBART	583	225	SE	1.5	1	0.1	0.5	2
Fisher Island	FISHER	471	052	Islands-NE	0.3	2	0.2	1.0	2
Fisher Reef	FISHER	482	052	Islands-NE	1.0	3	0.3	1.5	8
Five Islets (Robbins Is)	ROBBINS	967	221	Islands-NW	1.0	1	2.0	8.0	9
Five Mile Beach	CARLTON	582	450	SE	9.0	2	0.2	1.0	6
Fortescue Bay	HIPPOLYTE	228	778	SE	0.8	5	4.0	7.66	6
Forwards & Picnic Beach	ROCKY CAPE	743	710	NW	5.0	11	55.0	33.85	10
Foster Islands (east islet)	LYME REGIS	914	823	Islands-NE	1.0	1	0.1	0.5	4
Foster Islands (west islet)	LYME REGIS	911	820	Islands-NE	0.5	1	0.1	0.5	5
Four Mile Beach (Maria Is)	DARLINGTON	807	848	Islands-E	0.4	1	0.4	0.5	3
Freers Beach	PORT SORELL	437	615	N	1.0	1	0.1	0.5	3
Friendly Beaches	LODI / FRENDRY	490	062	E	11.0	4	3.5	3.25	10



Frying Pan	HOBART	597	212	SE	1.0	1	0.1	0.5	1
Fulham Point	DUNALLEY	490	624	SE	0.2	1	0.1	0.5	6
Garden Cove (Deal Is, N of museum)	no map available	-	-	Islands-NE	0.4	11	4.4	9.0	7
Garden Island Creek	LYMINGTON	122	122	S	1.0	1	0.1	0.5	1
Gardens Lagoon Beach	THE GARDENS	440	066	NE	3.0	7	12.6	7.78	7
Gellibrand Point	TAROONA	430	333	SE	0.1	1	0.1	0.5	5
Geological Feature	RICHMOND	624	237	SE	0.1	2	0.2	1.0	1
George Town Reserve	LOW HEAD	508	842	N	2.0	5	9.0	5.75	18
Georges Bay	ST HELENS	255	085	NE	1.0	1	0.1	0.5	7
Goat Bluff	BLACKMANS BAY	356	391	S	0.5	3	0.3	1.5	3
Gorringes Beach	TAROONA	412	388	SE	2.8	1	2.75	2.0	1
Governor Island	BICHENO	633	087	Islands-E	1.0	2	0.2	1.0	6
Granite Beach	PRION	730	740	SW	1.4	2	2.8	1.16	2
Granton	NEW NORFOLK	668	183	SE	1.0	2	0.2	1.0	2
Great Bay (Bruny Is)	GREAT BAY	179	313	Islands-S	4.0	2	7.0	3.6	10
Green Island	GREAT BAY	170	234	Islands-S	0.1	6	0.6	3.0	7
Green Point	RICHMOND	659	208	SE	0.5	2	0.2	1.0	4
Green Point Beach	MARRAWAH	685	045	NW	5.0	5	5.0	4.66	8
Grindstone Bay	GRINDSTONE	008	818	E	0.5	11	5.5	6.35	8
Gun Street	NEW NORFOLK	677	188	SE	0.5	1	0.1	0.5	1
Gunters Bay (Flinders Is)	FISHER	475	033	Islands-NE	1.0	1	0.1	0.5	4
Halfmoon Bay	BLACKMANS BAY	368	333	S	2.0	1	0.1	0.5	4
Hazard Bay	ORDNANCE	290	080	NW	2.0	1	2.0	1.0	5
Hazards Beach	GRAHAM	292	060	E	3.0	1	2.0	1.0	3
High Yellow Bluff	MURDUNNA	475	812	SE	4.0	1	0.1	0.5	1
Hog Island	CREMORNE	451	534	Islands-SE	0.1	4	0.4	2.0	6
Hope Beach	BLACKMANS BAY	343	346	S	5.0	1	1.5	0.75	3
Hopground Beach (Maria Is)	DARLINGTON	840	865	Islands-E	0.5	1	0.5	0.25	0
Horseshoe Bank	ST HELENS	283	104	NE	1.0	7	2.0	7.25	9
Howie Island	MONTAGU	886	291	Islands-NW	1.0	1	0.1	0.5	2
Humper Bluff	MURDUNNA	505	802	SE	2.0	1	0.1	0.5	1

Iron Creek	SORELL	609	482	SE	2.0	2	4.0	2.0	5
Iron Pot	BLACKMANS BAY	323	337	Islands-S	0.2	1	0.1	0.5	7
Isle of Caves	CREMORNE	490	528	Islands-SE	0.2	6	0.6	3.0	7
Jordan River (river mouth)	RICHMOND	672	208	SE	2.0	3	0.3	1.5	1
Kangaroo Bay Beach (Clarke Is)	PASSAGE	156	025	Islands-NE	1.8	1	1.8	2.5	7
Kangaroo Island	GRIM	925	166	Islands-NW	2.0	1	2.0	1.0	8
Kelly Islands	DUNALLEY	516	795	Islands-SE	0.2	2	0.2	1.0	3
Kettering	CYGNET	246	202	S	1.0	1	0.1	0.5	1
Killecrankie Bay (Flinders Is)	PALANA	900	711	Islands-NE	3.5	1	0.1	0.5	3
Kirwans Beach	ST HELENS	230	050	NE	2.0	6	12.0	1.66	4
Koomela Bay	HOBART	558	278	SE	0.5	1	0.1	0.5	1
Lachlan Island	RIEDLE	781	800	Islands-E	0.1	1	0.1	0.5	5
Lady Barron (Flinders Is)	FISHER	475	054	Islands-NE	1.0	1	0.1	0.5	3
Lagoon Bay	DUNALLEY	517	782	SE	0.8	1	0.75	0.8	6
Lagoon Beach	CREMORNE	440	548	SE	1.5	1	1.5	1.0	4
Lanoma Point	LYME REGIS	893	822	NE	0.1	1	0.1	0.5	3
Lauderdale Coastline (Ralphs Bay)	TAROONA	485	395	SE	6.0	7	15.3	9.0	11
Leith Foreshore	ULVERSTONE	435	372	N	0.5	4	1.0	1.75	5
Lewisham	CARLTON	580	494	SE	1.0	1	0.1	0.5	1
Lighthouse Bay (Bruny Is)	CLOUDY	853	125	Islands-S	1.5	9	12.5	9.67	6
Lillico Beach	DEVONPORT/ULV	431	411	N	7.0	1	7.0	2.0	5
Lime Bay	CREMORNE	435	575	SE	1.3	1	1.3	0.33	0
Limekline Point	LISDILLON	149	820	E	0.5	1	0.5	0.1	1
Lindisfarne Esplanade	HOBART	545	287	SE	2.0	1	0.1	0.5	0
Lisdillon Beach	LISDILLON	177	833	E	2.5	12	21.0	36.0	14
Little Boomer	DUNALLEY	557	699	SE	2.0	6	12.8	9.75	15
Little Musselroe	MUSSELROE	865	875	NE	4.0	8	9.4	7.25	19
Little Peppermint Bay	CYGNET	226	200	S	1.0	1	0.1	0.5	1
Little Spectacle Island	CARLTON	539	490	Islands-SE	0.3	5	0.5	2.5	5
Little Swanport	LISDILLON	152	819	E	1.0	1	0.1	0.5	0
Little Swanport (lagoon mouth)	LISDILLON	151	821	E	0.5	3	0.7	2.0	11

Little Towterer Beach	SETTLEMENT	151	030	SW	0.2	1	0.2	0.5	1
Logan's Lagoon (Flinders Is)	FISHER	490	123	Islands-NE	1.0	2	0.2	5.25	7
Long Bay Shoal	GREAT BAY	123	205	S	0.1	1	0.1	0.5	5
Long Point (Flinders Is)	LEVENTHORPE	605	812	Islands-NE	2.0	2	0.2	1.0	8
Long Spit	DUNALLEY	558	722	SE	0.5	2	0.2	8.0	4
Louisa Bay	DE WITT	810	488	SW	2.5	2	5.0	9.0	6
Low Head	LOW HEAD	543	823	N	1.0	1	1.0	0.5	5
Lowestoft Bay	RICHMOND	603	206	SE	1.0	3	0.3	1.5	2
Lufra Cove	TARANNA	376	757	SE	1.0	1	1.0	1.0	4
Maatsuyker Island	DE WITT	662	414	Islands-SW	1.0	2	2.0	3.3	3
Maclean's Beach (Clarke Is)	PRESERVATION	147	950	Islands-NE	0.2	1	0.2	0.5	4
Marion Bay Causeway	DUNALLEY	587	705	SE	0.1	5	0.5	2.5	9
Marion Beach	DUNALLEY	587	710	SE	8.5	8	24.0	10.66	12
Marshall Beach (Flinders Is)	EMITA	784	650	Islands-NE	10.0	1	0.1	0.5	6
Mary Ann Bay	TAROONA	420	323	SE	0.5	1	0.1	0.5	2
Maurouard Beach	ST HELENS	270	116	NE	8.0	10	40.0	10.83	10
Mays Beach	CREMORNE	471	419	SE	1.0	1	0.1	0.5	3
Melane Road	RICHMOND	634	233	SE	0.5	6	0.6	3.0	3
Meredith River (river mouth)	SWANSEA	370	886	E	0.6	5	3.8	25.25	11
Middle Spectacle Island	CARLTON	538	490	Islands-SE	0.1	5	0.5	2.5	6
Midway Point Beach	SORELL	610	428	SE	0.3	2	0.6	1.55	2
Missionary Bay (Bruny Is)	GREAT BAY	194	264	Islands-S	3.0	1	0.1	0.5	3
Montague Island	MONTAGU	867	240	Islands-NW	2.0	2	2.5	8.25	10
Montrose Basin	HOBART	584	227	SE	0.5	1	0.1	0.5	1
Moorland Point	DEVONPORT	431	540	N	0.5	15	7.5	3.75	10
Moreys Bay	SCHOUTEN	160	055	E	0.5	1	0.5	0.33	1
Moriarty Beach (Clarke Is)	PASSAGE	070	008	Islands-NE	4.5	1	4.5	2.0	5
Mortimer Bay	TAROONA	412	388	SE	2.0	3	5.0	2.5	2
Mosquito Inlet (Robbins Is)	ROBBINS	985	265	Islands-NW	3.0	1	4.0	8.0	4
Moulting Lagoon	FRIENDLY	470	012	E	10.0	3	30.0	18.5	12
Muir's Beach	COLES BAY	363	055	E	2.0	1	2.0	1.0	3

Mulcahy Bay	MULCAHY	260	096	SW	1.5	3	4.5	4.25	6
Musselroe	LYME REGIS	788	985	NE	2.0	2	4.0	3.25	13
Naracoopa Beach (King Is)	NARACOOPA	770	540	Islands-NW	1.0	1	1.0	0.75	4
Nelson Bay	SUNDOWN	430	043	NW	2.5	1	0.5	0.45	6
New Town Bay	HOBART	562	257	SE	1.0	1	0.1	0.5	1
Nine Mile Beach	SWANSEA	389	990	E	15.0	8	18.2	11.83	11
North East Arm	PORT SORELL	440	665	N	0.1	2	0.2	1.0	9
North East River (river mouth) (Flinders)	ARTHURS	980	822	Islands-NE	1.0	1	0.1	0.5	9
North Pascoe Island	TANNER	800	661	Islands-NE	2.5	1	0.1	0.5	2
North West Bay (near railway)	BLACKMANS BAY	346	222	S	0.5	3	0.3	1.5	3
North West Bay (river mouth)	BLACKMANS BAY	363	220	S	0.5	3	0.3	1.5	3
Noyhener Beach	HILLIARD	937	184	SW	2.0	1	2.0	2.0	6
Nye Bay	ELLIOTT	315	930	SW	3.0	1	3.0	2.0	8
Ocean Beach (to mouth of Henty R.)	BELLINGER	325	563	W	30.0	7	29.5	15.33	13
Okehampton Bay	BOUGAINVILLE	925	805	E	0.7	11	7.7	6.07	9
Old Beach	RICHMOND	644	214	SE	1.0	1	0.1	0.5	1
Opossum Bay	TAROONA	402	322	SE	1.0	1	0.1	0.5	1
Orford Spit	ORFORD	882	722	E	0.5	10	12.6	14.25	12
Orielton Causeway	SORELL	614	445	SE	1.0	5	2.3	7.35	13
Orielton Lagoon	SORELL	625	449	SE	3.0	15	19.8	16.0	17
Osmiridium Beach	PRION	764	695	SW	1.0	1	0.5	0.75	3
Otago Bay	RICHMOND	603	238	SE	1.0	1	0.1	0.5	1
Palana Beach (Flinders Is)	PALANA	989	753	Islands-NE	2.0	1	0.1	0.5	2
Patriarch Inlet (Flinders Is)	PATRIARCHS	770	006	Islands-NE	0.5	3	0.3	1.33	15
Pavilion Point	HOBART	541	273	SE	0.3	1	0.1	0.5	1
Pearshape Lagoon (King Is)	PEARSHAPE	610	370	Islands-NW	1.0	1	1.0	0.5	1
Pebbly Bay	ROCKY CAPE	741	688	NW	0.5	5	3.0	4.5	8
Pebbly Beach	ANSONS BAY	504	078	NE	1.0	2	2.0	1.75	8
Pelican Rocks	CRANBROOK	408	982	E	2.0	1	2.0	1.5	2
Petrifaction Bay (Flinders Is)	LOGAN	475	035	Islands-NE	3.0	2	0.2	1.0	7
Pigeon Holes	BLACKMANS BAY	380	323	S	0.5	1	0.1	0.5	2

Pipeclay Lagoon	CREMORNE	420	425	SE	5.0	11	17.6	15.0	13
Pirates Bay	TARANNA	355	755	SE	3.0	6	14.1	8.0	8
Policeman's Point (mouth Ansons River)	ANSONS BAY	532	089	NE	1.5	10	9.0	11.0	16
Port Latta	ROCKY CAPE	762	637	NW	0.5	1	0.1	0.5	1
Port Sorell	PORT SORELL	431	626	N	1.0	1	0.1	0.5	6
Pot Boil	FISHER	470	172	Islands-NE	0.1	1	0.1	0.5	4
Prince of Wales Bay	HOBART	577	245	SE	1.0	2	0.2	1.0	2
Prion Beach	PRION	799	650	SW	6.5	2	7.5	5.25	5
Pyramids (Risdon)	HOBART	595	264	SE	0.1	2	0.2	1.0	1
Ralphs Bay	TAROONA	490	393	SE	2.0	8	0.8	4.0	10
Ranson's Beach	WATERHOUSE	783	580	NE	1.0	1	1.0	0.5	2
Raspins Beach	ORFORD	886	724	E	0.7	1	0.1	0.5	1
Rebecca Beach (Clarke Is)	MORIARTY	086	955	Islands-NE	0.3	1	0.3	0.5	2
Redbill Beach	BICHENO	641	069	E	1.0	1	1.0	1.0	1
Rheban	SANDSPIT	780	780	SE	3.0	1	3.0	3.25	9
Riedle Bay (Maria Is)	RIEDLE	750	876	Islands-E	3.0	1	3.0	1.1	5
Roaring Beach (Nubeena)	PORT ARTHUR	288	548	SE	0.8	1	0.8	0.25	2
Roaring Beach (Southport)	HASTINGS	907	992	S	1.2	8	9.6	4.51	6
Roches Beach	CARLTON	507	408	SE	0.5	6	3.9	5.2	7
Rocky Bay	LYMINGTON	166	830	S	1.0	2	0.2	1.0	3
Rocky Islet (south of Kelly Island)	DUNALLEY	515	794	Islands-SE	0.5	1	0.1	0.5	1
Roydon Island	TANNER	820	660	Islands-NE	3.0	1	0.1	0.5	2
Safety Cove	RAOUL	188	692	SE	1.3	1	1.3	0.33	4
Saltworks Beach	LISDILLON	155	823	E	0.5	3	4.0	5.25	8
Samphire Corner (Flinders Is)	FISHER	470	017	Islands-NE	0.1	3	0.3	3.5	8
Samphire Creek (Flinders Is)	FISHER	473	012	Islands-NE	0.1	1	0.1	0.5	0
Sandblow Bay	SETTLEMENT	107	037	SW	0.3	1	0.3	1.5	5
Sandspit	SANDSPIT	770	783	SE	1.0	2	3.0	3.0	9
Sandspit Point	SCHOUTEN	164	042	E	1.5	1	1.0	0.66	2
Sandy Point	CARLTON	560	500	SE	0.5	1	0.1	0.5	2
Saunderson's Road	HOBART	584	258	SE	1.0	2	0.2	1.0	1

Sawyers Bay (Flinders Is)	WYBALENNA	682	780	Islands-NE	4.0	1	0.1	0.5	2
Scamander River (river mouth)	BEAUMAURIS	093	054	NE	0.1	2	0.2	1.0	10
Sea Elephant Inlet (King Is)	SEA ELEPHANT	880	529	Islands-NW	3.0	2	1.0	2.5	6
Seven Mile Beach	CARLTON	569	465	SE	11.0	4	21.0	10.75	5
Seven Mile Bch (Anthony's, Eagle Point)	STANLEY	813	465	NW	11.0	3	1.1	16.5	12
Seven Mile Bch (Anthony's, east end)	STANLEY	828	531	NW	0.5	1	0.5	8.0	10
Sewage Point Spit	SORELL	629	436	SE	0.1	1	0.1	0.5	4
Sewage Pond (St Helens)	ST HELENS	244	053	NE	0.5	1	0.1	0.5	2
Shark Bay	ANSONS BAY	565	085	NE	1.0	1	0.5	0.33	5
Shelly Beach	TAROONA	413	327	SE	1.5	1	0.1	0.5	2
Shipwreck Point (Perkins Is)	MONTAGU	868	348	Islands-NW	1.0	2	2.5	10.0	16
Shoal Bay & Chinamans Bay (Maria Is)	RIEDLE	758	870	Islands-E	5.5	1	4.0	1.0	6
Silver Water Park	CYGNET	208	193	S	0.5	1	0.1	0.5	1
Simpson's Bay (Bruny Is)	ADVENTURE BAY	060	250	Islands-S	2.0	1	2.0	1.0	2
Sisters Beach	WYNARD	695	788	NW	4.0	2	8.0	2.25	7
Sloping Island	CREMORNE	444	524	Islands-SE	3.0	6	0.6	6.0	5
Sloping Main	CREMORNE&COM	400	553	SE	3.5	2	4.3	3.0	5
Sloping Reef	CREMORNE	437	517	Islands-SE	0.5	4	0.4	2.0	3
Snake Island	GREAT BAY	197	236	Islands-S	0.5	2	0.2	1.0	5
Snug Beach	BLACKMANS BAY	318	214	S	0.5	4	0.4	2.0	5
Soldiers Beach (Maria Is)	RIEDLE	790	848	Islands-E	1.0	1	1.0	0.25	5
Sorell (no site given)	SORELL	614	458	SE	1.0	3	3.0	2.5	4
South Arm Neck (Wildlife Sanctuary)	BLACKMANS BAY	353	370	S	5.0	12	15.75	11.75	13
South Cape Bay	RECHERCHE	720	840	SW	3.5	4	10.6	3.75	4
Spike Bay (Clarke Is)	PRESERVATION	117	948	Islands-NE	0.4	1	0.4	0.25	3
Squeeking Pt (mud banks)	HARFORD	398	640	N	2.0	1	2.0	1.0	2
Steels Beach	FALMOUTH	086	057	NE	4.5	11	39.5	21.66	13
Stephans Bay	HILLIARD	954	167	SW	2.0	1	2.0	2.0	3
Stinking Bay	PORT ARTHUR	250	717	SE	0.3	1	0.3	0.33	2
Stockyard Point	GREAT BAY	187	266	S	0.1	1	0.1	0.5	5
Stony Point	MONTAGU	877	292	NW	0.5	1	0.1	0.5	1

Stumpy Bay	NATURALISTE	750	028	NE	6.0	1	6.0	3.0	6
Surprise Bay	PRION	743	720	SW	1.0	3	3.0	1.5	4
Suzie Island	SORELL	618	447	Islands-SE	0.1	3	0.3	1.5	4
Swanwick Bay	COLES BAY	393	026	E	1.5	1	1.5	0.5	1
Syndicate Lagoon (Flinders Is)	FISHER	487	126	Islands-NE	1.0	2	0.2	5.25	8
Tatlows Beach	STANLEY	856	555	NW	2.0	1	0.1	0.5	1
Taylors Beach	BINALONG	390	065	NE	4.0	1	4.0	1.0	4
Tea Tree Point	ULVERSTONE	476	244	N	0.3	1	0.2	0.75	4
The Gulch	BICHENO	631	087	E	0.5	1	0.1	0.5	2
The Neck (Bruny Is)	ADVENTURE BAY	093	283	Islands-S	10.2	7	61.8	24.55	9
Tomahawk Beach	TOMAHAWK	741	660	NE	6.0	1	1.0	0.5	3
Towterer Beach	SETTLEMENT	150	027	SW	1.2	3	3.6	2.55	5
Tregaron Lagoons	LYME REGIS	854	820	NE	2.0	1	0.1	0.5	1
Triabunna	TRIABUNNA	929	749	E	0.5	1	0.1	0.5	4
Trial Bay	BARNES BAY	244	204	S	0.4	13	3.4	17.75	7
Trousers Point (Flinders Is)	LOCCOTA	475	870	Islands-NE	1.0	1	0.1	0.5	1
Tuckers Arm	ST HELENS	293	072	NE	0.6	1	0.6	0.5	2
Turua Beach	PRECIPITOUS	808	605	SW	1.5	1	1.5	0.75	1
Two Mile Beach	DUNALLEY	530	757	SE	3.0	1	3.0	1.25	8
Two Tree Point	ADVENTURE BAY	003	260	S	0.8	8	8.25	5.14	7
Un named 1 (Bruny Is)	GREAT BAY	177	312	Islands-S	3.0	1	2.0	1.0	2
Un named 2	DUNALLEY	506	650	SE	1.0	1	1.0	1.0	2
Valhalla Bay	DUNALLEY	555	687	SE	2.0	2	0.2	1.0	4
Visscher Island	DUNALLEY	546	797	Islands-SE	0.5	2	0.2	1.0	5
Wallaby Islands	ROBBINS	893	196	Islands-NW	2.0	1	2.0	8.0	7
Watcombe/Penguin Beach	ULVERSTONE	478	225	N	1.3	2	2.0	1.75	4
Waterview Bird Sanctuary	SORELL	617	459	SE	0.4	8	3.6	5.75	11
Waterhouse	WATERHOUSE	752	496	NE	3.0	1	1.0	0.5	2
Welcome River (river mouth)	GRIM	910	120	NW	3.0	1	5.0	8.0	2
West Cove (Deal Is, Kent Group)	no map available	-	-	Islands-NE	0.2	1	0.2	0.5	3
West Inlet	STANLEY	814	530	NW	3.0	1	0.1	0.5	4

White Rock Point	TAROONA	415	318	SE	0.2	1	0.1	0.5	1
Whitemark Beach (Flinders Is)	WHITEMARK	574	863	Islands-NE	7.0	1	0.1	0.5	2
Wilson's Lagoon (Flinders Is)	FISHER	464	101	Islands-NE	0.5	1	0.1	0.5	2
Windermere Bay	RICHMOND	617	212	SE	1.5	3	0.3	1.5	2
Winter Cove (Deal Is, Kent Group)	no map available	-	-	Islands-NE	0.1	1	0.5	1.5	2
Wreck Bay Beach	SETTLEMENT	175	015	SW	2.5	1	2.5	1.0	4
Wrinklers Beach	BEAUMARIS	110	061	NE	3.5	2	4.5	2.0	7



APPENDIX B – Species and Sites where they were Recorded

Species	Site	No Visits Recorded
Banded Lapwing	Adelaide Bay	1
Banded Lapwing	Cape Portland	3
Banded Lapwing	Eagle Point Beach	1
Banded Lapwing	Little Musselroe	1
Banded Lapwing	Shark Bay	1
Bar-tailed Godwit	Adelaide Bay	2
Bar-tailed Godwit	Cameron Inlet	1
Bar-tailed Godwit	Cape Portland	3
Bar-tailed Godwit	Five Islets	1
Bar-tailed Godwit	George Town Reserve	3
Bar-tailed Godwit	Georges Bay	1
Bar-tailed Godwit	Lauderdale Coastline (Ralph's Bay)	1
Bar-tailed Godwit	Lisdillon Beach	2
Bar-tailed Godwit	Little Boomer	1
Bar-tailed Godwit	Little Musselroe	6
Bar-tailed Godwit	Marion Beach	1
Bar-tailed Godwit	Maurouard Beach	4
Bar-tailed Godwit	Meredith River (river mouth)	1
Bar-tailed Godwit	Musselroe	2
Bar-tailed Godwit	Nine Mile Beach	1
Bar-tailed Godwit	North East River (river mouth)	1
Bar-tailed Godwit	Orielton Causeway	1
Bar-tailed Godwit	Orielton Lagoon	3
Bar-tailed Godwit	Patriarch Inlet	1
Bar-tailed Godwit	Pipeclay Lagoon	3
Bar-tailed Godwit	Policemans Point	8
Bar-tailed Godwit	Rheban	1
Bar-tailed Godwit	Saltworks Beach	1
Bar-tailed Godwit	Sewage Point Spit	1
Bar-tailed Godwit	South Arm Neck (Ralphs Bay Wildlife	1
Black-fronted Dotterel	Calverts Lagoon	1
Black-fronted Dotterel	Cape Portland	1
Black-fronted Dotterel	Iron Creek	1
Black-fronted Dotterel	Moulting Lagoon	2
Black-fronted Dotterel	Okehampton Bay	1
Black-fronted Dotterel	Pearshape Lagoon	1
Black-fronted Dotterel	Policemans Point	1
Black-fronted Dotterel	Saltworks Beach	1
Caspian Tern	Adelaide Bay	3
Caspian Tern	Arthur River (river mouth)	1
Caspian Tern	Barilla Bay	1
Caspian Tern	Barren Island	1
Caspian Tern	Baynes Island	1

Caspian Tern	Beaumaris Beach	4
Caspian Tern	Big Spectacle Island	1
Caspian Tern	Bird Point	1
Caspian Tern	Boomer Bay	1
Caspian Tern	Cameron Inlet	1
Caspian Tern	Cape Portland	1
Caspian Tern	Cowper Point	1
Caspian Tern	Cox Bight	1
Caspian Tern	Curlew Island	1
Caspian Tern	Dru Point	1
Caspian Tern	East Cove	3
Caspian Tern	Fisher Reef	1
Caspian Tern	Forwards & Picnic Beach	3
Caspian Tern	Friendly Beaches	2
Caspian Tern	Garden Cove	1
Caspian Tern	Green Island	4
Caspian Tern	Green Point	1
Caspian Tern	Grindstone Bay	1
Caspian Tern	Hog Island	2
Caspian Tern	Humper Bluff	1
Caspian Tern	Iron Pot	1
Caspian Tern	Isle of Caves	2
Caspian Tern	Kangaroo Bay Beach	1
Caspian Tern	Kangaroo Island	1
Caspian Tern	Lachlan Island	1
Caspian Tern	Lisdillon Beach	3
Caspian Tern	Little Boomer	2
Caspian Tern	Little Musselroe	1
Caspian Tern	Little Swanport (lagoon mouth)	1
Caspian Tern	Logans Lagoon	1
Caspian Tern	Long Spit	1
Caspian Tern	Louisa Bay	1
Caspian Tern	Marion Bay Bridge	1
Caspian Tern	Marion Beach	2
Caspian Tern	Meredith River (river mouth)	4
Caspian Tern	Montague Island	1
Caspian Tern	Moulting Lagoon	1
Caspian Tern	Mulcahy Bay	2
Caspian Tern	Musselroe	1
Caspian Tern	Nine Mile Beach	7
Caspian Tern	North East River (river mouth)	1
Caspian Tern	North West Bay (river mouth)	2
Caspian Tern	Nye Bay	1
Caspian Tern	Ocean Beach	2
Caspian Tern	Orielton Causeway	1
Caspian Tern	Orielton Lagoon	1
Caspian Tern	Patriarch Inlet	3

Caspian Tern	Pebbly Bay	1
Caspian Tern	Pebbly Beach	1
Caspian Tern	Pirates Bay	1
Caspian Tern	Policemans Point	2
Caspian Tern	Pot Boil	1
Caspian Tern	Saltworks Beach	1
Caspian Tern	Samphire Corner	1
Caspian Tern	Sandspit	1
Caspian Tern	Scamander River (river mouth)	2
Caspian Tern	Seven Mile Beach (East end)	1
Caspian Tern	Shoal Bay & Chinamans Bay	1
Caspian Tern	Sisters Beach	1
Caspian Tern	Sorell	1
Caspian Tern	Steels Beach	6
Caspian Tern	Syndicate Lagoon	1
Caspian Tern	Visscher Island	1
Caspian Tern	Wallaby Islands	1
Caspian Tern	Water View Bird Sanctuary	3
Common Greenshank	Adelaide Bay	3
Common Greenshank	Bird Point	1
Common Greenshank	Cameron Inlet	2
Common Greenshank	Cowper Point	1
Common Greenshank	George Town Reserve	4
Common Greenshank	Georges Bay	1
Common Greenshank	Long Point	1
Common Greenshank	Meredith River (river mouth)	3
Common Greenshank	Moulting Lagoon	2
Common Greenshank	Musselroe	1
Common Greenshank	North East River (river mouth)	1
Common Greenshank	Orielton Causeway	3
Common Greenshank	Orielton Lagoon	1
Common Greenshank	Sea Elephant Inlet	2
Common Greenshank	Sewage Point Spit	1
Common Greenshank	Syndicate Lagoon	1
Common Greenshank	Water View Bird Sanctuary	3
Crested Tern	Abbotsbury Beach	1
Crested Tern	Adventure Bay Beach	2
Crested Tern	Arch Rock	1
Crested Tern	Arthur Beach	2
Crested Tern	Australia Point	2
Crested Tern	Badger Beach	2
Crested Tern	Bakers Beach	1
Crested Tern	Barilla Bay	1
Crested Tern	Beaumaris Beach	9
Crested Tern	Beerbarrel Beach	1
Crested Tern	Below Pollys Bay	1
Crested Tern	Betsey Island	2

Crested Tern	Big Green Island	1
Crested Tern	Bird Point	1
Crested Tern	Black Jack Rocks	2
Crested Tern	Boomer Bay	1
Crested Tern	Cameron Inlet	2
Crested Tern	Cape Portland	1
Crested Tern	Cloudy Beach	1
Crested Tern	Coningham Beach	1
Crested Tern	Cowper Point	1
Crested Tern	Curlew Island	1
Crested Tern	Dennes Point	1
Crested Tern	Dru Point	2
Crested Tern	East Inlet	1
Crested Tern	Fisher Reef	3
Crested Tern	Five Mile Beach	1
Crested Tern	Forwards & Picnic Beach	7
Crested Tern	Foster Islands (east islet)	1
Crested Tern	Foster Islands (west islet)	1
Crested Tern	Freers Beach	1
Crested Tern	Fulham Point	1
Crested Tern	Gellibrand Point	1
Crested Tern	George Town Reserve	1
Crested Tern	Goat Bluff	1
Crested Tern	Governor Island	1
Crested Tern	Great Bay	1
Crested Tern	Green Island	3
Crested Tern	Green Point	1
Crested Tern	Green Point Beach	1
Crested Tern	High Yellow Bluff	1
Crested Tern	Hog Island	1
Crested Tern	Horseshoe Bank	5
Crested Tern	Iron Pot	1
Crested Tern	Isle of Caves	4
Crested Tern	Kangaroo Island	1
Crested Tern	Killecrankie Bay	1
Crested Tern	Little Boomer	2
Crested Tern	Little Musselroe	5
Crested Tern	Little Peppermint Bay	1
Crested Tern	Little Spectacle Island	2
Crested Tern	Little Swanport (lagoon mouth)	2
Crested Tern	Long Spit	1
Crested Tern	Lowestoft Bay	1
Crested Tern	Marion Bay Bridge	1
Crested Tern	Marion Beach	3
Crested Tern	Melane Road	1
Crested Tern	Meredith River (river mouth)	1
Crested Tern	Middle Spectacle Island	1

Crested Tern	Moorland Point	5
Crested Tern	Moultng Lagoon	3
Crested Tern	Nelson Bay	1
Crested Tern	Nine Mile Beach	3
Crested Tern	North East Arm	2
Crested Tern	North East River (river mouth)	1
Crested Tern	North Pascoe Island	1
Crested Tern	North West Bay (old railway)	2
Crested Tern	Nye Bay	1
Crested Tern	Ocean Beach	2
Crested Tern	Old Beach	1
Crested Tern	Orford Spit	3
Crested Tern	Orielton Lagoon	4
Crested Tern	Palana Beach	1
Crested Tern	Patriarch Inlet	1
Crested Tern	Pebbly Bay	3
Crested Tern	Petrifaction Bay	1
Crested Tern	Pipeclay Lagoon	2
Crested Tern	Policemans Point	5
Crested Tern	Port Sorell	1
Crested Tern	Pot Boil	1
Crested Tern	Ralphs Bay	3
Crested Tern	Redbill Beach	1
Crested Tern	Rheban	1
Crested Tern	Roches Beach	3
Crested Tern	Samphire Corner	1
Crested Tern	Sawyers Bay	1
Crested Tern	Scamander River (river mouth)	2
Crested Tern	Seven Mile Beach (East end)	1
Crested Tern	Shark Bay	1
Crested Tern	Shoal Bay & Chinamans Bay	1
Crested Tern	Sisters Beach	1
Crested Tern	Snake Island	2
Crested Tern	Snug Beach	3
Crested Tern	Soldiers Beach	1
Crested Tern	South Arm Neck (Ralphs Bay Wildlife	3
Crested Tern	Steels Beach	10
Crested Tern	Stockyard Point	1
Crested Tern	Suzie Island	1
Crested Tern	Syndicate Lagoon	1
Crested Tern	The Gulch	1
Crested Tern	Tomahawk Beach	1
Crested Tern	Trial Bay	1
Crested Tern	Trousers Point	1
Crested Tern	Wallaby Islands	1
Crested Tern	Water View Bird Sanctuary	3
Crested Tern	West Inlet	1

Crested Tern	Wrinklers Beach	1
Curlew Sandpiper	Barilla Bay	1
Curlew Sandpiper	Bird Point	1
Curlew Sandpiper	Calverts Lagoon	3
Curlew Sandpiper	Cameron Inlet	2
Curlew Sandpiper	Cape Portland	6
Curlew Sandpiper	Fisher Reef	1
Curlew Sandpiper	Friendly Beaches	1
Curlew Sandpiper	George Town Reserve	4
Curlew Sandpiper	Great Bay	1
Curlew Sandpiper	Kangaroo Island	1
Curlew Sandpiper	Lisdillon Beach	3
Curlew Sandpiper	Little Musselroe	4
Curlew Sandpiper	Logans Lagoon	1
Curlew Sandpiper	Maurouard Beach	2
Curlew Sandpiper	Musselroe	2
Curlew Sandpiper	Ocean Beach	1
Curlew Sandpiper	Orford Spit	1
Curlew Sandpiper	Orielton Causeway	2
Curlew Sandpiper	Orielton Lagoon	5
Curlew Sandpiper	Patriarch Inlet	1
Curlew Sandpiper	Pipeclay Lagoon	4
Curlew Sandpiper	Seven Mile Beach (East end)	1
Curlew Sandpiper	Sewage Point Spit	1
Curlew Sandpiper	Shipwreck Point	1
Curlew Sandpiper	South Arm Neck (Ralphs Bay Wildlife	2
Curlew Sandpiper	Syndicate Lagoon	1
Double-banded Plover	Arthur Beach	2
Double-banded Plover	Barilla Bay	1
Double-banded Plover	Bird Point	1
Double-banded Plover	Calverts Lagoon	1
Double-banded Plover	Cape Portland	3
Double-banded Plover	Forwards & Picnic Beach	1
Double-banded Plover	Grindstone Bay	5
Double-banded Plover	Lauderdale Coastline (Ralphs Bay)	3
Double-banded Plover	Little Boomer	2
Double-banded Plover	Little Musselroe	1
Double-banded Plover	Little Swanport (lagoon mouth)	1
Double-banded Plover	Moorland Point	8
Double-banded Plover	Moulting Lagoon	1
Double-banded Plover	North East Arm	1
Double-banded Plover	Ocean Beach	1
Double-banded Plover	Orielton Causeway	1
Double-banded Plover	Orielton Lagoon	1
Double-banded Plover	Patriarch Inlet	1
Double-banded Plover	Pipeclay Lagoon	5
Double-banded Plover	Ralphs Bay	3

Double-banded Plover	Seven Mile Beach (East end)	1
Double-banded Plover	Shipwreck Point	1
Double-banded Plover	South Arm Neck (Ralphs Bay Wildlife	2
Double-banded Plover	Stumpy Bay	1
Eastern Curlew	Adelaide Bay	3
Eastern Curlew	Bakers Beach	1
Eastern Curlew	Barilla Bay	2
Eastern Curlew	Cape Portland	2
Eastern Curlew	East Inlet	1
Eastern Curlew	George Town Reserve	4
Eastern Curlew	Great Bay	1
Eastern Curlew	Kangaroo Island	1
Eastern Curlew	Lauderdale Coastline (Ralphs Bay)	1
Eastern Curlew	Little Boomer	1
Eastern Curlew	Little Musselroe	4
Eastern Curlew	Long Point	2
Eastern Curlew	Mosquito Inlet	1
Eastern Curlew	Moulting Lagoon	2
Eastern Curlew	Musselroe	1
Eastern Curlew	North East River (river mouth)	1
Eastern Curlew	Orielton Causeway	1
Eastern Curlew	Orielton Lagoon	5
Eastern Curlew	Ralphs Bay	3
Eastern Curlew	Samphire Corner	1
Eastern Curlew	Sorell	2
Eastern Curlew	Water View Bird Sanctuary	3
Fairy Tern	Bakers Beach	1
Fairy Tern	Baynes Island	1
Fairy Tern	Bird Point	1
Fairy Tern	Blanche Point	1
Fairy Tern	Bridport	2
Fairy Tern	Cameron Inlet	2
Fairy Tern	Cape Portland	2
Fairy Tern	Dianas Beach	1
Fairy Tern	Five Islets	1
Fairy Tern	George Town Reserve	2
Fairy Tern	Georges Bay	1
Fairy Tern	Lisdillon Beach	7
Fairy Tern	Little Musselroe	3
Fairy Tern	Logans Lagoon	2
Fairy Tern	Maurouard Beach	8
Fairy Tern	Meredith River (river mouth)	1
Fairy Tern	Musselroe	1
Fairy Tern	Orford Spit	6
Fairy Tern	Patriarch Inlet	1
Fairy Tern	Pebbly Bay	1
Fairy Tern	Policemans Point	1

Fairy Tern	Saltworks Beach	1
Fairy Tern	Sandspit	1
Fairy Tern	Seven Mile Beach (Anthony Beach)	2
Fairy Tern	Shipwreck Point	1
Fairy Tern	Steels Beach	2
Fairy Tern	Syndicate Lagoon	2
Great Knot	Bird Point	1
Great Knot	Five Islets	1
Grey Plover	Five Islets	1
Grey-tailed Tattler	Bird Point	1
Grey-tailed Tattler	Cape Portland	5
Grey-tailed Tattler	George Town Reserve	1
Grey-tailed Tattler	Montague Island	1
Grey-tailed Tattler	Moorland Point	8
Hooded Plover	Adventure Bay Beach	8
Hooded Plover	Arthur Beach	4
Hooded Plover	Arthur River (river mouth)	1
Hooded Plover	Australia Point	2
Hooded Plover	Badger Beach	3
Hooded Plover	Bakers Beach	6
Hooded Plover	Bay of Fires	1
Hooded Plover	Beaumaris Beach	14
Hooded Plover	Bell Buoy	1
Hooded Plover	Below Pollys Bay	1
Hooded Plover	Binalong Bay	15
Hooded Plover	Black River Beach	2
Hooded Plover	Blanche Point	5
Hooded Plover	Bloodstone Beach	1
Hooded Plover	Boobyalla Reserve	1
Hooded Plover	Break Yoke Beach	4
Hooded Plover	Bryans Beach	1
Hooded Plover	Calverts Beach	1
Hooded Plover	Calverts Lagoon	10
Hooded Plover	Cameron Inlet	3
Hooded Plover	Cape Portland	5
Hooded Plover	City of Melbourne Bay	1
Hooded Plover	Cloudy Bay	1
Hooded Plover	Cloudy Beach	5
Hooded Plover	Coswell & Piermont Beach	1
Hooded Plover	Cowper Point	1
Hooded Plover	Cox Bight	3
Hooded Plover	Crescent Bay	1
Hooded Plover	Darlington Bay	2
Hooded Plover	Dianas Beach	4
Hooded Plover	Dora Point	1
Hooded Plover	Dunckels Beach	6
Hooded Plover	Fortescue Bay	6



Hooded Plover	Forwards & Picnic Beach	11
Hooded Plover	Four Mile Beach	1
Hooded Plover	Friendly Beaches	4
Hooded Plover	Garden Cove	3
Hooded Plover	Gardens Lagoon Beach	7
Hooded Plover	Granite Beach	1
Hooded Plover	Green Point Beach	6
Hooded Plover	Grindstone Bay	11
Hooded Plover	Hazard Bay	1
Hooded Plover	Hazards Beach	1
Hooded Plover	Hope Beach	1
Hooded Plover	Horseshoe Bank	1
Hooded Plover	Kangaroo Bay Beach	1
Hooded Plover	Lagoon Bay	1
Hooded Plover	Lagoon Beach	1
Hooded Plover	Lanoma Point	1
Hooded Plover	Lighthouse Bay	9
Hooded Plover	Lisdillon Beach	12
Hooded Plover	Little Boomer	1
Hooded Plover	Little Musselroe	4
Hooded Plover	Little Swanport (lagoon mouth)	1
Hooded Plover	Little Towterer Beach	1
Hooded Plover	Logans Lagoon	1
Hooded Plover	Louisa Bay	2
Hooded Plover	Macleans Beach	1
Hooded Plover	Marion Beach	8
Hooded Plover	Marshall Beach	1
Hooded Plover	Maurouard Beach	8
Hooded Plover	Meredith River (river mouth)	3
Hooded Plover	Moriarty Beach	1
Hooded Plover	Mulcahy Bay	3
Hooded Plover	Nelson Bay	1
Hooded Plover	Nine Mile Beach	7
Hooded Plover	Noyhener Beach	1
Hooded Plover	Nye Bay	1
Hooded Plover	Ocean Beach	3
Hooded Plover	Okehampton Bay	11
Hooded Plover	Orford Spit	15
Hooded Plover	Patriarch Inlet	3
Hooded Plover	Pebbly Bay	2
Hooded Plover	Pebbly Beach	2
Hooded Plover	Pirates Bay	5
Hooded Plover	Policemans Point	9
Hooded Plover	Prion Beach	1
Hooded Plover	Ranson's Beach	2
Hooded Plover	Rebeca Beach	1
Hooded Plover	Rheban	1

Hooded Plover	Riedle Bay	1
Hooded Plover	Roaring Beach (Southport)	8
Hooded Plover	Safety Cove	1
Hooded Plover	Saltworks Beach	4
Hooded Plover	Sandblow Bay	1
Hooded Plover	Sandspit	1
Hooded Plover	Sandspit Point	1
Hooded Plover	Scamander River (river mouth)	1
Hooded Plover	Seven Mile Beach	1
Hooded Plover	Seven Mile Beach (Anthony Beach)	2
Hooded Plover	Seven Mile Beach (East end)	1
Hooded Plover	Shipwreck Point	1
Hooded Plover	Shoal Bay & Chinamans Bay	1
Hooded Plover	Sloping Main	2
Hooded Plover	Soldiers Beach	1
Hooded Plover	South Cape Bay	2
Hooded Plover	Spike Bay	1
Hooded Plover	Steels Beach	10
Hooded Plover	Stephans Bay	1
Hooded Plover	Stumpy Bay	1
Hooded Plover	Surprise Bay	2
Hooded Plover	Swanwick Bay	1
Hooded Plover	Taylors Beach	1
Hooded Plover	The Neck	7
Hooded Plover	Tomahawk Beach	1
Hooded Plover	Towterer Beach	3
Hooded Plover	Trial Bay	1
Hooded Plover	Turua Beach	1
Hooded Plover	Two Mile Beach	1
Hooded Plover	Two Tree Point	7
Hooded Plover	Water View Bird Sanctuary	2
Hooded Plover	Wreck Bay Beach	1
Hooded Plover	Wrinklers Beach	1
Kelp Gull	Adventure Bay Beach	6
Kelp Gull	Arch Rock	2
Kelp Gull	Barilla Bay	1
Kelp Gull	Barren Island	1
Kelp Gull	Beaumaris Beach	1
Kelp Gull	Beedham Bay	1
Kelp Gull	Beerbarrel Beach	1
Kelp Gull	Betsey Island	1
Kelp Gull	Big Spectacle Island	4
Kelp Gull	Black Jack Rocks	2
Kelp Gull	Calverts Lagoon	2
Kelp Gull	Charlotte Cove	1
Kelp Gull	Cremorne Beach	1
Kelp Gull	Crescent Bay	1

Kelp Gull	Curlew Island	1
Kelp Gull	Cygnet	1
Kelp Gull	Dennes Point	1
Kelp Gull	Double Rock	1
Kelp Gull	Dru Point	2
Kelp Gull	Dunalley	1
Kelp Gull	Five Mile Beach	2
Kelp Gull	Fortescue Bay	1
Kelp Gull	Fulham Point	1
Kelp Gull	Garden Island Creek	1
Kelp Gull	Gellibrand Point	1
Kelp Gull	Goat Bluff	1
Kelp Gull	Governor Island	2
Kelp Gull	Great Bay	1
Kelp Gull	Green Island	7
Kelp Gull	Grindstone Bay	6
Kelp Gull	Halfmoon Bay	1
Kelp Gull	Hog Island	3
Kelp Gull	Iron Pot	1
Kelp Gull	Isle of Caves	5
Kelp Gull	Kelly Islands	2
Kelp Gull	Lachlan Island	1
Kelp Gull	Lagoon Bay	1
Kelp Gull	Launderdale Coastline (Ralphs Bay)	1
Kelp Gull	Lighthouse Bay	1
Kelp Gull	Lisdillon Beach	1
Kelp Gull	Little Boomer	1
Kelp Gull	Little Spectacle Island	2
Kelp Gull	Little Swanport (lagoon mouth)	2
Kelp Gull	Long Bay Shoal	1
Kelp Gull	Long Spit	1
Kelp Gull	Lufra Cove	1
Kelp Gull	Marion Bay Bridge	2
Kelp Gull	Marion Beach	2
Kelp Gull	Maurouard Beach	1
Kelp Gull	Mays Beach	1
Kelp Gull	Middle Spectacle Island	1
Kelp Gull	Missionary Bay	1
Kelp Gull	Nine Mile Beach	3
Kelp Gull	Okehampton Bay	4
Kelp Gull	Orford Spit	3
Kelp Gull	Orielton Lagoon	2
Kelp Gull	Pipeclay Lagoon	2
Kelp Gull	Pirates Bay	4
Kelp Gull	Prion Beach	1
Kelp Gull	Ralphs Bay	3
Kelp Gull	Rheban	1

Kelp Gull	Riedle Bay	1
Kelp Gull	Roches Beach	2
Kelp Gull	Rocky Islet (south of Kelly Island)	1
Kelp Gull	Sandspit	1
Kelp Gull	Scamander River (river mouth)	1
Kelp Gull	Sloping Island	2
Kelp Gull	Sloping Reef	3
Kelp Gull	Snake Island	2
Kelp Gull	Snug Beach	2
Kelp Gull	South Arm Neck (Ralphs Bay Wildlife	8
Kelp Gull	Steels Beach	2
Kelp Gull	Stockyard Point	1
Kelp Gull	Suzie Island	1
Kelp Gull	The Neck	5
Kelp Gull	Triabunna	1
Kelp Gull	Trial Bay	3
Kelp Gull	Two Mile Beach	1
Kelp Gull	Two Tree Point	4
Kelp Gull	Valhalla Bay	1
Kelp Gull	Visscher Island	2
Kelp Gull	Water View Bird Sanctuary	5
Kelp Gull	White Rock Point	1
Lesser Sand Plover	Bird Point	1
Lesser Sand Plover	Cape Portland	5
Lesser Sand Plover	Five Islets	1
Lesser Sand Plover	Orielton Lagoon	1
Lesser Sand Plover	Shipwreck Point	1
Little Tern	Beaumaris Beach	4
Little Tern	Bird Point	1
Little Tern	Cowper Point	1
Little Tern	Friendly Beaches	1
Little Tern	Macleans Beach	1
Little Tern	Spike Bay	1
Little Tern	Steels Beach	3
Masked Lapwing	Abbotsbury Beach	1
Masked Lapwing	Adelaide Bay	3
Masked Lapwing	Adventure Bay Beach	6
Masked Lapwing	Arthur Beach	3
Masked Lapwing	Arthur River (river mouth)	1
Masked Lapwing	Austins Ferry Yacht	1
Masked Lapwing	Australia Point	2
Masked Lapwing	Badger Beach	3
Masked Lapwing	Bakers Beach	4
Masked Lapwing	Barilla Bay	1
Masked Lapwing	Beaumaris Beach	5
Masked Lapwing	Beedham Bay	1
Masked Lapwing	Below Pollys Bay	1

Masked Lapwing	Bird Point	1
Masked Lapwing	Black River Beach	1
Masked Lapwing	Bluff Point	1
Masked Lapwing	Boat Harbour	1
Masked Lapwing	Boomer Bay	1
Masked Lapwing	Bowen Bridge	1
Masked Lapwing	Break Yoke Beach	1
Masked Lapwing	Calverts Lagoon	5
Masked Lapwing	Cameron Bay	1
Masked Lapwing	Cameron Inlet	2
Masked Lapwing	Cape Portland	3
Masked Lapwing	City of Melbourne Bay	1
Masked Lapwing	Clear Lagoon	1
Masked Lapwing	Cloudy Beach	4
Masked Lapwing	Coningham Beach	2
Masked Lapwing	Crescent Bay	1
Masked Lapwing	Cygnet	1
Masked Lapwing	Dianas Beach	2
Masked Lapwing	Dowsings Point	1
Masked Lapwing	Dunckels Beach	4
Masked Lapwing	Elwick Bay	1
Masked Lapwing	Fisher Island	1
Masked Lapwing	Forwards & Picnic Beach	1
Masked Lapwing	Freers Beach	1
Masked Lapwing	Friendly Beaches	1
Masked Lapwing	Frying Pan	1
Masked Lapwing	Fulham Point	1
Masked Lapwing	Garden Cove	1
Masked Lapwing	Gardens Lagoon Beach	5
Masked Lapwing	Geological Feature	2
Masked Lapwing	George Town Reserve	2
Masked Lapwing	Granton	1
Masked Lapwing	Great Bay	2
Masked Lapwing	Green Point	1
Masked Lapwing	Green Point Beach	3
Masked Lapwing	Gun Street	1
Masked Lapwing	Horseshoe Bank	2
Masked Lapwing	Iron Creek	2
Masked Lapwing	Jordan River (river mouth)	2
Masked Lapwing	Kangaroo Bay Beach	1
Masked Lapwing	Kettering	1
Masked Lapwing	Killecrankie Bay	1
Masked Lapwing	Kirwans Beach	1
Masked Lapwing	Koomela Bay	1
Masked Lapwing	Lagoon Bay	1
Masked Lapwing	Launderdale Coastline (Ralphs Bay)	2
Masked Lapwing	Leith Foreshore	4

Masked Lapwing	Lillico Beach	1
Masked Lapwing	Lisdillon Beach	1
Masked Lapwing	Little Boomer	5
Masked Lapwing	Little Musselroe	4
Masked Lapwing	Little Swanport (lagoon mouth)	1
Masked Lapwing	Logans Lagoon	1
Masked Lapwing	Long Point	2
Masked Lapwing	Louisa Bay	2
Masked Lapwing	Macleans Beach	1
Masked Lapwing	Marion Bay Bridge	1
Masked Lapwing	Marion Beach	1
Masked Lapwing	Marshall Beach	1
Masked Lapwing	Melane Road	1
Masked Lapwing	Montague Island	1
Masked Lapwing	Montrose Basin	1
Masked Lapwing	Moorland Point	2
Masked Lapwing	Mortimer Bay	2
Masked Lapwing	Mosquito Inlet	1
Masked Lapwing	Moultling Lagoon	3
Masked Lapwing	Naracoopa Beach	1
Masked Lapwing	New Town Bay	1
Masked Lapwing	North East River (river mouth)	1
Masked Lapwing	North West Bay (old railway)	1
Masked Lapwing	Noyhener Beach	1
Masked Lapwing	Nye Bay	1
Masked Lapwing	Ocean Beach	3
Masked Lapwing	Okehampton Bay	8
Masked Lapwing	Orford Spit	3
Masked Lapwing	Orielton Causeway	1
Masked Lapwing	Orielton Lagoon	7
Masked Lapwing	Otago Bay	1
Masked Lapwing	Patriarch Inlet	3
Masked Lapwing	Pavilion Point	1
Masked Lapwing	Pebbly Bay	5
Masked Lapwing	Pebbly Beach	2
Masked Lapwing	Pelican Rocks	1
Masked Lapwing	Petrifaction Bay	1
Masked Lapwing	Pipeclay Lagoon	8
Masked Lapwing	Pirates Bay	3
Masked Lapwing	Policemans Point	6
Masked Lapwing	Port Sorell	1
Masked Lapwing	Prince of Wales Bay	1
Masked Lapwing	Pyramids	1
Masked Lapwing	Ralphs Bay	2
Masked Lapwing	Roaring Beach (Nubeena)	1
Masked Lapwing	Roaring Beach (Southport)	4
Masked Lapwing	Roches Beach	3

Masked Lapwing	Rocky Bay	1
Masked Lapwing	Safety Cove	1
Masked Lapwing	Samphire Corner	2
Masked Lapwing	Sandblow Bay	1
Masked Lapwing	Saundersons Road	1
Masked Lapwing	Scamander River (river mouth)	1
Masked Lapwing	Sea Elephant Inlet	2
Masked Lapwing	Seven Mile Beach (Anthony Beach)	1
Masked Lapwing	Seven Mile Beach (East end)	1
Masked Lapwing	Sewage Pond (St Helens)	1
Masked Lapwing	Shipwreck Point	1
Masked Lapwing	Sisters Beach	1
Masked Lapwing	Sloping Main	1
Masked Lapwing	Snug Beach	3
Masked Lapwing	South Arm Neck (Ralphs Bay Wildlife	6
Masked Lapwing	Steels Beach	3
Masked Lapwing	Stockyard Point	1
Masked Lapwing	Suzie Island	1
Masked Lapwing	Tea Tree Point	1
Masked Lapwing	The Neck	6
Masked Lapwing	Tomahawk Beach	1
Masked Lapwing	Triabunna	1
Masked Lapwing	Trial Bay	7
Masked Lapwing	Tuckers Arm	1
Masked Lapwing	Two Mile Beach	1
Masked Lapwing	Two Tree Point	8
Masked Lapwing	Watcombe/Penguin Beach	2
Masked Lapwing	Water View Bird Sanctuary	5
Masked Lapwing	Whitemark Beach	1
Masked Lapwing	Windermere Bay	3
Pacific Golden Plover	Barilla Bay	2
Pacific Golden Plover	Bird Point	1
Pacific Golden Plover	Cape Portland	5
Pacific Golden Plover	Foster Islands (west islet)	1
Pacific Golden Plover	George Town Reserve	1
Pacific Golden Plover	Lanoma Point	1
Pacific Golden Plover	Lisdillon Beach	1
Pacific Golden Plover	Little Musselroe	2
Pacific Golden Plover	Montague Island	2
Pacific Golden Plover	Moorland Point	8
Pacific Golden Plover	Musselroe	1
Pacific Golden Plover	North East Arm	1
Pacific Golden Plover	Orielton Causeway	1
Pacific Golden Plover	Orielton Lagoon	4
Pacific Golden Plover	Pipeclay Lagoon	1
Pacific Golden Plover	Seven Mile Beach (Anthony Beach)	1
Pacific Golden Plover	Wallaby Islands	1

Pacific Gull	Adelaide Bay	2
Pacific Gull	Adventure Bay Beach	7
Pacific Gull	Arthur Beach	5
Pacific Gull	Arthur River (river mouth)	1
Pacific Gull	Australia Point	2
Pacific Gull	Badger Beach	3
Pacific Gull	Bakers Beach	7
Pacific Gull	Barilla Bay	1
Pacific Gull	Barren Island	1
Pacific Gull	Bay of Fires	1
Pacific Gull	Baynes Island	2
Pacific Gull	Beaumaris Beach	18
Pacific Gull	Beerbarrel Beach	1
Pacific Gull	Below Pollys Bay	2
Pacific Gull	Big Green Island	1
Pacific Gull	Big Spectacle Island	3
Pacific Gull	Binalong Bay	11
Pacific Gull	Black River Beach	2
Pacific Gull	Blanche Point	1
Pacific Gull	Boat Harbour	1
Pacific Gull	Boomer Bay	1
Pacific Gull	Break Yoke Beach	3
Pacific Gull	Buttons Beach	1
Pacific Gull	Calverts Beach	1
Pacific Gull	Cameron Inlet	3
Pacific Gull	Cape Portland	2
Pacific Gull	City of Melbourne Bay	1
Pacific Gull	Cloudy Beach	3
Pacific Gull	Coningham Beach	1
Pacific Gull	Coswell & Piermont Beach	1
Pacific Gull	Cowper Point	1
Pacific Gull	Cox Bight	2
Pacific Gull	Cremorne Beach	1
Pacific Gull	Crescent Bay	1
Pacific Gull	Curlew Island	1
Pacific Gull	Deal Island	1
Pacific Gull	Denison Canal	1
Pacific Gull	Dennes Point	1
Pacific Gull	Dianas Basin	1
Pacific Gull	Dianas Beach	4
Pacific Gull	Double Rock	1
Pacific Gull	Duck Island	1
Pacific Gull	Dunalley	1
Pacific Gull	Dunckels Beach	3
Pacific Gull	Eagle Point Beach	2
Pacific Gull	East Cove	5
Pacific Gull	East Inlet	1



Pacific Gull	Fisher Reef	1
Pacific Gull	Five Mile Beach	2
Pacific Gull	Fortescue Bay	2
Pacific Gull	Forwards & Picnic Beach	4
Pacific Gull	Foster Islands (east islet)	2
Pacific Gull	Foster Islands (west islet)	1
Pacific Gull	Friendly Beaches	2
Pacific Gull	Fulham Point	1
Pacific Gull	Garden Cove	2
Pacific Gull	Gardens Lagoon Beach	3
Pacific Gull	George Town Reserve	1
Pacific Gull	Georges Bay	2
Pacific Gull	Governor Island	1
Pacific Gull	Great Bay	2
Pacific Gull	Green Island	2
Pacific Gull	Green Point Beach	2
Pacific Gull	Halfmoon Bay	1
Pacific Gull	Hazards Beach	1
Pacific Gull	Hog Island	3
Pacific Gull	Hope Beach	1
Pacific Gull	Horseshoe Bank	7
Pacific Gull	Howie Island	1
Pacific Gull	Iron Pot	1
Pacific Gull	Isle of Caves	2
Pacific Gull	Kangaroo Bay Beach	1
Pacific Gull	Kelly Islands	1
Pacific Gull	Kirwans Beach	6
Pacific Gull	Lachlan Island	1
Pacific Gull	Lady Barron	1
Pacific Gull	Lagoon Beach	1
Pacific Gull	Launderdale Coastline (Ralphs Bay)	1
Pacific Gull	Leith Foreshore	3
Pacific Gull	Lewisham	1
Pacific Gull	Lighthouse Bay	1
Pacific Gull	Lillico Beach	1
Pacific Gull	Limekline Point	1
Pacific Gull	Lisdillon Beach	2
Pacific Gull	Little Boomer	1
Pacific Gull	Little Musselroe	3
Pacific Gull	Little Swanport (lagoon mouth)	4
Pacific Gull	Long Bay Shoal	1
Pacific Gull	Long Point	1
Pacific Gull	Louisa Bay	1
Pacific Gull	Low Head	1
Pacific Gull	Lufra Cove	1
Pacific Gull	Maatsuyker Island	2
Pacific Gull	Macleans Beach	1

Pacific Gull	Marion Bay Bridge	2
Pacific Gull	Marion Beach	4
Pacific Gull	Marshall Beach	1
Pacific Gull	Maurouard Beach	8
Pacific Gull	Mays Beach	1
Pacific Gull	Meredith River (river mouth)	3
Pacific Gull	Middle Spectacle Island	3
Pacific Gull	Midway Point Beach	2
Pacific Gull	Moriarty Beach	1
Pacific Gull	Moulting Lagoon	3
Pacific Gull	Muir's Beach	1
Pacific Gull	Mulcahy Bay	1
Pacific Gull	Naracoopa Beach	1
Pacific Gull	Nine Mile Beach	8
Pacific Gull	North East Arm	2
Pacific Gull	Noyhener Beach	1
Pacific Gull	Nye Bay	1
Pacific Gull	Ocean Beach	1
Pacific Gull	Okehampton Bay	8
Pacific Gull	Orford Spit	3
Pacific Gull	Osmiridium Beach	1
Pacific Gull	Patriarch Inlet	2
Pacific Gull	Pebbly Bay	4
Pacific Gull	Pebbly Beach	1
Pacific Gull	Petrifaction Bay	2
Pacific Gull	Pirates Bay	6
Pacific Gull	Policemans Point	10
Pacific Gull	Port Sorell	1
Pacific Gull	Prion Beach	1
Pacific Gull	Ralphs Bay	2
Pacific Gull	Rheban	1
Pacific Gull	Riedle Bay	1
Pacific Gull	Roaring Beach (Southport)	6
Pacific Gull	Roches Beach	4
Pacific Gull	Rocky Bay	2
Pacific Gull	Samphire Corner	2
Pacific Gull	Sandblow Bay	1
Pacific Gull	Sandspit	2
Pacific Gull	Scamander River (river mouth)	2
Pacific Gull	Sea Elephant Inlet	2
Pacific Gull	Seven Mile Beach	4
Pacific Gull	Seven Mile Beach (Anthony Beach)	1
Pacific Gull	Shark Bay	1
Pacific Gull	Sisters Beach	2
Pacific Gull	Sloping Island	5
Pacific Gull	Sloping Main	2
Pacific Gull	Snake Island	2

Pacific Gull	Snug Beach	1
Pacific Gull	Soldiers Beach	1
Pacific Gull	South Arm Neck (Ralphs Bay Wildlife	5
Pacific Gull	Steels Beach	11
Pacific Gull	Stockyard Point	1
Pacific Gull	Surprise Bay	2
Pacific Gull	Tatlows Beach	1
Pacific Gull	Taylors Beach	1
Pacific Gull	Tea Tree Point	1
Pacific Gull	The Gulch	1
Pacific Gull	The Neck	6
Pacific Gull	Towterer Beach	3
Pacific Gull	Trial Bay	9
Pacific Gull	Two Mile Beach	1
Pacific Gull	Two Tree Point	4
Pacific Gull	Un named 2	1
Pacific Gull	Valhalla Bay	2
Pacific Gull	Visscher Island	1
Pacific Gull	Watcombe/Penguin Beach	1
Pacific Gull	Water View Bird Sanctuary	2
Pacific Gull	West Cove	1
Pacific Gull	Whitemark Beach	1
Pacific Gull	Wilson's Lagoon	1
Pacific Gull	Winter Cove	1
Pacific Gull	Wrinklers Beach	1
Pied Oystercatcher	Adelaide Bay	3
Pied Oystercatcher	Adventure Bay Beach	3
Pied Oystercatcher	Arthur Beach	5
Pied Oystercatcher	Arthur River (river mouth)	1
Pied Oystercatcher	Australia Point	2
Pied Oystercatcher	Badger Beach	3
Pied Oystercatcher	Bakers Beach	7
Pied Oystercatcher	Barilla Bay	5
Pied Oystercatcher	Barren Island	1
Pied Oystercatcher	Bay of Fires	2
Pied Oystercatcher	Beaumaris Beach	19
Pied Oystercatcher	Beerbarrel Beach	1
Pied Oystercatcher	Bell Buoy	1
Pied Oystercatcher	Below Pollys Bay	2
Pied Oystercatcher	Big Green Island	1
Pied Oystercatcher	Big Spectacle Island	4
Pied Oystercatcher	Binalong Bay	2
Pied Oystercatcher	Bird Point	1
Pied Oystercatcher	Black River Beach	2
Pied Oystercatcher	Blanche Point	4
Pied Oystercatcher	Bloodstone Beach	1
Pied Oystercatcher	Bluff Point	1

Pied Oystercatcher	Bluff Road	1
Pied Oystercatcher	Boomer Bay	1
Pied Oystercatcher	Bowen Bridge	1
Pied Oystercatcher	Break Yoke Beach	1
Pied Oystercatcher	Bridport	1
Pied Oystercatcher	Bryans Beach	1
Pied Oystercatcher	Buttons Beach	1
Pied Oystercatcher	Calverts Beach	1
Pied Oystercatcher	Cameron Bay	1
Pied Oystercatcher	Cameron Inlet	3
Pied Oystercatcher	Cape Portland	2
Pied Oystercatcher	Cloudy Bay	1
Pied Oystercatcher	Cloudy Beach	4
Pied Oystercatcher	Coningham Beach	1
Pied Oystercatcher	Coswell & Piermont Beach	1
Pied Oystercatcher	Cowper Point	1
Pied Oystercatcher	Cox Bight	2
Pied Oystercatcher	Cremorne Beach	1
Pied Oystercatcher	Crescent Bay	1
Pied Oystercatcher	Cygnets	1
Pied Oystercatcher	Darlington Bay	1
Pied Oystercatcher	Dianas Basin	1
Pied Oystercatcher	Dianas Beach	4
Pied Oystercatcher	Dowsings Point	1
Pied Oystercatcher	Dunckels Beach	6
Pied Oystercatcher	East Cove	1
Pied Oystercatcher	Elwick Bay	1
Pied Oystercatcher	Five Islets	1
Pied Oystercatcher	Five Mile Beach	2
Pied Oystercatcher	Fortescue Bay	4
Pied Oystercatcher	Forwards & Picnic Beach	11
Pied Oystercatcher	Four Mile Beach	1
Pied Oystercatcher	Friendly Beaches	4
Pied Oystercatcher	Fulham Point	1
Pied Oystercatcher	Garden Cove	3
Pied Oystercatcher	Gardens Lagoon Beach	5
Pied Oystercatcher	Gellibrand Point	1
Pied Oystercatcher	George Town Reserve	4
Pied Oystercatcher	Georges Bay	1
Pied Oystercatcher	Goat Bluff	1
Pied Oystercatcher	Gorringes Beach	1
Pied Oystercatcher	Governor Island	1
Pied Oystercatcher	Great Bay	2
Pied Oystercatcher	Green Point Beach	5
Pied Oystercatcher	Grindstone Bay	8
Pied Oystercatcher	Gunters Bay	1
Pied Oystercatcher	Halfmoon Bay	1

Pied Oystercatcher	Hazard Bay	1
Pied Oystercatcher	Hazards Beach	1
Pied Oystercatcher	Horseshoe Bank	6
Pied Oystercatcher	Iron Creek	2
Pied Oystercatcher	Iron Pot	1
Pied Oystercatcher	Isle of Caves	3
Pied Oystercatcher	Kangaroo Bay Beach	1
Pied Oystercatcher	Kangaroo Island	1
Pied Oystercatcher	Kirwans Beach	5
Pied Oystercatcher	Lagoon Bay	1
Pied Oystercatcher	Lagoon Beach	1
Pied Oystercatcher	Lauderdale Coastline (Ralphs Bay)	6
Pied Oystercatcher	Leith Foreshore	1
Pied Oystercatcher	Lighthouse Bay	6
Pied Oystercatcher	Lillico Beach	1
Pied Oystercatcher	Lisdillon Beach	12
Pied Oystercatcher	Little Boomer	2
Pied Oystercatcher	Little Musselroe	6
Pied Oystercatcher	Little Spectacle Island	2
Pied Oystercatcher	Little Swanport (lagoon mouth)	1
Pied Oystercatcher	Logans Lagoon	1
Pied Oystercatcher	Long Bay Shoal	1
Pied Oystercatcher	Long Point	2
Pied Oystercatcher	Long Spit	1
Pied Oystercatcher	Louisa Bay	1
Pied Oystercatcher	Low Head	2
Pied Oystercatcher	Marion Bay Bridge	3
Pied Oystercatcher	Marion Beach	5
Pied Oystercatcher	Marshall Beach	1
Pied Oystercatcher	Mary Ann Bay	1
Pied Oystercatcher	Maurouard Beach	8
Pied Oystercatcher	Meredith River (river mouth)	2
Pied Oystercatcher	Middle Spectacle Island	3
Pied Oystercatcher	Missionary Bay	1
Pied Oystercatcher	Montague Island	1
Pied Oystercatcher	Moorland Point	11
Pied Oystercatcher	Moreys Bay	1
Pied Oystercatcher	Moriarty Beach	1
Pied Oystercatcher	Mortimer Bay	3
Pied Oystercatcher	Mosquito Inlet	1
Pied Oystercatcher	Moulting Lagoon	3
Pied Oystercatcher	Mulcahy Bay	3
Pied Oystercatcher	Musselroe	2
Pied Oystercatcher	Nelson Bay	1
Pied Oystercatcher	Nine Mile Beach	8
Pied Oystercatcher	North East Arm	2
Pied Oystercatcher	North East River (river mouth)	1

Pied Oystercatcher	North West Bay (old railway)	3
Pied Oystercatcher	North West Bay (river mouth)	1
Pied Oystercatcher	Noyhener Beach	1
Pied Oystercatcher	Nye Bay	1
Pied Oystercatcher	Ocean Beach	6
Pied Oystercatcher	Okehampton Bay	11
Pied Oystercatcher	Orford Spit	7
Pied Oystercatcher	Orielton Causeway	1
Pied Oystercatcher	Orielton Lagoon	5
Pied Oystercatcher	Patriarch Inlet	3
Pied Oystercatcher	Pebbly Bay	5
Pied Oystercatcher	Pebbly Beach	1
Pied Oystercatcher	Pelican Rocks	2
Pied Oystercatcher	Petrifaction Bay	1
Pied Oystercatcher	Pipeclay Lagoon	10
Pied Oystercatcher	Pirates Bay	4
Pied Oystercatcher	Policemans Point	10
Pied Oystercatcher	Port Sorell	1
Pied Oystercatcher	Pot Boil	1
Pied Oystercatcher	Prince of Wales Bay	1
Pied Oystercatcher	Prion Beach	1
Pied Oystercatcher	Ralphs Bay	7
Pied Oystercatcher	Ranson's Beach	2
Pied Oystercatcher	Rheban	1
Pied Oystercatcher	Riedle Bay	1
Pied Oystercatcher	Roaring Beach (Southport)	4
Pied Oystercatcher	Roches Beach	1
Pied Oystercatcher	Rocky Bay	1
Pied Oystercatcher	Roydon Island	1
Pied Oystercatcher	Safety Cove	1
Pied Oystercatcher	Saltworks Beach	2
Pied Oystercatcher	Samphire Corner	3
Pied Oystercatcher	Sandspit	2
Pied Oystercatcher	Sandspit Point	1
Pied Oystercatcher	Scamander River (river mouth)	1
Pied Oystercatcher	Sea Elephant Inlet	2
Pied Oystercatcher	Seven Mile Beach	4
Pied Oystercatcher	Seven Mile Beach (Anthony Beach)	1
Pied Oystercatcher	Seven Mile Beach (East end)	1
Pied Oystercatcher	Sewage Pond (St Helens)	1
Pied Oystercatcher	Shark Bay	1
Pied Oystercatcher	Shelly Beach	1
Pied Oystercatcher	Shipwreck Point	2
Pied Oystercatcher	Shoal Bay & Chinamans Bay	1
Pied Oystercatcher	Silver Water Park	1
Pied Oystercatcher	Simpson's Bay	3
Pied Oystercatcher	Sisters Beach	1

Pied Oystercatcher	Sloping Island	2
Pied Oystercatcher	Sloping Main	1
Pied Oystercatcher	Snake Island	1
Pied Oystercatcher	Soldiers Beach	1
Pied Oystercatcher	Sorell	2
Pied Oystercatcher	South Arm Neck (Ralphs Bay Wildlife	11
Pied Oystercatcher	South Cape Bay	1
Pied Oystercatcher	Spike Bay	1
Pied Oystercatcher	Squeeking Pt mud banks	1
Pied Oystercatcher	Steels Beach	10
Pied Oystercatcher	Stephans Bay	1
Pied Oystercatcher	Stinking Bay	1
Pied Oystercatcher	Stumpy Bay	1
Pied Oystercatcher	Syndicate Lagoon	1
Pied Oystercatcher	Taylor's Beach	1
Pied Oystercatcher	Tea Tree Point	1
Pied Oystercatcher	The Neck	7
Pied Oystercatcher	Towterer Beach	3
Pied Oystercatcher	Triabunna	1
Pied Oystercatcher	Trial Bay	7
Pied Oystercatcher	Two Mile Beach	1
Pied Oystercatcher	Two Tree Point	8
Pied Oystercatcher	Un named 1 (Bruny Is)	2
Pied Oystercatcher	Un named 2	1
Pied Oystercatcher	Valhalla Bay	2
Pied Oystercatcher	Wallaby Islands	1
Pied Oystercatcher	Watcombe/Penguin Beach	1
Pied Oystercatcher	Water View Bird Sanctuary	6
Pied Oystercatcher	Waterhouse	2
Pied Oystercatcher	Welcome River (river mouth)	1
Pied Oystercatcher	West Inlet	1
Pied Oystercatcher	Windermere Bay	1
Pied Oystercatcher	Winter Cove	1
Pied Oystercatcher	Wreck Bay Beach	1
Pied Oystercatcher	Wrinklers Beach	2
Red Knot	Bird Point	1
Red Knot	Calverts Lagoon	1
Red Knot	Five Islets	1
Red Knot	George Town Reserve	2
Red Knot	Musselroe	1
Red Knot	Orielton Causeway	1
Red Knot	Shipwreck Point	1
Red-capped Plover	Arthur Beach	5
Red-capped Plover	Australia Point	2
Red-capped Plover	Barilla Bay	6
Red-capped Plover	Bay of Fires	1
Red-capped Plover	Beaumaris Beach	16

Red-capped Plover	Below Pollys Bay	2
Red-capped Plover	Bird Point	1
Red-capped Plover	Blanche Point	6
Red-capped Plover	Bluff Road	1
Red-capped Plover	Break Yoke Beach	4
Red-capped Plover	Calverts Lagoon	4
Red-capped Plover	Cape Portland	3
Red-capped Plover	Cloudy Beach	1
Red-capped Plover	Dianas Beach	3
Red-capped Plover	Dora Point	1
Red-capped Plover	Forwards & Picnic Beach	11
Red-capped Plover	Friendly Beaches	1
Red-capped Plover	Gardens Lagoon Beach	4
Red-capped Plover	George Town Reserve	3
Red-capped Plover	Great Bay	2
Red-capped Plover	Green Point Beach	2
Red-capped Plover	Grindstone Bay	6
Red-capped Plover	Hazard Bay	1
Red-capped Plover	Horseshoe Bank	6
Red-capped Plover	Iron Creek	1
Red-capped Plover	Kangaroo Bay Beach	1
Red-capped Plover	Kangaroo Island	1
Red-capped Plover	Lauderdale Coastline (Ralphs Bay)	4
Red-capped Plover	Leith Foreshore	1
Red-capped Plover	Lillico Beach	1
Red-capped Plover	Lisdillon Beach	9
Red-capped Plover	Little Boomer	2
Red-capped Plover	Little Musselroe	3
Red-capped Plover	Little Swanport (lagoon mouth)	1
Red-capped Plover	Long Point	1
Red-capped Plover	Low Head	1
Red-capped Plover	Marion Bay Bridge	1
Red-capped Plover	Marion Beach	2
Red-capped Plover	Maurouard Beach	4
Red-capped Plover	Meredith River (river mouth)	7
Red-capped Plover	Montague Island	1
Red-capped Plover	Moorland Point	10
Red-capped Plover	Moulting Lagoon	2
Red-capped Plover	Musselroe	1
Red-capped Plover	Nine Mile Beach	6
Red-capped Plover	North East Arm	1
Red-capped Plover	Ocean Beach	3
Red-capped Plover	Okehampton Bay	11
Red-capped Plover	Orford Spit	6
Red-capped Plover	Orielton Lagoon	6
Red-capped Plover	Patriarch Inlet	1
Red-capped Plover	Pebbly Beach	1



Red-capped Plover	Petrifaction Bay	1
Red-capped Plover	Pipeclay Lagoon	8
Red-capped Plover	Policemans Point	8
Red-capped Plover	Ralphs Bay	2
Red-capped Plover	Rheban	1
Red-capped Plover	Saltworks Beach	2
Red-capped Plover	Sandspit	2
Red-capped Plover	Seven Mile Beach (Anthony Beach)	1
Red-capped Plover	Seven Mile Beach (East end)	1
Red-capped Plover	Shipwreck Point	2
Red-capped Plover	Simpson's Bay	1
Red-capped Plover	South Arm Neck (Ralphs Bay Wildlife	5
Red-capped Plover	Steels Beach	11
Red-capped Plover	Stumpy Bay	1
Red-capped Plover	The Neck	2
Red-capped Plover	Tuckers Arm	1
Red-capped Plover	Two Mile Beach	1
Red-capped Plover	Wallaby Islands	1
Red-capped Plover	Waterhouse	1
Red-capped Plover	Wrinklers Beach	1
Red-necked Stint	Arthur River (river mouth)	1
Red-necked Stint	Barilla Bay	4
Red-necked Stint	Bay of Fires	1
Red-necked Stint	Beaumaris Beach	2
Red-necked Stint	Bird Point	1
Red-necked Stint	Bluff Road	1
Red-necked Stint	Calverts Lagoon	6
Red-necked Stint	Cameron Inlet	2
Red-necked Stint	Cape Portland	5
Red-necked Stint	Clear Lagoon	1
Red-necked Stint	Cowper Point	1
Red-necked Stint	Dianas Beach	1
Red-necked Stint	Fortescue Bay	1
Red-necked Stint	George Town Reserve	4
Red-necked Stint	Grindstone Bay	3
Red-necked Stint	Horseshoe Bank	2
Red-necked Stint	Lanoma Point	1
Red-necked Stint	Lauderdale Coastline (Ralphs Bay)	1
Red-necked Stint	Lisdillon Beach	9
Red-necked Stint	Little Boomer	3
Red-necked Stint	Little Musselroe	5
Red-necked Stint	Little Swanport (lagoon mouth)	1
Red-necked Stint	Marion Beach	1
Red-necked Stint	Meredith River (river mouth)	5
Red-necked Stint	Montague Island	1
Red-necked Stint	Moorland Point	2
Red-necked Stint	Musselroe	2

Red-necked Stint	Nine Mile Beach	3
Red-necked Stint	North East Arm	2
Red-necked Stint	North East River (river mouth)	1
Red-necked Stint	Ocean Beach	2
Red-necked Stint	Okehampton Bay	1
Red-necked Stint	Orford Spit	1
Red-necked Stint	Orielton Causeway	1
Red-necked Stint	Orielton Lagoon	6
Red-necked Stint	Patriarch Inlet	2
Red-necked Stint	Pipeclay Lagoon	8
Red-necked Stint	Policemans Point	7
Red-necked Stint	Ralphs Bay	2
Red-necked Stint	Rheban	1
Red-necked Stint	Sandspit	2
Red-necked Stint	Scamander River (river mouth)	2
Red-necked Stint	Seven Mile Beach (Anthony Beach)	1
Red-necked Stint	Sewage Point Spit	1
Red-necked Stint	Shipwreck Point	1
Red-necked Stint	South Arm Neck (Ralphs Bay Wildlife)	5
Red-necked Stint	Steels Beach	2
Red-necked Stint	Syndicate Lagoon	1
Red-necked Stint	The Neck	1
Red-necked Stint	Tregaron Lagoons	1
Red-necked Stint	Two Mile Beach	1
Red-necked Stint	Un named 1 (Bruny Is)	1
Red-necked Stint	Wallaby Islands	1
Ruddy Turnstone	Arthur Beach	4
Ruddy Turnstone	Bay of Fires	1
Ruddy Turnstone	Beerbarrel Beach	1
Ruddy Turnstone	Below Pollys Bay	2
Ruddy Turnstone	Bird Point	1
Ruddy Turnstone	Break Yoke Beach	1
Ruddy Turnstone	Cape Portland	4
Ruddy Turnstone	Cowper Point	1
Ruddy Turnstone	Fisher Reef	1
Ruddy Turnstone	Five Islets	1
Ruddy Turnstone	George Town Reserve	4
Ruddy Turnstone	Georges Bay	1
Ruddy Turnstone	Green Island	1
Ruddy Turnstone	Kangaroo Island	1
Ruddy Turnstone	Little Musselroe	7
Ruddy Turnstone	Low Head	1
Ruddy Turnstone	Montague Island	1
Ruddy Turnstone	Moorland Point	15
Ruddy Turnstone	Musselroe	1
Ruddy Turnstone	Nelson Bay	1
Ruddy Turnstone	Patriarch Inlet	2

Ruddy Turnstone	Pipeclay Lagoon	1
Ruddy Turnstone	Policemans Point	9
Ruddy Turnstone	Seven Mile Beach (Anthony Beach)	1
Ruddy Turnstone	Seven Mile Beach (East end)	1
Ruddy Turnstone	Shipwreck Point	1
Ruddy Turnstone	Stumpy Bay	1
Sanderling	Bay of Fires	1
Sanderling	Bird Point	1
Sanderling	Blanche Point	3
Sanderling	Dianas Beach	2
Sanderling	Friendly Beaches	1
Sanderling	Maurouard Beach	4
Sanderling	Ocean Beach	1
Sanderling	Policemans Point	6
Sanderling	Seven Mile Beach (Anthony Beach)	1
Sanderling	Shipwreck Point	1
Sanderling	Steels Beach	6
Sharp-tailed Sandpiper	Break Yoke Beach	1
Sharp-tailed Sandpiper	Cape Portland	1
Sharp-tailed Sandpiper	Cowper Point	1
Sharp-tailed Sandpiper	Little Musselroe	2
Sharp-tailed Sandpiper	Logans Lagoon	1
Sharp-tailed Sandpiper	Montague Island	1
Sharp-tailed Sandpiper	Ocean Beach	1
Sharp-tailed Sandpiper	Pebbly Beach	1
Sharp-tailed Sandpiper	Policemans Point	1
Sharp-tailed Sandpiper	Seven Mile Beach (Anthony Beach)	1
Silver Gull	Abbotsbury Beach	1
Silver Gull	Adelaide Bay	1
Silver Gull	Adventure Bay Beach	8
Silver Gull	Arthur Beach	5
Silver Gull	Arthur River (river mouth)	1
Silver Gull	Australia Point	2
Silver Gull	Badger Beach	3
Silver Gull	Bakers Beach	8
Silver Gull	Barren Island	1
Silver Gull	Bay of Fires	1
Silver Gull	Baynes Island	1
Silver Gull	Beaumaris Beach	21
Silver Gull	Beerbarrel Beach	1
Silver Gull	Below Pollys Bay	1
Silver Gull	Big Spectacle Island	3
Silver Gull	Binalong Bay	15
Silver Gull	Black River Beach	2
Silver Gull	Blanche Point	2
Silver Gull	Bloodstone Beach	1
Silver Gull	Bluff Point	1

Silver Gull	Boat Harbour	1
Silver Gull	Boomer Bay	1
Silver Gull	Break Yoke Beach	3
Silver Gull	Buttons Beach	1
Silver Gull	Calverts Beach	1
Silver Gull	Cameron Bay	2
Silver Gull	Cameron Inlet	1
Silver Gull	Cape Deliverance	1
Silver Gull	City of Melbourne Bay	1
Silver Gull	Cloudy Beach	5
Silver Gull	Coffin Bay	1
Silver Gull	Coningham Beach	2
Silver Gull	Connelly's	1
Silver Gull	Cornelian Bay	2
Silver Gull	Cowper Point	1
Silver Gull	Cox Bight	1
Silver Gull	Cremorne Beach	1
Silver Gull	Crescent Bay	1
Silver Gull	Curlew Island	1
Silver Gull	Darlington Bay	1
Silver Gull	Deal Island	1
Silver Gull	Denison Canal	1
Silver Gull	Dennes Point	1
Silver Gull	Dianas Basin	1
Silver Gull	Dianas Beach	5
Silver Gull	Dowsings Point	1
Silver Gull	Dunckels Beach	3
Silver Gull	Eagle Point Beach	1
Silver Gull	East Cove	6
Silver Gull	Fisher Island	1
Silver Gull	Fisher Reef	2
Silver Gull	Five Mile Beach	1
Silver Gull	Fortescue Bay	4
Silver Gull	Forwards & Picnic Beach	7
Silver Gull	Foster Islands (east islet)	1
Silver Gull	Foster Islands (west islet)	1
Silver Gull	Four Mile Beach	1
Silver Gull	Friendly Beaches	5
Silver Gull	Fulham Point	1
Silver Gull	Garden Cove	6
Silver Gull	Gardens Lagoon Beach	5
Silver Gull	Gellibrand Point	1
Silver Gull	George Town Reserve	1
Silver Gull	Georges Bay	1
Silver Gull	Governor Island	1
Silver Gull	Granite Beach	1
Silver Gull	Granton	1

Silver Gull	Great Bay	2
Silver Gull	Green Island	5
Silver Gull	Green Point	1
Silver Gull	Green Point Beach	5
Silver Gull	Grindstone Bay	9
Silver Gull	Gunters Bay	1
Silver Gull	Halfmoon Bay	1
Silver Gull	Hazard Bay	1
Silver Gull	Hog Island	3
Silver Gull	Hope Beach	1
Silver Gull	Horseshoe Bank	6
Silver Gull	Iron Pot	1
Silver Gull	Isle of Caves	5
Silver Gull	Kelly Islands	1
Silver Gull	Kirwans Beach	6
Silver Gull	Lachlan Island	1
Silver Gull	Lady Barron	1
Silver Gull	Lagoon Bay	1
Silver Gull	Lagoon Beach	1
Silver Gull	Lauderdale Coastline (Ralphs Bay)	1
Silver Gull	Leith Foreshore	4
Silver Gull	Lighthouse Bay	5
Silver Gull	Lillico Beach	1
Silver Gull	Lisdillon Beach	2
Silver Gull	Little Boomer	1
Silver Gull	Little Musselroe	5
Silver Gull	Little Spectacle Island	3
Silver Gull	Little Swanport (lagoon mouth)	1
Silver Gull	Long Bay Shoal	1
Silver Gull	Long Point	1
Silver Gull	Low Head	1
Silver Gull	Lowestoft Bay	2
Silver Gull	Lufra Cove	1
Silver Gull	Maatsuyker Island	1
Silver Gull	Marion Bay Bridge	2
Silver Gull	Marion Beach	4
Silver Gull	Marshall Beach	1
Silver Gull	Mary Ann Bay	1
Silver Gull	Maurouard Beach	7
Silver Gull	Mays Beach	1
Silver Gull	Melane Road	2
Silver Gull	Meredith River (river mouth)	1
Silver Gull	Middle Spectacle Island	1
Silver Gull	Midway Point Beach	2
Silver Gull	Moriarty Beach	1
Silver Gull	Moulting Lagoon	3
Silver Gull	Muir's Beach	1

Silver Gull	Mulcahy Bay	3
Silver Gull	Naracoopa Beach	1
Silver Gull	Nelson Bay	1
Silver Gull	Nine Mile Beach	6
Silver Gull	North East Arm	1
Silver Gull	Noyhener Beach	1
Silver Gull	Nye Bay	1
Silver Gull	Ocean Beach	6
Silver Gull	Okehampton Bay	8
Silver Gull	Opossum Bay	1
Silver Gull	Orford Spit	4
Silver Gull	Orielton Causeway	2
Silver Gull	Orielton Lagoon	4
Silver Gull	Osmiridium Beach	1
Silver Gull	Patriarch Inlet	1
Silver Gull	Pebbly Bay	5
Silver Gull	Pebbly Beach	2
Silver Gull	Petrifaction Bay	1
Silver Gull	Pigeon Holes	1
Silver Gull	Pipeclay Lagoon	4
Silver Gull	Pirates Bay	6
Silver Gull	Policemans Point	10
Silver Gull	Port Latta	1
Silver Gull	Port Sorell	1
Silver Gull	Pot Boil	1
Silver Gull	Prion Beach	1
Silver Gull	Ralphs Bay	4
Silver Gull	Raspins Beach	1
Silver Gull	Rebeca Beach	1
Silver Gull	Rheban	1
Silver Gull	Riedle Bay	1
Silver Gull	Roaring Beach (Nubeena)	1
Silver Gull	Roaring Beach (Southport)	6
Silver Gull	Roches Beach	5
Silver Gull	Safety Cove	1
Silver Gull	Saltworks Beach	1
Silver Gull	Samphire Corner	1
Silver Gull	Sandblow Bay	1
Silver Gull	Sandspit	2
Silver Gull	Scamander River (river mouth)	3
Silver Gull	Sea Elephant Inlet	2
Silver Gull	Seven Mile Beach	4
Silver Gull	Shark Bay	2
Silver Gull	Shelly Beach	1
Silver Gull	Shipwreck Point	1
Silver Gull	Shoal Bay & Chinamans Bay	1
Silver Gull	Sisters Beach	2

Silver Gull	Sloping Island	3
Silver Gull	Sloping Main	1
Silver Gull	Sloping Reef	4
Silver Gull	Snake Island	1
Silver Gull	Snug Beach	4
Silver Gull	Soldiers Beach	1
Silver Gull	South Arm Neck (Ralphs Bay Wildlife	5
Silver Gull	South Cape Bay	4
Silver Gull	Squeeking Pt mud banks	1
Silver Gull	Steels Beach	10
Silver Gull	Stinking Bay	1
Silver Gull	Stockyard Point	1
Silver Gull	Surprise Bay	2
Silver Gull	Suzie Island	1
Silver Gull	Syndicate Lagoon	1
Silver Gull	Taylors Beach	1
Silver Gull	Tea Tree Point	1
Silver Gull	The Neck	8
Silver Gull	Towterer Beach	3
Silver Gull	Triabunna	1
Silver Gull	Trial Bay	9
Silver Gull	Two Mile Beach	1
Silver Gull	Two Tree Point	8
Silver Gull	Valhalla Bay	1
Silver Gull	Visscher Island	3
Silver Gull	Watcombe/Penguin Beach	2
Silver Gull	Water View Bird Sanctuary	6
Silver Gull	West Cove	1
Silver Gull	West Inlet	1
Silver Gull	Wilson's Lagoon	1
Silver Gull	Wreck Bay Beach	1
Silver Gull	Wrinklers Beach	2
Sooty Oystercatcher	Adelaide Bay	3
Sooty Oystercatcher	Adventure Bay Beach	2
Sooty Oystercatcher	Arthur River (river mouth)	1
Sooty Oystercatcher	Australia Point	2
Sooty Oystercatcher	Bagot Point (Nine Mile Beach)	1
Sooty Oystercatcher	Bakers Beach	7
Sooty Oystercatcher	Baynes Island	1
Sooty Oystercatcher	Beaumaris Beach	2
Sooty Oystercatcher	Beerbarrel Beach	1
Sooty Oystercatcher	Bell Buoy	1
Sooty Oystercatcher	Below Pollys Bay	2
Sooty Oystercatcher	Big Green Island	1
Sooty Oystercatcher	Big Spectacle Island	2
Sooty Oystercatcher	Bird Point	1
Sooty Oystercatcher	Black Jack Rocks	2

Sooty Oystercatcher	Black River Beach	1
Sooty Oystercatcher	Bluff Road	1
Sooty Oystercatcher	Boat Harbour	1
Sooty Oystercatcher	Boobyalla Reserve	1
Sooty Oystercatcher	Break Yoke Beach	2
Sooty Oystercatcher	Cape Deliverance	1
Sooty Oystercatcher	Cape Portland	3
Sooty Oystercatcher	City of Melbourne Bay	1
Sooty Oystercatcher	Cloudy Beach	3
Sooty Oystercatcher	Coffin Bay	1
Sooty Oystercatcher	Cowper Point	1
Sooty Oystercatcher	Cox Bight	1
Sooty Oystercatcher	Curlew Island	1
Sooty Oystercatcher	Deal Island	1
Sooty Oystercatcher	Dianas Beach	2
Sooty Oystercatcher	East Cove	1
Sooty Oystercatcher	East Inlet	1
Sooty Oystercatcher	Fisher Reef	2
Sooty Oystercatcher	Five Mile Beach	2
Sooty Oystercatcher	Forwards & Picnic Beach	8
Sooty Oystercatcher	Foster Islands (east islet)	1
Sooty Oystercatcher	Foster Islands (west islet)	1
Sooty Oystercatcher	Freers Beach	1
Sooty Oystercatcher	Garden Cove	3
Sooty Oystercatcher	Gardens Lagoon Beach	2
Sooty Oystercatcher	Gellibrand Point	1
Sooty Oystercatcher	George Town Reserve	2
Sooty Oystercatcher	Governor Island	1
Sooty Oystercatcher	Great Bay	1
Sooty Oystercatcher	Green Island	6
Sooty Oystercatcher	Green Point Beach	2
Sooty Oystercatcher	Gunters Bay	1
Sooty Oystercatcher	Hazard Bay	1
Sooty Oystercatcher	Hog Island	2
Sooty Oystercatcher	Horseshoe Bank	2
Sooty Oystercatcher	Howie Island	1
Sooty Oystercatcher	Iron Creek	2
Sooty Oystercatcher	Iron Pot	1
Sooty Oystercatcher	Isle of Caves	1
Sooty Oystercatcher	Kangaroo Bay Beach	1
Sooty Oystercatcher	Kangaroo Island	1
Sooty Oystercatcher	Killecrankie Bay	1
Sooty Oystercatcher	Lachlan Island	1
Sooty Oystercatcher	Lady Barron	1
Sooty Oystercatcher	Lagoon Bay	1
Sooty Oystercatcher	Launderdale Coastline (Ralphs Bay)	2
Sooty Oystercatcher	Lighthouse Bay	9



Sooty Oystercatcher	Lisdillon Beach	3
Sooty Oystercatcher	Little Boomer	2
Sooty Oystercatcher	Little Musselroe	8
Sooty Oystercatcher	Little Spectacle Island	1
Sooty Oystercatcher	Long Bay Shoal	1
Sooty Oystercatcher	Long Point	2
Sooty Oystercatcher	Louisa Bay	1
Sooty Oystercatcher	Lufra Cove	1
Sooty Oystercatcher	Maatsuyker Island	1
Sooty Oystercatcher	Marion Bay Bridge	1
Sooty Oystercatcher	Marshall Beach	1
Sooty Oystercatcher	Middle Spectacle Island	1
Sooty Oystercatcher	Missionary Bay	1
Sooty Oystercatcher	Montague Island	2
Sooty Oystercatcher	Moorland Point	10
Sooty Oystercatcher	Moriarty Beach	1
Sooty Oystercatcher	Mosquito Inlet	1
Sooty Oystercatcher	Moulting Lagoon	1
Sooty Oystercatcher	Muir's Beach	1
Sooty Oystercatcher	Mulcahy Bay	2
Sooty Oystercatcher	Musselroe	1
Sooty Oystercatcher	Naracoopa Beach	1
Sooty Oystercatcher	Nelson Bay	2
Sooty Oystercatcher	Nine Mile Beach	8
Sooty Oystercatcher	North East Arm	1
Sooty Oystercatcher	North East River (river mouth)	1
Sooty Oystercatcher	North Pascoe Island	1
Sooty Oystercatcher	Noyhener Beach	1
Sooty Oystercatcher	Nye Bay	1
Sooty Oystercatcher	Orford Spit	1
Sooty Oystercatcher	Orielton Lagoon	1
Sooty Oystercatcher	Osmiridium Beach	1
Sooty Oystercatcher	Palana Beach	1
Sooty Oystercatcher	Patriarch Inlet	1
Sooty Oystercatcher	Petrifaction Bay	1
Sooty Oystercatcher	Pigeon Holes	1
Sooty Oystercatcher	Pipeclay Lagoon	6
Sooty Oystercatcher	Pirates Bay	4
Sooty Oystercatcher	Policemans Point	4
Sooty Oystercatcher	Port Sorell	1
Sooty Oystercatcher	Roaring Beach (Southport)	2
Sooty Oystercatcher	Roches Beach	2
Sooty Oystercatcher	Roydon Island	1
Sooty Oystercatcher	Samphire Corner	1
Sooty Oystercatcher	Sandblow Bay	1
Sooty Oystercatcher	Sawyers Bay	1
Sooty Oystercatcher	Scamander River (river mouth)	1

Sooty Oystercatcher	Sea Elephant Inlet	1
Sooty Oystercatcher	Seven Mile Beach	3
Sooty Oystercatcher	Seven Mile Beach (Anthony Beach)	1
Sooty Oystercatcher	Seven Mile Beach (East end)	1
Sooty Oystercatcher	Shipwreck Point	2
Sooty Oystercatcher	Shoal Bay & Chinamans Bay	1
Sooty Oystercatcher	Sisters Beach	2
Sooty Oystercatcher	Sloping Island	2
Sooty Oystercatcher	Sloping Reef	2
Sooty Oystercatcher	South Arm Neck (Ralphs Bay Wildlife	5
Sooty Oystercatcher	South Cape Bay	4
Sooty Oystercatcher	Stephans Bay	1
Sooty Oystercatcher	Stony Point	1
Sooty Oystercatcher	Stumpy Bay	1
Sooty Oystercatcher	Surprise Bay	1
Sooty Oystercatcher	The Neck	3
Sooty Oystercatcher	Towterer Beach	1
Sooty Oystercatcher	Two Tree Point	5
Sooty Oystercatcher	Visscher Island	2
Sooty Oystercatcher	Wallaby Islands	1
Sooty Oystercatcher	Welcome River (river mouth)	1
Sooty Oystercatcher	West Cove	1
Sooty Oystercatcher	West Inlet	1
Sooty Oystercatcher	Wreck Bay Beach	1
Sooty Oystercatcher	Wrinklers Beach	1
Terek Sandpiper	Five Islets	1
Terek Sandpiper	Shipwreck Point	1
Wader sp.	Bird Point	1
Wader sp.	Shipwreck Point	1
Wader sp.	South Arm Neck (Ralphs Bay Wildlife	1
Whimbrel	George Town Reserve	4
Whimbrel	Little Boomer	2
Whimbrel	Marion Beach	1
Whimbrel	North West Bay (river mouth)	1
Whimbrel	Orielton Causeway	1
Whimbrel	Orielton Lagoon	1
Whimbrel	Sorell	2
Whimbrel	Water View Bird Sanctuary	2
White-fronted Tern	Cape Portland	1
White-fronted Tern	Fisher Reef	2
White-fronted Tern	Gunters Bay	1

## APPENDIX C

SHOREBIRD BREEDING SITES – Ordered by ‘Species’ and also ordered by ‘Site’

ORDERED BY SPECIES		ORDERED BY SITE	
Species Breeding	Beach Name	Beach Name	Species Breeding
Black-fronted Dotterel	Saltworks Beach	Adventure Bay Beach	Hooded Plover
Caspian Tern	Lachlan Island	Arthur Beach	Pied Oystercatcher
Caspian Tern	Barren Island	Australia Point	Sooty Oystercatcher
Caspian Tern	Baynes Island	Badger Beach	Pied Oystercatcher
Caspian Tern	Hog Island	Bakers Beach	Hooded Plover
Caspian Tern	Green Island	Barilla Bay	Red-capped Plover
Crested Tern	Isle of Caves	Barren Island	Caspian Tern
Crested Tern	Governor Island	Barren Island	Kelp Gull
Fairy Tern	Cameron Inlet	Barren Island	Pacific Gull
Fairy Tern	Orford Spit	Barren Island	Silver Gull
Fairy Tern	Syndicate Lagoon	Bay of Fires	Pied Oystercatcher
Fairy Tern	Musselroe	Baynes Island	Caspian Tern
Fairy Tern	Little Musselroe	Baynes Island	Fairy Tern
Fairy Tern	Maurouard Beach	Baynes Island	Pacific Gull
Fairy Tern	Seven Mile Beach	Baynes Island	Silver Gull
Fairy Tern	Baynes Island	Beaumaris Beach	Hooded Plover
Fairy Tern	Lisdillon Beach	Beaumaris Beach	Little Tern
Hooded Plover	Mulcahy Bay	Beaumaris Beach	Red-capped Plover
Hooded Plover	Macleans Beach	Bell Buoy	Hooded Plover
Hooded Plover	Marion Beach	Bell Buoy	Pied Oystercatcher
Hooded Plover	Marshall Beach	Binalong Bay	Hooded Plover
Hooded Plover	Maurouard Beach	Binalong Bay	Pied Oystercatcher
Hooded Plover	Bakers Beach	Binalong Bay	Silver Gull
Hooded Plover	Nine Mile Beach	Blanche Point	Hooded Plover
Hooded Plover	Okehampton Bay	Calvert's Lagoon	Kelp Gull
Hooded Plover	Orford Spit	Calvert's Lagoon	Red-capped Plover
Hooded Plover	Meredith River (river	Cameron Inlet	Fairy Tern
Hooded Plover	Hazards Beach	Cameron Inlet	Masked Lapwing
Hooded Plover	Cloudy Beach	Cameron Inlet	Pied Oystercatcher
Hooded Plover	Fortescue Bay	Cloudy Beach	Hooded Plover
Hooded Plover	Garden Cove	Cloudy Beach	Pacific Gull
Hooded Plover	Binalong Bay	Cloudy Beach	Silver Gull
Hooded Plover	Bell Buoy	Coffin Bay	Sooty Oystercatcher
Hooded Plover	Lisdillon Beach	Curlew Island	Kelp Gull
Hooded Plover	Grindstone Bay	Curlew Island	Pacific Gull
Hooded Plover	Little Towterer Beach	Curlew Island	Silver Gull
Hooded Plover	Beaumaris Beach	Dianas Beach	Pied Oystercatcher
Hooded Plover	Pirates Bay	Double Rock	Pacific Gull
Hooded Plover	Lighthouse Bay	Dunckels Beach	Pied Oystercatcher
Hooded Plover	Blanche Point	Fortescue Bay	Hooded Plover
Hooded Plover	Adventure Bay Beach	Fortescue Bay	Pied Oystercatcher
Hooded Plover	Lagoon Beach	Fortescue Bay	Silver Gull
Hooded Plover	Green Point Beach	Foster Islands (east	Sooty Oystercatcher

Hooded Plover	The Neck (Bruny Is)	Foster Islands (west	Pacific Gull
Hooded Plover	Seven Mile Beach	Friendly Beaches	Silver Gull
Hooded Plover	Roaring Beach	Garden Cove	Hooded Plover
Hooded Plover	Sloping Main	Gardens Lagoon	Red-capped Plover
Hooded Plover	Saltworks Beach	George Town	Pied Oystercatcher
Hooded Plover	Two Tree Point	George Town	Red-capped Plover
Hooded Plover	Two Mile Beach	Governor Island	Crested Tern
Hooded Plover	Stephans Bay	Governor Island	Kelp Gull
Hooded Plover	Steels Beach	Green Island	Caspian Tern
Hooded Plover	Rebecca Beach	Green Island	Kelp Gull
Hooded Plover	Swanwick Bay	Green Island	Pacific Gull
Hooded Plover	Ranson's Beach	Green Island	Silver Gull
Kelp Gull	Isle of Caves	Green Island	Sooty Oystercatcher
Kelp Gull	Rocky Islet (south of	Green Point Beach	Hooded Plover
Kelp Gull	Lachlan Island	Green Point Beach	Silver Gull
Kelp Gull	South Arm Neck	Grindstone Bay	Hooded Plover
Kelp Gull	Sloping Island	Grindstone Bay	Pied Oystercatcher
Kelp Gull	Kelly Islands	Grindstone Bay	Red-capped Plover
Kelp Gull	Iron Pot	Hazards Beach	Hooded Plover
Kelp Gull	Sandspit	Hog Island	Caspian Tern
Kelp Gull	Green Island	Hog Island	Pacific Gull
Kelp Gull	Governor Island	Horseshoe Bank	Red-capped Plover
Kelp Gull	Orielton Lagoon	Iron Pot	Kelp Gull
Kelp Gull	Curlew Island	Iron Pot	Silver Gull
Kelp Gull	Calvert's Lagoon	Iron Pot	Sooty Oystercatcher
Kelp Gull	Vischer Island	Isle of Caves	Crested Tern
Kelp Gull	Barren Island	Isle of Caves	Kelp Gull
Kelp Gull	White Rock Point	Isle of Caves	Silver Gull
Little Tern	Beaumaris Beach	Kelly Islands	Kelp Gull
Little Tern	Steels Beach	Kelly Islands	Silver Gull
Masked Lapwing	Pelican Rocks	Lachlan Island	Caspian Tern
Masked Lapwing	Cameron Inlet	Lachlan Island	Kelp Gull
Masked Lapwing	Rocky Bay	Lachlan Island	Pacific Gull
Masked Lapwing	Little Boomer	Lachlan Island	Silver Gull
Masked Lapwing	Pipeclay Lagoon	Lachlan Island	Sooty Oystercatcher
Pacific Gull	Pebbly Bay	Lagoon Beach	Hooded Plover
Pacific Gull	Green Island	Lighthouse Bay	Hooded Plover
Pacific Gull	Lachlan Island	Lighthouse Bay	Pacific Gull
Pacific Gull	Barren Island	Lighthouse Bay	Pied Oystercatcher
Pacific Gull	Pirates Bay	Lighthouse Bay	Sooty Oystercatcher
Pacific Gull	Baynes Island	Lisdillon Beach	Fairy Tern
Pacific Gull	Sloping Island	Lisdillon Beach	Hooded Plover
Pacific Gull	Lighthouse Bay	Lisdillon Beach	Pied Oystercatcher
Pacific Gull	Hog Island	Lisdillon Beach	Red-capped Plover
Pacific Gull	Policemans Point	Little Boomer	Masked Lapwing
Pacific Gull	Cloudy Beach	Little Boomer	Pied Oystercatcher
Pacific Gull	Curlew Island	Little Musselroe	Fairy Tern

Pacific Gull	Foster Islands (west	Little Towterer Beach	Hooded Plover
Pacific Gull	Double Rock	Low Head	Pied Oystercatcher
Pacific Gull	Okehampton Bay	Maatsuyker Island	Silver Gull
Pied Oystercatcher	Steels Beach	Macleans Beach	Hooded Plover
Pied Oystercatcher	Binalong Bay	Marion Beach	Hooded Plover
Pied Oystercatcher	Lisdillon Beach	Marion Beach	Pied Oystercatcher
Pied Oystercatcher	Grindstone Bay	Marshall Beach	Hooded Plover
Pied Oystercatcher	Two Tree Point	Marshall Beach	Pied Oystercatcher
Pied Oystercatcher	Pelican Rocks	Maurouard Beach	Fairy Tern
Pied Oystercatcher	Orford Spit	Maurouard Beach	Hooded Plover
Pied Oystercatcher	Cameron Inlet	Meredith River (river	Hooded Plover
Pied Oystercatcher	Marion Beach	Meredith River (river	Pied Oystercatcher
Pied Oystercatcher	Dianas Beach	Meredith River (river	Red-capped Plover
Pied Oystercatcher	Fortescue Bay	Mortimer Bay	Pied Oystercatcher
Pied Oystercatcher	Towterer Beach	Mulcahy Bay	Hooded Plover
Pied Oystercatcher	Ranson's	Musselroe	Fairy Tern
Pied Oystercatcher	Meredith River (river	Nine Mile Beach	Hooded Plover
Pied Oystercatcher	Arthur Beach	Ocean Beach	Red-capped Plover
Pied Oystercatcher	Seven Mile Beach	Okehampton Bay	Hooded Plover
Pied Oystercatcher	Badger Beach	Okehampton Bay	Pacific Gull
Pied Oystercatcher	Low Head	Okehampton Bay	Red-capped Plover
Pied Oystercatcher	Marshall Beach	Orford Spit	Fairy Tern
Pied Oystercatcher	Simpson's Bay	Orford Spit	Hooded Plover
Pied Oystercatcher	Little Boomer	Orford Spit	Pied Oystercatcher
Pied Oystercatcher	Wrinklers Beach	Orford Spit	Red-capped Plover
Pied Oystercatcher	Saltworks Beach	Orielton Lagoon	Kelp Gull
Pied Oystercatcher	Bell Buoy	Orielton Lagoon	Red-capped Plover
Pied Oystercatcher	Bay of Fires	Orielton Lagoon	Silver Gull
Pied Oystercatcher	South Arm Neck	Pebbly Bay	Pacific Gull
Pied Oystercatcher	Waterhouse	Pelican Rocks	Masked Lapwing
Pied Oystercatcher	Mortimer Bay	Pelican Rocks	Pied Oystercatcher
Pied Oystercatcher	Pipeclay Lagoon	Pipeclay Lagoon	Masked Lapwing
Pied Oystercatcher	George Town Reserve	Pipeclay Lagoon	Pied Oystercatcher
Pied Oystercatcher	Un named 1	Pipeclay Lagoon	Red-capped Plover
Pied Oystercatcher	Dunckels Beach	Pirates Bay	Hooded Plover
Pied Oystercatcher	Lighthouse Bay	Pirates Bay	Pacific Gull
Red-capped Plover	Pipeclay Lagoon	Policemans Point	Pacific Gull
Red-capped Plover	Beaumaris Beach	Ranson's Beach	Hooded Plover
Red-capped Plover	Waterhouse	Ranson's Beach	Pied Oystercatcher
Red-capped Plover	Barilla Bay	Rebecca Beach	Hooded Plover
Red-capped Plover	Calvert's Lagoon	Roaring Beach	Hooded Plover
Red-capped Plover	Horseshoe Bank	Rocky Bay	Masked Lapwing
Red-capped Plover	Sandspit	Rocky Islet (south of	Kelp Gull
Red-capped Plover	Lisdillon Beach	Saltworks Beach	Black-fronted Dotterel
Red-capped Plover	Saltworks Beach	Saltworks Beach	Hooded Plover
Red-capped Plover	Meredith River (river	Saltworks Beach	Pied Oystercatcher
Red-capped Plover	South Arm Neck	Saltworks Beach	Red-capped Plover

Red-capped Plover	Gardens Lagoon	Sandspit	Kelp Gull
Red-capped Plover	Ocean Beach	Sandspit	Red-capped Plover
Red-capped Plover	Grindstone Bay	Seven Mile Beach	Pied Oystercatcher
Red-capped Plover	Steels Beach	Seven Mile Beach	Fairy Tern
Red-capped Plover	Orford Spit	Seven Mile Beach	Hooded Plover
Red-capped Plover	George Town Reserve	Simpson's Bay	Pied Oystercatcher
Red-capped Plover	Orielton Lagoon	Sloping Island	Kelp Gull
Red-capped Plover	Okehampton Bay	Sloping Island	Pacific Gull
Silver Gull	Baynes Island	Sloping Main	Hooded Plover
Silver Gull	Maatsuyker Island	South Arm Neck	Kelp Gull
Silver Gull	Curlaw Island	South Arm Neck	Pied Oystercatcher
Silver Gull	Friendly Beaches	South Arm Neck	Red-capped Plover
Silver Gull	Lachlan Island	Steels Beach	Hooded Plover
Silver Gull	Barren Island	Steels Beach	Little Tern
Silver Gull	Orielton Lagoon	Steels Beach	Pied Oystercatcher
Silver Gull	Kelly Islands	Steels Beach	Red-capped Plover
Silver Gull	Iron Pot	Stephans Bay	Hooded Plover
Silver Gull	Isle of Caves	Swanwick Bay	Hooded Plover
Silver Gull	Cloudy Beach	Syndicate Lagoon	Fairy Tern
Silver Gull	Fortescue Bay	The Neck	Hooded Plover
Silver Gull	Binalong Bay	Towterer Beach	Pied Oystercatcher
Silver Gull	Green Point Beach	Two Mile Beach	Hooded Plover
Silver Gull	Green Island	Two Tree Point	Hooded Plover
Silver Gull	Visscher Island	Two Tree Point	Pied Oystercatcher
Sooty Oystercatcher	Coffin Bay	Two Tree Point	Sooty Oystercatcher
Sooty Oystercatcher	Iron Pot	Un named 1	Pied Oystercatcher
Sooty Oystercatcher	Two Tree Point	Visscher Island	Kelp Gull
Sooty Oystercatcher	Lachlan Island	Visscher Island	Silver Gull
Sooty Oystercatcher	Lighthouse Bay	Waterhouse	Pied Oystercatcher
Sooty Oystercatcher	Green Island	Waterhouse	Red-capped Plover
Sooty Oystercatcher	Australia Point	White Rock Point	Kelp Gull
Sooty Oystercatcher	Foster Islands (east)	Wrinklers Beach	Pied Oystercatcher

APPENDIX D – BREEDING PRODUCTIVITY

Species	Site	Date	Adults	Nests	Eggs	Chick	Juv
Black-fronted Dotrl	Saltworks Beach	02/12/98	2	1	3	0	0
Caspian Tern	Baynes Island	08/12/98	1	-	No	2	0
Caspian Tern	Barren Island	02/01/99	2	-	2	0	0
Caspian Tern	Green Island	01/02/98	2	-	No	1	0
Caspian Tern	Hog Island	31/12/98	2	-	No	1	0
Caspian Tern	Lachlan Island	02/12/98	1	-	2	0	0
Crested Tern	Governor Island	04/12/98	2000	886	242	640	0
Crested Tern	Isle of Caves	21/11/98	300	Yes	No	0	0
Fairy Tern	Baynes Island	08/12/98	7	-	No	5	1
Fairy Tern	Cameron Inlet	14/12/98	52	19	29	0	2
Fairy Tern	Cameron Inlet	18/12/98	80	75	60	0	0
Crested Tern	Isle of Caves	31/12/98	1000	53	Yes	0	0
Fairy Tern	Lisdillon Beach	28/09/98	25	7	9	0	0
Fairy Tern	Lisdillon Beach	07/10/98	28	13	22	0	0
Fairy Tern	Lisdillon Beach	16/10/98	24	2	17	0	0
Fairy Tern	Lisdillon Beach (2 try)	16/10/98	24	2	17	0	0
Fairy Tern	Lisdillon Beach	17/11/98	15	2	3	2	0
Fairy Tern	Little Musselroe	16/11/98	4	2	3	0	0
Fairy Tern	Maurouard Beach	06/11/98	4	-	Yes	0	0
Fairy Tern	Maurouard Beach	20/11/98	4	Yes	No	0	0
Fairy Tern	Maurouard Beach	04/12/98	22	1	2	0	0
Fairy Tern	Maurouard Beach	18/12/98	14	10	No	0	0
Fairy Tern	Maurouard Beach	03/01/99	18	7	No	0	0
Fairy Tern	Maurouard Beach	13/01/99	16	8	Yes	0	0
Fairy Tern	Musselroe	15/01/99	4	-	No	0	2
Fairy Tern	Orford Spit	21/12/98	2	1	1	0	0
Fairy Tern	Orford Spit	21/12/98	2	1	2	0	0
Fairy Tern	Orford Spit	22/12/98	4	2	4	0	0
Fairy Tern	Orford Spit	06/01/99	4	-	No	2	0
Fairy Tern	Seven Mile Beach	30/01/99	10	2	6	0	0
Fairy Tern	Syndicate Lagoon	26/02/99	105	Yes	No	10	0
Hooded Plover	Adventure Bay Beach	09/12/98	2		Yes	0	0
Hooded Plover	Adventure Bay Beach	26/12/98	2		No	3	0
Hooded Plover	Adventure Bay Beach	04/01/99	2		No	2	0
Hooded Plover	Adventure Bay Beach	16/01/99	2		No	2	1
Hooded Plover	Adventure Bay Beach	22/01/99	2		No	2	0
Hooded Plover	Adventure Bay Beach	20/02/99	2		No	2	0
Hooded Plover	Adventure Bay Beach	09/03/99	2		No	2	0
Hooded Plover	Bakers Beach	22/11/98	4		Yes	0	0
Hooded Plover	Bakers Beach	05/12/98	2		Yes	0	0
Hooded Plover	Bakers Beach	31/01/99	2		Yes	0	0
Hooded Plover	Beaumaris Beach	20/11/98	4		No	2	0
Hooded Plover	Beaumaris Beach	04/12/98	4		No	3	0
Hooded Plover	Beaumaris Beach	19/12/98	2		Yes	0	0
Hooded Plover	Bell Buoy	12/11/98	2		No	0	2

Hooded Plover	Binalong Bay	29/11/98	3		Yes	0	0
Hooded Plover	Binalong Bay	30/12/98	4		No	2	0
Hooded Plover	Binalong Bay	10/01/99	3		No	2	0
Hooded Plover	Binalong Bay	30/01/99	2		No	3	0
Hooded Plover	Blanche Point	21/11/98	2		No	0	0
Hooded Plover	Cloudy Beach	23/01/99	0		Yes	0	0
Hooded Plover	Fortescue Bay	18/10/98	1		Yes	0	0
Hooded Plover	Fortescue Bay	14/11/98	2		Yes	0	0
Hooded Plover	Fortescue Bay	26/11/98	4		No	0	0
Hooded Plover	Fortescue Bay	18/01/99	1		No	1	0
Hooded Plover	Garden Cove	10/10/98	2		No	0	0
Hooded Plover	Green Point Beach	01/01/99	5		No	6	0
Hooded Plover	Grindstone Bay	05/01/99	5		No	3	0
Hooded Plover	Grindstone Bay	16/01/99	5		No	3	0
Hooded Plover	Grindstone Bay	04/02/99	6		No	2	0
Hooded Plover	Grindstone Bay	21/02/99	5		No	3	0
Hooded Plover	Grindstone Bay	20/03/99	6		No	3	0
Hooded Plover	Hazards Beach	01/01/99	2		Yes	0	0
Hooded Plover	Lagoon Beach	31/12/98	2		Yes	0	0
Hooded Plover	Lighthouse Bay	30/12/98	2		No	0	0
Hooded Plover	Lighthouse Bay	25/02/99	2		No	1	0
Hooded Plover	Lisdillon Beach	21/09/98	4		Yes	0	0
Hooded Plover	Lisdillon Beach	28/09/98	12		Yes	0	0
Hooded Plover	Lisdillon Beach	07/10/98	6		Yes	0	0
Hooded Plover	Lisdillon Beach	16/10/98	12		No	0	0
Hooded Plover	Little Towterer Beach	13/01/99	2	Yes	No	0	0
Hooded Plover	Macleans Beach	11/11/98	2		Yes	0	0
Hooded Plover	Marion Beach	10/12/98	2		Yes	0	0
Hooded Plover	Marion Beach	20/02/99	6		Yes	1	0
Hooded Plover	Marion Beach	09/03/99	2		Yes	0	0
Hooded Plover	Marion Beach	25/03/99	2		No	3	0
Hooded Plover	Marshall Beach	19/12/98	19		No	0	1
Hooded Plover	Maurouard Beach	18/12/98	15		No	0	0
Hooded Plover	Maurouard Beach	13/01/99	10		No	4	0
Hooded Plover	Maurouard Beach	01/02/99	10		No	4	0
Hooded Plover	Meredith River (river	16/11/98	2		Yes	0	0
Hooded Plover	Meredith River (river	23/11/98	2	Yes	No	0	0
Hooded Plover	Mulcahy Bay	12/01/99	3		Yes	0	0
Hooded Plover	Mulcahy Bay	13/01/99	1		Yes	0	0
Hooded Plover	Nine Mile Beach	27/12/98	4		Yes	0	0
Hooded Plover	Nine Mile Beach	14/01/99	4		Yes	0	0
Hooded Plover	Okehampton Bay	05/01/99	2		No	1	0
Hooded Plover	Okehampton Bay	16/01/99	2		No	1	0
Hooded Plover	Okehampton Bay	20/03/99	2		No	3	0
Hooded Plover	Orford Spit	28/09/98	2		Yes	0	0
Hooded Plover	Orford Spit	28/09/98	2		Yes	0	0
Hooded Plover	Orford Spit	03/11/98	2		Yes	0	0



Hooded Plover	Orford Spit	21/12/98	6		Yes	0	0
Hooded Plover	Orford Spit	22/12/98	2		No	2	0
Hooded Plover	Orford Spit	06/01/99	2		Yes	0	0
Hooded Plover	Pirates Bay	14/11/98	2		No	2	0
Hooded Plover	Ranson's Beach	13/11/98	2		Yes	0	0
Hooded Plover	Rebecca Beach	09/11/98	2		Yes	0	0
Hooded Plover	Roaring Beach	19/02/99	2		No	3	0
Hooded Plover	Roaring Beach	03/03/99	4		No	6	0
Hooded Plover	Saltworks Beach	23/11/98	2		Yes	0	0
Hooded Plover	Saltworks Beach	02/12/98	4		Yes	0	0
Hooded Plover	Seven Mile Beach	30/01/99	17		No	0	2
Hooded Plover	Sloping Main	31/12/98	5		Yes	0	0
Hooded Plover	Steels Beach	10/11/98	2		Yes	0	0
Hooded Plover	Steels Beach	24/11/98	6		Yes	0	0
Hooded Plover	Steels Beach	21/02/99	8		No	2	0
Hooded Plover	Steels Beach	30/03/99	6		No	1	0
Hooded Plover	Steels Beach	11/11/99	1		Yes	0	0
Hooded Plover	Stephans Bay	12/01/99	4		Yes	0	0
Hooded Plover	Swanwick Bay	13/02/99	2		No	3	0
Hooded Plover	The Neck	10/12/98	4		Yes	0	0
Hooded Plover	The Neck	17/01/99	4		Yes	0	0
Hooded Plover	Two Mile Beach	29/12/98	26		No	1	5
Hooded Plover	Two Tree Point	25/12/98	2		Yes	0	0
Kelp Gull	Barren Island	02/01/99	22		Yes	0	0
Kelp Gull	Calvert's Lagoon	09/11/98	2		No	0	0
Kelp Gull	Curlew Island	31/01/99	12		Yes	7	0
Kelp Gull	Governor Island	04/12/98	4		Yes	0	0
Kelp Gull	Green Island	18/07/98	1002		No	0	0
Kelp Gull	Green Island	10/10/98	1300		Yes	0	0
Kelp Gull	Green Island	01/12/98	1		Yes	0	0
Kelp Gull	Green Island	01/12/98	1		Yes	0	0
Kelp Gull	Green Island	26/01/99	2000		Yes	0	0
Kelp Gull	Iron Pot	26/12/98	25		No	0	0
Kelp Gull	Isle of Caves	21/11/98	67		No	0	0
Kelp Gull	Isle of Caves	29/11/98	1		Yes	0	0
Kelp Gull	Isle of Caves	29/11/98	1		Yes	0	0
Kelp Gull	Kelly Islands	09/01/99	2		No	0	0
Kelp Gull	Lachlan Island	02/12/98	250		Yes	0	2
Kelp Gull	Orielton Lagoon	30/12/98	22		No	0	0
Kelp Gull	Orielton Lagoon	26/01/99	14		No	0	1
Kelp Gull	Rocky Islet (south of	09/01/99	2		No	0	0
Kelp Gull	Sandspit	22/12/98	20		No	0	0
Kelp Gull	Sloping Island	21/11/98	5		Yes	0	0
Kelp Gull	South Arm Neck	15/10/98	6		No	0	0
Kelp Gull	South Arm Neck	28/12/98	7		No	2	0
Kelp Gull	Visscher Island	09/01/99	800		Yes	0	0
Kelp Gull	White Rock Point	26/12/98	14		No	0	0

Little Tern	Beaumaris Beach	31/01/99	4	2	No	2	2
Little Tern	Steels Beach	19/01/99	2	1	2	0	0
Masked Lapwing	Cameron Inlet	14/12/98	17	-	No	Yes	0
Masked Lapwing	Little Boomer	08/10/98	4	-	No	Yes	0
Masked Lapwing	Pelican Rocks	22/10/98	2	1	4	0	0
Masked Lapwing	Pipeclay Lagoon	26/09/98	18	2	No	0	0
Masked Lapwing	Pipeclay Lagoon	25/10/98	2	-	No	2	0
Masked Lapwing	Rocky Bay	11/10/98	2	-	No	Yes	0
Pacific Gull	Barren Island	02/01/99	1		No	0	0
Pacific Gull	Baynes Island	08/12/98	45		Yes	0	0
Pacific Gull	Cloudy Beach	21/02/99	0		No	2	3
Pacific Gull	Curlew Island	31/01/99	20		Yes	25	0
Pacific Gull	Double Rock	09/01/99	2		No	0	0
Pacific Gull	Foster Islands (west	10/12/98	5		Yes	0	0
Pacific Gull	Green Island	01/12/98	1		Yes	0	0
Pacific Gull	Hog Island	31/12/98	3		No	0	0
Pacific Gull	Lachlan Island	02/12/98	1		Yes	0	0
Pacific Gull	Lighthouse Bay	25/02/99	1		No	1	0
Pacific Gull	Okehampton Bay	05/12/98	1		No	1	0
Pacific Gull	Pebbly Bay	13/11/98	5		No	1	0
Pacific Gull	Pirates Bay	24/11/98	2		No	1	0
Pacific Gull	Policemans Point	31/01/99	3		No	1	0
Pacific Gull	Sloping Island	15/01/99	0		No	0	0
Pied Oystercatcher	Arthur Beach	10/12/98	4		No	0	0
Pied Oystercatcher	Badger Beach	10/11/98	9		No	1	0
Pied Oystercatcher	Bay of Fires	12/01/99	2		No	0	2
Pied Oystercatcher	Bell Buoy	12/11/98	2		Yes	0	0
Pied Oystercatcher	Binalong Bay	02/11/98	2		No	2	0
Pied Oystercatcher	Cameron Inlet	14/12/98	6	Yes	No	0	0
Pied Oystercatcher	Cameron Inlet	18/12/98	5	Yes	No	0	0
Pied Oystercatcher	Dianas Beach	11/11/98	10		Yes	0	0
Pied Oystercatcher	Dunckels Beach	09/12/98	3		Yes	0	0
Pied Oystercatcher	Dunckels Beach	25/12/98	2		Yes	0	0
Pied Oystercatcher	Dunckels Beach	20/01/99	2		No	1	0
Pied Oystercatcher	Fortescue Bay	14/11/98	2		Yes	0	0
Pied Oystercatcher	Fortescue Bay	26/11/98	2		No	0	0
Pied Oystercatcher	George Town	28/10/98	6		No	0	2
Pied Oystercatcher	George Town	15/11/98	4		No	0	0
Pied Oystercatcher	George Town	13/01/99	12		No	3	0
Pied Oystercatcher	Grindstone Bay	24/10/98	2		No	1	0
Pied Oystercatcher	Grindstone Bay	21/11/98	2		No	0	2
Pied Oystercatcher	Lighthouse Bay	30/12/98	2		No	0	0
Pied Oystercatcher	Lisdillon Beach	28/09/98	6		Yes	0	0
Pied Oystercatcher	Lisdillon Beach	07/10/98	2		No	0	0
Pied Oystercatcher	Lisdillon Beach	16/10/98	2		Yes	0	0
Pied Oystercatcher	Lisdillon Beach	16/10/98	4		No	0	1
Pied Oystercatcher	Lisdillon Beach	16/10/98	4		No	0	2

Pied Oystercatcher	Little Boomer	08/10/98	8		No	0	0
Pied Oystercatcher	Low Head	28/10/98	2		Yes	0	0
Pied Oystercatcher	Marion Beach	09/10/98	44		No	0	0
Pied Oystercatcher	Marshall Beach	19/12/98	18		No	8	0
Pied Oystercatcher	Meredith River (river	20/10/98	2		No	0	0
Pied Oystercatcher	Mortimer Bay	10/11/98	4		Yes	0	0
Pied Oystercatcher	Orford Spit	03/08/98	2		No	0	0
Pied Oystercatcher	Orford Spit	16/11/98	2		Yes	0	0
Pied Oystercatcher	Pelican Rocks	22/10/98	4		No	0	0
Pied Oystercatcher	Pelican Rocks	22/10/98	2		Yes	0	0
Pied Oystercatcher	Pipeclay Lagoon	07/12/98	0		No	2	0
Pied Oystercatcher	Pipeclay Lagoon	07/12/98	4		No	0	0
Pied Oystercatcher	Pipeclay Lagoon	31/12/98	14		No	0	2
Pied Oystercatcher	Ranson's Beach	13/11/98	2		Yes	0	0
Pied Oystercatcher	Saltworks Beach	02/12/98	2		No	1	0
Pied Oystercatcher	Seven Mile Beach	09/01/99	22		No	8	0
Pied Oystercatcher	Simpson's Bay	20/11/98	2		No	0	1
Pied Oystercatcher	Simpson's Bay	20/11/98	2		Yes	0	0
Pied Oystercatcher	South Arm Neck	15/10/98	8		Yes	0	0
Pied Oystercatcher	South Arm Neck	04/11/98	4		Yes	0	2
Pied Oystercatcher	South Arm Neck	09/12/98	2		No	0	1
Pied Oystercatcher	Steels Beach	27/10/98	4		Yes	0	0
Pied Oystercatcher	Steels Beach	10/11/98	3		Yes	2	0
Pied Oystercatcher	Steels Beach	24/11/98	10		No	0	0
Pied Oystercatcher	Steels Beach	22/12/98	14		Yes	0	1
Pied Oystercatcher	Steels Beach	19/01/99	8		No	2	2
Pied Oystercatcher	Steels Beach	11/11/99	3		Yes	0	0
Pied Oystercatcher	Towterer Beach	13/01/99	8		No	0	0
Pied Oystercatcher	Two Tree Point	12/11/98	2		Yes	0	0
Pied Oystercatcher	Two Tree Point	09/12/98	4		Yes	0	0
Pied Oystercatcher	Two Tree Point	25/12/98	3		Yes	0	0
Pied Oystercatcher	Two Tree Point	16/01/99	3		No	4	0
Pied Oystercatcher	Two Tree Point	16/02/99	2		No	4	0
Pied Oystercatcher	Un named	20/11/98	2		Yes	0	0
Pied Oystercatcher	Waterhouse	13/11/98	2		Yes	0	0
Pied Oystercatcher	Wrinklers Beach	13/01/99	2		No	1	0
Red-capped Plover	Barilla Bay	21/11/98	4		No	0	3
Red-capped Plover	Beaumaris Beach	19/12/98	2		Yes	0	0
Red-capped Plover	Beaumaris Beach	01/01/99	4		Yes	0	0
Red-capped Plover	Beaumaris Beach	31/01/99	2		Yes	0	0
Red-capped Plover	Calvert's Lagoon	07/12/98	30		No	0	0
Red-capped Plover	Gardens Lagoon	31/01/99	9		No	3	4
Red-capped Plover	George Town	28/10/98	16		No	0	4
Red-capped Plover	George Town	15/11/98	20		No	0	0
Red-capped Plover	Grindstone Bay	21/02/99	2		No	1	0
Red-capped Plover	Horseshoe Bank	05/03/99	2		No	2	0
Red-capped Plover	Lisdillon Beach	07/10/98	24		No	0	0

Red-capped Plover	Lisdillon Beach	16/10/98	11		No	0	0
Red-capped Plover	Lisdillon Beach	17/11/98	16		Yes	0	0
Red-capped Plover	Lisdillon Beach	03/12/98	12		No	2	0
Red-capped Plover	Meredith River (river	20/10/98	4		Yes	0	0
Red-capped Plover	Meredith River (river	23/11/98	6		Yes	1	0
Red-capped Plover	Meredith River (river	24/11/98	5		No	2	0
Red-capped Plover	Meredith River (river	16/12/98	9		No	0	0
Red-capped Plover	Ocean Beach	09/02/99	32		No	0	0
Red-capped Plover	Okehampton Bay	16/01/99	6		No	1	0
Red-capped Plover	Orford Spit	16/11/98	9		Yes	0	0
Red-capped Plover	Orford Spit	21/12/98	17		Yes	0	0
Red-capped Plover	Orford Spit	22/12/98	16		No	0	0
Red-capped Plover	Orford Spit	06/01/99	10		No	0	0
Red-capped Plover	Orielton Lagoon	26/01/99	2		Yes	0	0
Red-capped Plover	Pipeclay Lagoon	31/12/98	16		No	0	0
Red-capped Plover	Saltworks Beach	19/11/98	2		Yes	0	0
Red-capped Plover	Sandspit	22/12/98	20		No	0	0
Red-capped Plover	South Arm Neck	04/11/98	10		No	0	0
Red-capped Plover	Steels Beach	27/10/98	11		Yes	0	0
Red-capped Plover	Steels Beach	10/11/98	17		Yes	3	0
Red-capped Plover	Steels Beach	24/11/98	16		Yes	0	0
Red-capped Plover	Steels Beach	22/12/98	40		Yes	0	0
Red-capped Plover	Steels Beach	19/01/99	27		Yes	0	0
Red-capped Plover	Steels Beach	11/11/99	17		Yes	0	0
Red-capped Plover	Waterhouse	13/11/98	8		No	0	0
Silver Gull	Barren Island	02/01/99	300		Yes	0	0
Silver Gull	Baynes Island	08/12/98	350		Yes	0	0
Silver Gull	Binalong Bay	13/02/99	17		No	1	0
Silver Gull	Cloudy Beach	23/01/99	8		No	2	0
Silver Gull	Cloudy Beach	21/02/99	10		No	2	3
Silver Gull	Curlew Island	31/01/99	51		Yes	0	0
Silver Gull	Fortescue Bay	18/01/99	7		No	1	0
Silver Gull	Friendly Beaches	26/01/99	11		No	2	0
Silver Gull	Green Island	10/10/98	14		Yes	0	0
Silver Gull	Green Island	26/01/99	125		Yes	0	0
Silver Gull	Green Point Beach	30/01/99	9		No	4	0
Silver Gull	Iron Pot	26/12/98	1		Yes	0	0
Silver Gull	Isle of Caves	21/11/98	1100		No	0	0
Silver Gull	Isle of Caves	29/11/98	1		No	0	0
Silver Gull	Kelly Islands	03/01/98	10		Yes	0	0
Silver Gull	Lachlan Island	02/12/98	78		Yes	0	0
Silver Gull	Maatsuyker Island	03/11/98	10		No	0	0
Silver Gull	Orielton Lagoon	30/12/98	80		No	0	0
Silver Gull	Visscher Island	09/01/99			Yes		
Silver Gull	Visscher Island	09/01/99	36		Yes	0	0
Sooty Oystercatcher	Australia Point	17/01/99	2		No	0	0
Sooty Oystercatcher	Australia Point	30/01/99	1		No	0	0

Sooty Oystercatcher	Coffin Bay	07/01/99	1		No	1	0
Sooty Oystercatcher	Foster Islands (east	10/12/98	10		Yes	0	0
Sooty Oystercatcher	Green Island	01/02/98	8		No	5	0
Sooty Oystercatcher	Green Island	08/03/98	2		No	1	0
Sooty Oystercatcher	Green Island	10/10/98	4		Yes	0	0
Sooty Oystercatcher	Green Island	01/12/98	14		No	0	0
Sooty Oystercatcher	Green Island	26/01/99	5		No	2	0
Sooty Oystercatcher	Iron Pot	26/12/98	4		Yes	0	0
Sooty Oystercatcher	Lachlan Island	02/12/98	4		Yes	0	0
Sooty Oystercatcher	Lighthouse Bay	02/12/98	2		No	0	0
Sooty Oystercatcher	Lighthouse Bay	12/12/98	2		No	0	0
Sooty Oystercatcher	Lighthouse Bay	30/12/98	1		No	0	0
Sooty Oystercatcher	Lighthouse Bay	16/01/99	2		No	0	0
Sooty Oystercatcher	Two Tree Point	20/02/99	6		No	2	0