

**Maria Island  
National Park  
and  
Ile Des Phoques  
Nature Reserve  
Management Plan**

**1998**

**MARIA ISLAND NATIONAL PARK  
AND ILE DES PHOQUES NATURE RESERVE  
MANAGEMENT PLAN 1998**

This management plan for the Maria Island National Park and Ile des Phoques Nature Reserve has been prepared in accordance with the requirements of part IV of the *National Parks and Wildlife Act 1970*.

A draft of this plan was released for public comment in accordance with statutory requirements from 22 March 1997 until 16 May 1997. This plan is a modified version of that draft, having been varied to take account of public input during that period and the views of the National Parks and Wildlife Advisory Council.

Unless otherwise specified, this plan adopts the interpretation of terms given in Section 3 of the *National Parks and Wildlife Act 1970*. The term "Minister" when used in the plan means the Minister administering the Act. The term "Park" refers to the Maria Island National Park. The term "Reserve" refers to the Ile des Phoques Nature Reserve.

In accordance with Section 23(2) of the *National Parks and Wildlife Act 1970*, the managing authority for the Park, in this case the Director of National Parks and Wildlife, shall carry out his or her duties in relation to the Park for the purpose of giving effect to, and in accordance with the provisions of, this management plan. The position of Director is held by the Director, Parks and Wildlife Service, Department of Environment and Land Management.

**APPROVAL**

This management plan was approved by His Excellency the Governor-in-Council on 4 May 1998 and took effect on 3 June, being seven days after publication of that approval in the *Government Gazette*.

The provisions of Section 27 of the plan, which authorise the exercise of certain statutory powers, are of no effect until they are approved by both Houses of the Parliament of Tasmania and gazetted in accordance with Section 21(3A) of the *National Parks and Wildlife Act 1970*.

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## Introduction

The Director of National Parks and Wildlife, a position currently held by the Director of the Parks and Wildlife Service, Department of Environment and Land Management, is the managing authority for the Maria Island National Park and the Ile des Phoques Nature Reserve and is charged with the preparation of a management plan for them in accordance with the *National Parks and Wildlife Act 1970*.

This management plan is comprised of three parts. Part A gives an account of the features of the Park and the Reserve that set the context and requirements for the management objectives and prescriptions which follow in Parts B and C. Part B sets out the values, significance, goals and management objectives. Part C sets out the prescriptions for management necessary for achieving the management objectives for the Park and the Reserve. Parts B and C constitute the plan as required by the Act. Appendices do not form part of the statutory management plan. The plan may only be varied in accordance with the procedures set out in Sections 19 and 20 of the *National Parks and Wildlife Act 1970* and, in any case, will be reviewed five years after approval of the plan by the Governor.

Many organisations and individuals have assisted in the preparation of this plan by providing information and comments on earlier drafts. Their time and effort is gratefully acknowledged.

## Part A Management Context

The following account summarises the features of Maria Island National Park and Ile des Phoques Nature Reserve, describes aspects of past and present use and identifies management issues. This sets the context for the formulation of management objectives and provides the basis for management strategies.

### **1 Location, Access and Regional Context**

#### **1.1 Location and Access**

Maria Island lies off the south-east coast of Tasmania (see Map 1). Access is by boat or plane. There is a jetty at Darlington, used by the Parks and Wildlife Service boat, the ferry, and recreational and fishing craft. The Darlington jetty is the responsibility of the Department of Transport. The adjacent boat slip is for Service use. In the past, there were jetties at Edina Pt, Bloodstone Pt, and Return Pt.

The nearest departure points for the island are from Louisville Point (12 km), Triabunna (16 km) and Orford (16 km). Louisville Point and Triabunna are approximately 85 km, or a 1 hour drive, from Hobart via the Tasman Highway. At present, a commercial ferry service operates from Louisville Point, taking about thirty minutes to reach the island, depending on weather conditions.

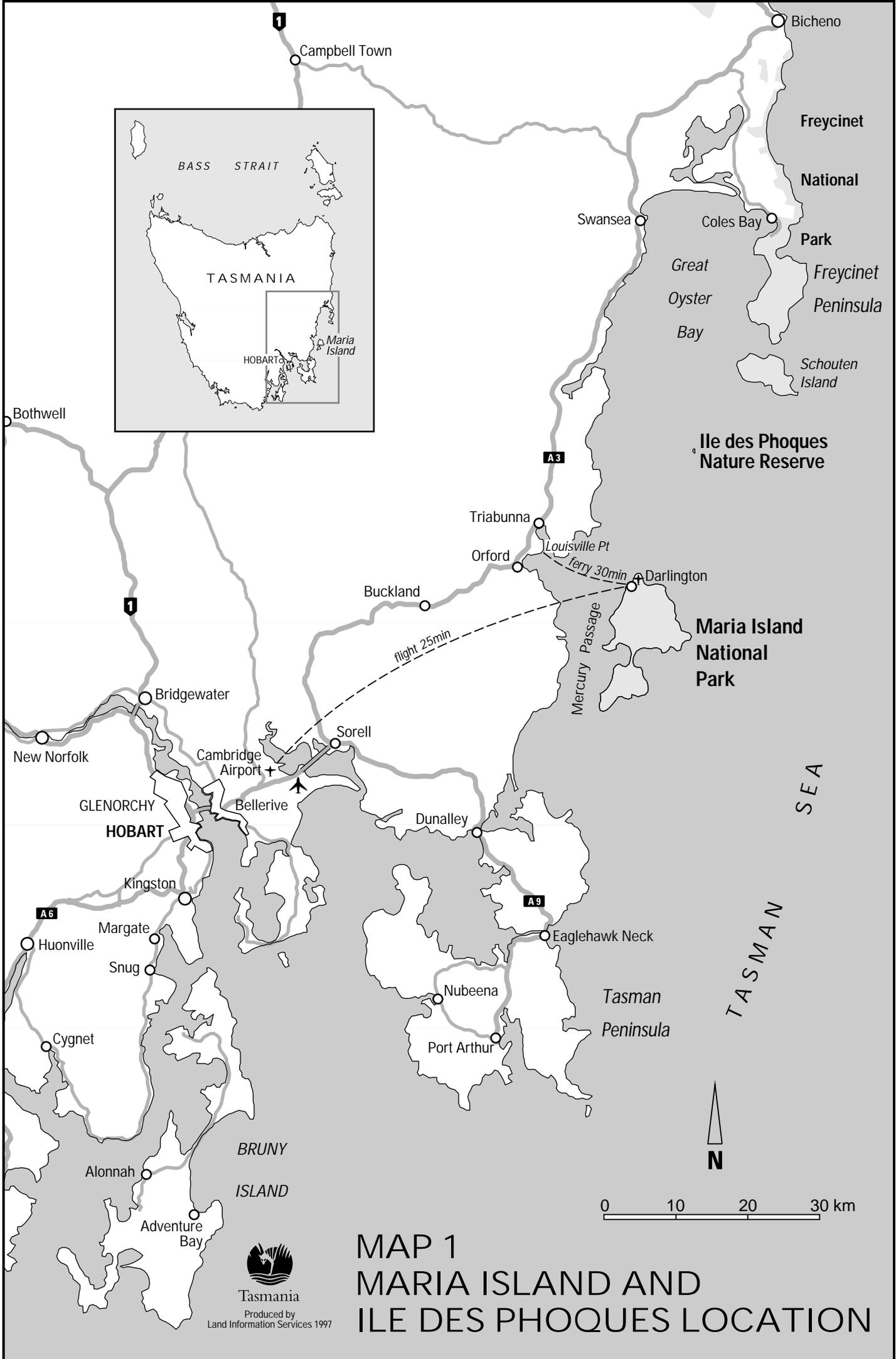
There are several locations around the coast where visiting boats can shelter. The beaches of the west coast and Riedle Bay provide easy access to the Park for boating parties but the eastern coast of the island is not readily accessible from the water.

The Parks and Wildlife Service maintains an authorised landing area at Cape Boullanger. A helipad has been constructed next to the radio installations on the ridge between Mt Maria and Mt Pedder. The direct route from Cambridge airport near Hobart to Darlington is about 65 km or 25 minutes by light aircraft. The landing area is used for management, tourist and recreational flights as well as occasionally by the Australian Army for training flights in Caribou aircraft.

Ile des Phoques is located 18.5 kilometres to the north of Maria Island, and about 11.5 kilometres south of Shouten Island. There is no public access and no facilities are provided. A charter vessel from Coles Bay sometimes visits the waters around Ile des Phoques.

#### *Issues and Implications*

The Park can be difficult to access and service. Although the ferry almost always can make the crossing of Mercury Passage, conditions sometimes make it difficult for ferry passengers to embark/disembark at the Darlington jetty, especially elderly people or people with disabilities. The landing area is sometimes closed by wet conditions.



The isolation of Ile des Phoques provides considerable protection for the natural values for which it was reserved. However, it is also difficult for Rangers to police illegal activity in the Reserve.

## **1.2 Regional Context**

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The Park is a component of the regional tourism industry of the east coast. Logging is widespread throughout dry sclerophyll forest along the east coast and the undisturbed forests of the Park are a valuable contrast to this activity. As a result, parts of Maria Island, particularly along the eastern coast and in the south, have been identified as having wilderness qualities which compare favourably to highly valued wilderness areas on mainland Australia (Lesslie et al, 1988, Tasmanian Public Land Use Commission, 1996a & 1997). The Park is listed on the National Estate.

Mercury Passage, between the island and the Tasmanian mainland, has identified aquaculture potential.

### *Issues and Implications*

The combination of location, and environmental and heritage features provide a contrast with, and a complement to other destinations on the coast where more developed, urban-style facilities are provided for visitors. However, many visitors to the Park do not extend their stay to include visits to the rest of the region.

## **2 Area, Boundaries and Reservation History**

### **2.1 Area**

---

The Park has a total area of about 11 550 hectares which includes a marine area of 1878 hectares (Map 2). Except for Lachlan Island in Mercury Passage, the Park includes all the islands, rocks, and reefs adjacent to the coastline, most notably Ile du Nord (Rabbit Island). The land mass stretches some 19.3 kilometres from north to south and is approximately 13 kilometres wide at its widest point.

The Ile des Phoques Nature Reserve covers approximately 7.4 hectares.

### *Issues and Implications*

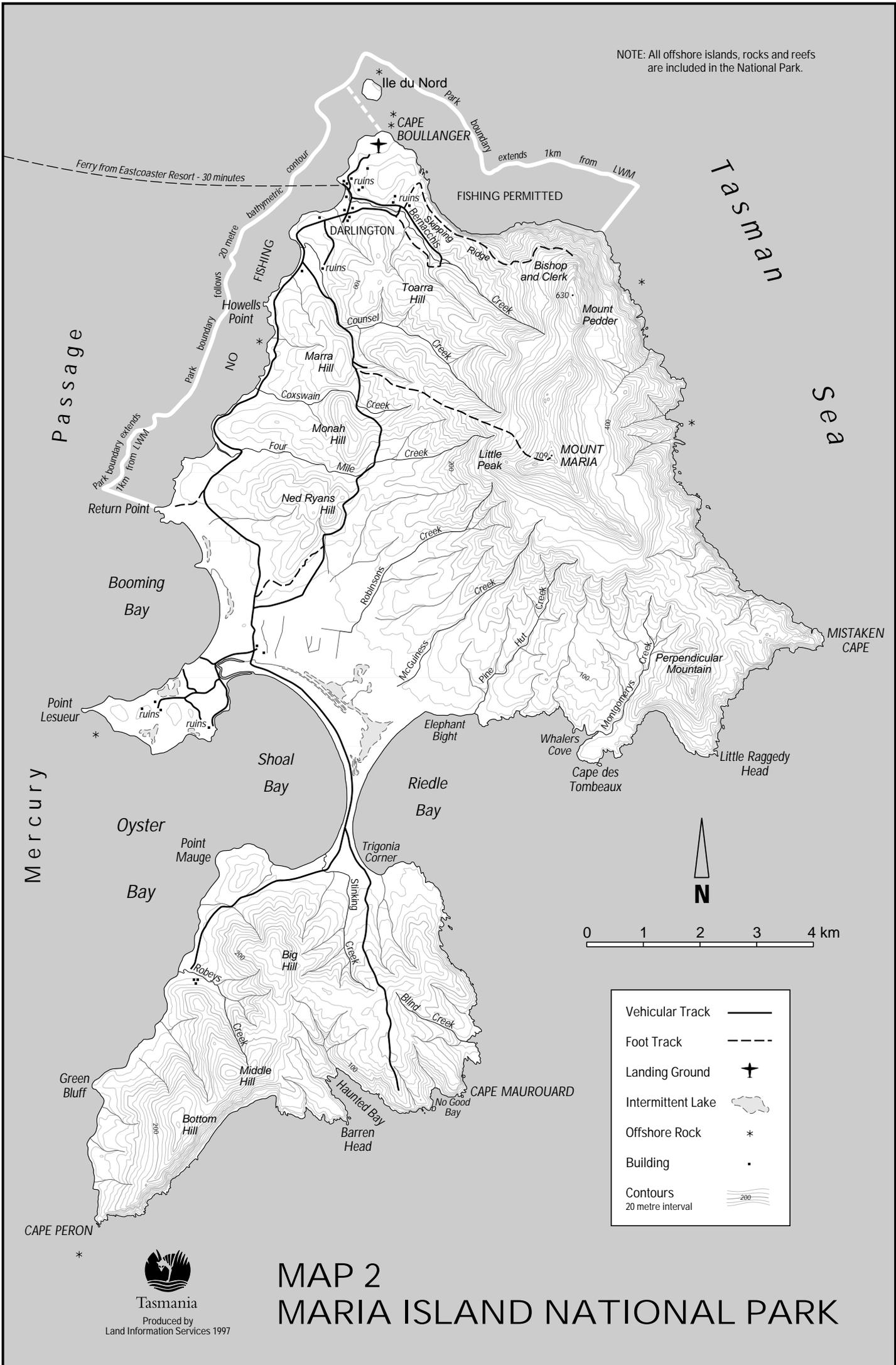
The size of the Park, and the long stretches of remote and rugged coastline strain the management and policing capacities of the Ranger staff. Management of boat based visitors is particularly difficult.

### **2.2 Boundaries**

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The Park covers all of the land mass of Maria Island extending to low water mark. The Park also includes a marine area which, approximately described, extends 1 kilometre seaward from low water mark at Return Point, parallels the low water mark to the headland immediately to the south of Four Mile Creek, then follows the 20 metre bathymetric contour along the coast to a point north of Cape Boullanger.

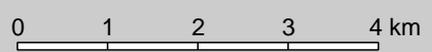
NOTE: All offshore islands, rocks and reefs are included in the National Park.



Passage

Tasman Sea

Mercury



Vehicular Track	
Foot Track	
Landing Ground	
Intermittent Lake	
Offshore Rock	
Building	
Contours 20 metre interval	



Tasmania  
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# MAP 2 MARIA ISLAND NATIONAL PARK

From there, to a point roughly north east of Bishop and Clerk, the boundary once again extends 1 kilometre offshore paralleling low water mark. The exact boundaries of the Park, including the marine extension, are set out on Plan Number LD 1288, registered in the Central Plan Office, Department of Environment and Land Management.

The Ile des Phoques Nature Reserve extends to low water mark. The boundaries of the Reserve are set out on Land Management Plan 87 filed and registered in the office of the Director of Lands at Hobart.

The Park and the Reserve are in the Municipality of Glamorgan-Spring Bay.

#### *Issues and Implications*

Clear marking of the marine boundary of the Park is important but marker buoys sometimes break off or wash away in heavy seas.

Monitoring undertaken in the marine area of the Park through the Ocean Rescue 2000 Project indicates that the present boundaries do not include the full range of habitats representative of Tasmania's east coast (Edgar & Barrett, 1993). Because of government decision at the time of the marine extension to the Park, the northern section of the marine area of the Park has no restrictions on either recreational or commercial fishing and in essence, has no greater protection of fish and marine plants than any unreserved marine area.

### **2.3 Reservation History**

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In 1971, Maria Island was declared a Sanctuary under the *Animals and Birds Protection Act 1928*. The reservation of the island as a State Reserve, to be known as the Maria Island National Park, was formally proclaimed on 6 June, 1972, by Statutory Rule No. 151. The marine extension to the Park was formally proclaimed on 23 September, 1991, by Statutory Rule No. 180 of 1991.

Ile des Phoques Nature Reserve was formally proclaimed on 29 March, 1978 by Statutory Rule No. 75 of 1978.

## **3 Topography, Geology and Soils**

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### **3.1 Topography**

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Maria Island is virtually two islands, joined by a low, narrow isthmus. The Maria Range forms the spine of the northern island, extending from Bishop and Clerk (630 m) in the north, south to Mt Maria (709 m), then to Perpendicular Mountain (340 m). East of the ridgeline is the East Shelf at an altitude of 350-500 metres. Scree slopes have formed on both the eastern and western sides of the range.

The eastern coastline consists of an indented line of granite headlands and cliffs which reach to 140 m in height at Mistaken Cape. In the north, coastal cliffs rise to 300 m at Fossil Bay. The western coastline is comprised of dune-barred lagoons behind a series of sandy beaches, interspersed with dolerite and sandstone points. McRaes Isthmus

which joins the two islands is formed by the hind dunes of Shoal and Riedle Bays.

The major ridgeline of the southern island consists of Big, Middle, and Bottom Hills and ends in the dolerite pillars of Cape Peron. Middle Hill rises to 300 metres. The eastern coastline between Barren Head and Cape Bald consists of a series of rounded granite headlands.

Ile des Phoques has cliffs rising to over 50 metres along its western shore falling to a lower shore in the east where there is easy boat landing in good weather. There is a blowhole on the eastern shore. The submarine sea caves in granite are considered of outstanding significance in Tasmania (Bradbury, 1993; Dixon, 1995).

#### *Issues and Implications*

The topography of Maria Island contributes to a varied and scenic landscape which is of great appeal to visitors. It also sets limits to practical access to and use of the Park.

### **3.2 Geology**

---

The geology of Maria Island is complex (Map 3). The oldest rocks, the Siluro-Devonian Mathinna Beds have been folded and metamorphosed and are exposed on the lower south-west slopes of Mt Maria and in the centre of the south island. Massive intrusions of Late Devonian granite occur along the eastern coast of the island, forming the distinctive headlands of the Mistaken Cape and Cape Maurouard areas.

Permian rocks unconformably overlie the Mathinna Beds of Siluro-Devonian age and occur in a band encircling the Maria Range and as a remnant in the north eastern corner of the south island. This series is richly fossiliferous in places and is well known for the prolific occurrence of the thick-shelled mussel *Eurydesma*. The cliff exposure in the Fossil Bay area is recognised as the best example of lower Permian strata in Tasmania, if not the world. It has been recognised as one of fifteen significant geoheritage sites identified on Maria Island (Bradbury, 1993). Siliceous Triassic sandstones overlie the Permian beds but outcrops are restricted to the edges of the Maria shelf and to scattered pockets in the west of the island, most notably in the vicinity of Howells Point known as the "Painted Cliffs".

Jurassic dolerite covers the sedimentary rocks over most of the western part of the Park and forms the peaks and ridges of the north island. Extensive dolerite talus slopes surround these high points. North-south Tertiary faulting resulted in down faulting of the western margin and uplift of the central and eastern part of the island, thereby exposing the geological sequence.

The most recent deposition consists of clays and alluvium in the valleys and lower levels of creek systems, and marine and aeolian sands around Chinamans Bay and the isthmus.

Ile des Phoques is composed of granite.

### *Issues and Implications*

The presence of a variety of geological features within a small area makes Maria Island an important location for geological education and interpretation. Some souveniring of fossils occurs.

During high tides or big seas, visitors have difficulty safely reaching the main area of the Painted Cliffs. Access routes to the Fossil Cliffs are unclear and some potential routes are hazardous.

### **3.3 Soils**

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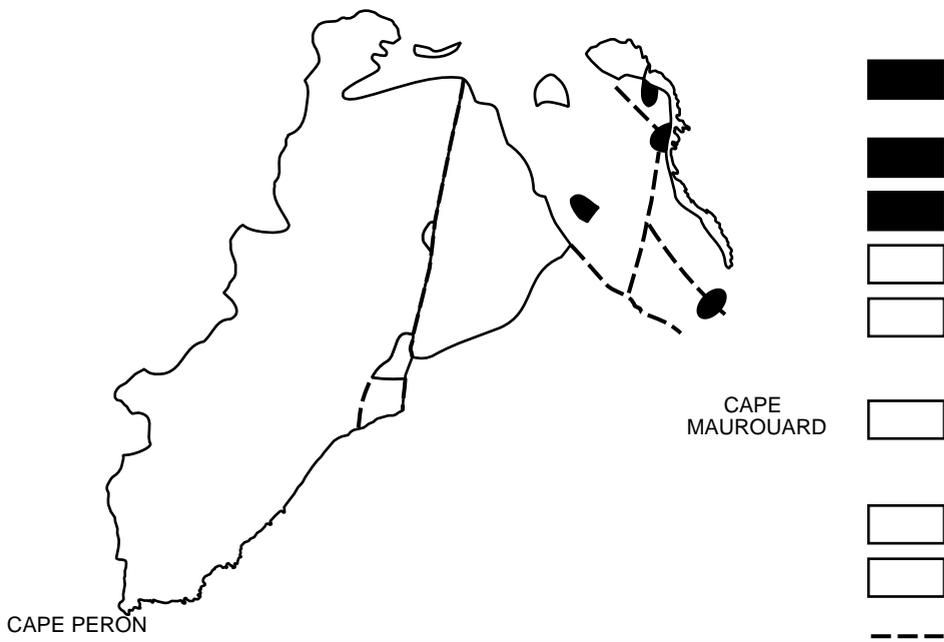
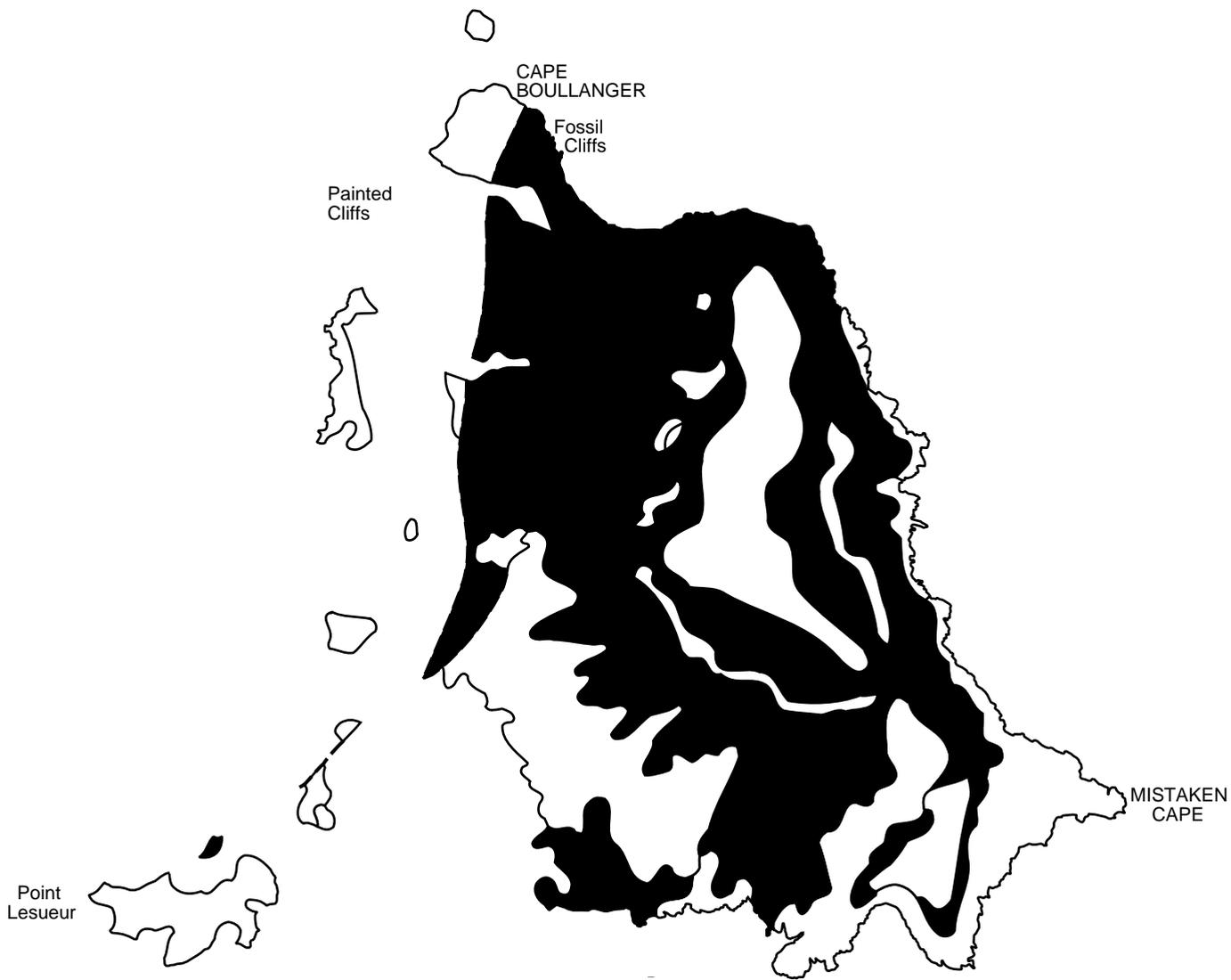
Except for the dolerite based soils, most of the soil groups on Maria Island are susceptible to various forms of erosion. Davies (1988) describes 5 major soil groups:

- Shallow, stony brown duplex soils occur on the dolerite hills on the eastern part of the island. Deep gradational black soil, on dolerite, occurs on lower slopes and flats (eg. near Darlington).
- Granite soils are located near Mistaken Cape and at Haunted Bay. Shallow, gravelly uniform sands are found on coastal headlands and deep gravelly duplex soils in more protected locations.
- Mudstone-sandstone soils occur on the lower slopes of Mt Maria, inland from Darlington and south of McRaes Isthmus. Shallow, uniform, stony sand is found on sandstone and a shallow duplex soil of a stony, fine sandy loam over clay on mudstone. Deep duplex and uniform soils are found on the lower slopes and flats such as near Fossil Cliffs.
- Recent clay and sand deposits are found on McRaes Isthmus. Calcareous sand forms beaches, dunes and sandy flats. Drainage flats and coastal lagoons contain a deep uniform clay sometimes with a surficial peat horizon.
- Stony yellow-brown dolerite soils occur on the high dolerite country around Mt Maria and Bishop and Clerk. Very stony, skeletal soils consisting of shallow loam occur on crests and upper slopes and stony gradational soils of gritty, stony clay over a yellowish brown or red clay occur on forested slopes.

Except for the shoreline, Ile des Phoques is mantled by a siliceous skeletal soil.

### *Issues and Implications*

Tunnel and gully erosion from past clearing and grazing is a problem, particularly in the Darlington area above the Fossil Cliffs and along drainage lines in the cleared areas around Darlington and Cape Boullanger. There are several active erosion gullies in the old vineyards area and a network of deep cracks has developed in the coastal grasslands. There are problems on the Bishop and Clerk track, and at Howells Point, Return Point and Pine Hut Creek. Bernacchi's Creek and its environs is degraded and damaged by erosion through loss of vegetation. Macropods overgrazing has exacerbated the problem.



The dunes behind Darlington Bay are subject to trampling by visitors. Potential dune erosion problems have been identified at Bloodstone Beach, Chinamans Bay and Pine Hut Creek. A combination of high tides and heavy seas caused unusually severe erosion of the frontal dune at Darlington Beach during 1994.

Some action has been taken to combat erosion but more work is required to control existing erosion problems and prevent future degradation.

## **4 Climate**

Maria Island, and Ile des Phoques to the north, have a temperate maritime climate. The prevailing winds are from the west and the island lies in the partial rain shadow of the Central Plateau and western ranges of Tasmania.

Rain is fairly evenly distributed throughout the year, but because of the effects of evapo-transpiration, effective precipitation is greatest in the winter months. The mean annual rainfall at Darlington is 677 mm, the highest mean monthly fall occurs in June and the lowest in September. The average number of rain-days per annum is 143.

Temperature figures are only available for Orford, adjacent to the island. The mean monthly maxima is 13.4°C in July and 22.7°C in February. Mean monthly minima for the same months are 2.8°C and 11.9°C respectively. The mean relative humidity at Orford exceeds 50% throughout the year. At low altitudes, frosts may occur between June and October but are likely year round at altitudes exceeding 300 m. During the summer months, strong northerly winds can combine with high temperatures to cause periods of extreme fire danger.

A variety of microclimates occur on Maria Island due to altitude, aspect, topography and vegetation cover. The western and north western slopes of the island receive most wind and sun, and have been subject to vegetation clearing and fire. Consequently the effective precipitation is diminished because of more rapid run-off and evaporation. Microclimatic effects have also resulted in the development of fire-sensitive sub-alpine and rainforest species communities in sheltered areas of higher altitude.

### *Issues and Implications*

The island climate has a number of implications for Park management. Mild dry winters provide a relatively safe, year-round, out-door destination which is of particular advantage to school and community groups. During the summer months, the danger of wildfire is greatly increased and often requires precautions, such as total fire bans.

The relatively low annual rainfall of the island necessitates careful use of water by both visitors and management.

The prevailing winds can cause rough, and, for small craft, sometimes unsafe conditions for boating in the Park, and the ferry service crossing Mercury Passage. Sea conditions in certain winds pose risks to ferry passengers embarking and disembarking at the Darlington jetty.

## 5 Vegetation

### 5.1 Native Vegetation

Brown and Bayly-Stark (1979) provide comprehensive information on the vegetation of Maria Island which is briefly summarised here. Fifteen vegetation units have been recognised as shown on Map 4. The most extensive vegetation unit is open-forest of *Eucalyptus obliqua* ( $\pm$  *E. globulus* and *E. viminalis*) with a shrubby understorey. Open-forest containing a mixture of eucalypt species over a predominantly grassy understorey covers most of the low dolerite hills on the western part of the island. Vegetation units on the Maria Range are tall woodland on talus, plateau shelf tall open-forest, tall woodland with wet sclerophyll understorey, scree slope mosaic and mountain top heath.

Based on Brown and Bayly-Stark (1979), the Park's forest communities have been mapped as part of the comprehensive regional assessment for the Tasmania-Commonwealth Regional Forest Agreement (Tasmanian Public Land Use Commission, 1996b). These assessment maps are useful for comparison of statewide forest types. Much of the forested areas of the Park has been identified to have wilderness values (Tasmanian Public Land Use Commission, 1996a & 1997).

In all, 566 species of vascular plants have been recorded in the Park (Brown and Bayly-Stark, 1979; Harris et al, in press), including 90 introduced species (mainly pasture plants and weeds, see Section 5.2). The island contains 56 taxa endemic to Tasmania, 5 of which are endemic subspecies, and the remainder are endemic species. Thirty four plants which are rare in Tasmania occur on the island, 10 of these also being rare at a national level.

The Park is the only known reserve for 6 species (see Appendix 4). A seventh species, *Rumex dumosus* var *dumosus*, currently known only to be reserved on Maria Island, may also be reserved at Township Lagoon Nature Reserve but the *Rumex dumosus* found there has not yet been determined to variety level. Another 24 species are known only from one other reserve, and 34 species are known to be in only two reserves other than Maria Island (see Appendix 4). *Cyphanthera tasmanica* is only known from Maria Island and Freycinet National Park. It appears to have a short life span but produces seed which may lay dormant in the soil for at least 30 years until a hot fire causes germination.

The Park is rich in poorly reserved plant communities of conservation significance (see Appendix 3).

Two important bird species (see Section 6.2) rely to a certain extent on particular eucalypt species. The forty-spotted pardalote requires *Eucalyptus viminalis* and the swift parrot requires *Eucalyptus globulus*.

No comprehensive vegetation study has been undertaken on Ile des Phoques. The vegetation cover is low and treeless, comprising a *Poa poiformis* dominated tussock grassland with a number of succulents. These include *Carpobrotus rossii*, *Tetragonia implexicoma*, *Crassula sieberana* and *Rhagodia candolleana*. Other species include *Pelargonium australe*, *Stylidium graminifolium*, and the grasses *Spinifex sericeus* and *Festuca plebeia*.

### Issues and Implications

The importance of the Park for vegetation conservation means that protection of all plant communities and species is one of the major considerations of management.

Clearing of vegetation and subsequent settlement and grazing have led to the simplification of some native plant communities.

Vegetation communities containing *Eucalyptus viminalis* or *Eucalyptus globulus* are important for the survival of endangered and vulnerable bird species.

More accurate knowledge of the plant's life cycle could benefit protection of *Cyphanthera*, and this taxon may reflect the requirements of a number of native species.

## 5.2 Introduced Vegetation

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Exotic trees and shrubs (plants not originally found in Australia) and some introduced "native" plants (Australian plants not originally found on Maria Island) have been deliberately planted in the past. The mature introduced trees, gardens and pastures are part of the history of the island and in some locations form cultural landscapes of historic heritage value (see Section 8.12). Some plants introduced as a result of settlement, including canary broom *Genista monspessulana*, horehound *Marrubium vulgare*, saffron thistle *Carthamus lanatus*, other thistle species, gorse *Ulex europaeus*, ragwort *Senecio jacobaea*, and fennel *Foeniculum vulgare*, spread easily, competing with native vegetation. Overgrazing by macropods has exacerbated the weed problem. Although gorse has not been recorded recently, dormancy of seed may mean its recurrence after a fire. Recently, a introduced species of erica has been discovered on the southern island.

Groves of young cypress trees *Cupressus macrocarpa*, and individual saplings, have established in the dunes and inland from Hopground Beach. Marram grass *Ammophila arenaria* is established on most dunes. Seeded radiata pines *Pinus radiata* occur around the ruins at Edina Point and Robey's Farm. Except for cypress, radiata pine, and willow *Salix sp.* occupying the mouth of Counsel Creek, none of the other introduced tree species has spread.

On Ile des Phoques, introduced species observed include *Lavatera sp.*, *Avena sp.*, *Sonchus asper*, *Bromus sp.*, *Cirsium sp.*, and *Anagallis arvensis*.

### Issues and Implications

Effective weed control requires planning and resources. The most pernicious introduced plant is canary broom, which has infested native vegetation in Bernacchi's Creek below the dam, the sides of the track to the dam, and the Skipping Ridge track to Bishop and Clerk. It appears to be able to establish and compete successfully in relatively undisturbed situations such as the slopes of Mt Maria and near Pine Hut Creek. It is very fire prone. Practical and effective options for control have not been found. Thistles have spread widely, even to more remote areas such as the slopes of Perpendicular Mountain. Effective thistle control will require active pasture management. Wild mignonette



*Reseda luteola* is becoming a serious problem, and is very difficult to remove once established. Weeds are dealt with on an ad hoc basis by spraying or grubbing out, often using the voluntary labour of visiting school or community groups.

The heritage significance of introduced plants needs to be established, and managed accordingly. Those without cultural heritage value are unwanted intruders on the island but the possibility of complete removal of many of the species is remote. Nevertheless, control and, where possible, eradication are important management requirements.

## **6 Fauna**

Prior to reservation, Maria Island had only a limited number of mammal species and no large marsupials. The island was initially reserved as a Sanctuary in 1971 for the primary purpose of providing a refuge for endangered species. Between 1969 and 1971, the Animals and Birds Protection Board (which, with the Scenery Preservation Board, was one of the forerunners to the Parks and Wildlife Service) implemented a program of animal introduction for the purposes of both species conservation and public exhibition. In this plan, the term "exotic" is used for non-Australian introduced species.

Ile des Phoques Nature Reserve was reserved to protect a seal colony and sea bird nesting sites.

### **6.1 Mammals**

Pademelons *Thylogale billardierii*, potoroo *Potorous apicalis*, common wombat *Vombatus ursinus tasmaniensis*, ringtail possum *Pseudocheirus peregrinus*, and echidna *Tachyglossus aculeatus* were the largest land animals present when Europeans first arrived on the island. Smaller mammals such as the water rat *Hydromys chrysogaster* and the swamp rat *Rattus lutreolus velutinus* are also native to the island (see Appendix 5).

#### *Issues and Implications*

Details of the small mammal populations are incomplete and some faunal survey work remains to be carried out, including completion of a small mammal inventory.

### **6.2 Birds**

A field survey and literature review of the birds of Maria Island (Rounsevell et al 1977), and more recent observations, record 129 species. Some species, most notably the Cape Barren goose *Cereopsis novaehollandiae* have been introduced. The species most likely to be observed are listed in Appendix 6.

The forty-spotted pardalote *Pardalotus quadragintus*, endemic to Tasmania and restricted in distribution to Flinders Island and south-east Tasmania, occurs in the Park. Its conservation status is listed as endangered and prospects for its survival justify great concern. Maria Island is the main secure colony of this species, where the population is considered stable and well protected. Habitat for the species on other

Tasmanian offshore islands is currently being protected. The Park has a breeding population estimated at approximately 850 pairs (Brown, 1989), which constitutes nearly half of the remaining birds. They occur along the western lowlands of the north island in dry sclerophyll forest and open woodland where *Eucalyptus viminalis* is present, and are thinly scattered throughout the south island. A recovery plan for the forty-spotted pardalote has been prepared (Bryant, 1991).

The swift parrot *Lathamus discolor* is listed as vulnerable. An estimated 5% of the remaining population breeds on Maria Island (Brown, 1989). The parrot nests in hollows of old growth trees. Nesting has been observed on Skipping Ridge and the lower western slopes of Mt Maria. The swift parrot predominantly feeds on nectar from blue gum *Eucalyptus globulus* flowers. Blue gum is widespread on the island in grassy and shrubby dry sclerophyll forests. A recovery plan for the swift parrot has been prepared (Gaffney & Brown, 1992).

There are muttonbird rookeries at Ile du Nord, No Good Bay and Point Lesueur. Beach breeding birds, including the hooded plover *Thinornis rubricollis* which is rare nationally and requires monitoring in Tasmania, use many of the sandy beaches and dunes in the Park, particularly at Darlington Bay, Bloodstone Beach and Riedle Bay.

Ground parrots *Pezoporus wallicus* were once common on Maria Island (Bryant, 1991a) but were not recorded by Rounsevell et al (1977) and are probably extinct in the Park.

Ile des Phoques has mutton bird *Puffinus tenuirostris* rookeries. Sea eagles *Haliaeetus leucogaster* and peregrine falcons *Falco peregrinus macropus* nest there, as do diving petrels *Pelecanoides urinatrix*, white-faced storm petrels *Pelagodroma marina*, fairy prion *Pachyptila turtur*, and little penguins *Eudyptula minor*. Brown falcons *Falco berigora* and a swamp harrier *Circus approximans* have been sighted on the Ile and the carcass of a Fiordland penguin *Eudyptes pachyrhynchus* found.

#### *Issues and Implications*

Management of the Park needs particularly to ensure protection of endangered, vulnerable or rare bird species. Disturbance near a sea eagle nest can cause them to abandon the nest site.

### **6.3 Reptiles and Amphibians**

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The three species of Tasmanian land snakes have been recorded in the Park. These are the tiger snake *Notechis ater*, copperhead *Austrelaps superbis*, and white-lipped whipsnake *Drysdalia coronoides*. The blue-tongue lizard *Tiliqua nigrolutea* occurs as does six other species of skinks. Five species of frogs have been recorded. Reptile and amphibian species are listed in Appendix 5.

### **6.4 Introduced Land Species**

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Forester kangaroos *Macropus giganteus tasmaniensis* and Cape Barren geese *Cereopsis novaehollandiae novaehollandiae* were introduced to the Darlington area between 1969 and 1971 in an effort to ensure conservation of the species. Habitat available to the kangaroo on mainland Tasmania had shrunk, and the population of geese on the Bass Strait Islands was low.

Goose numbers have fluctuated widely from the initial population of 36. The number of breeding pairs has declined in recent years because of grazing competition with wallabies and kangaroos. The number of non-breeding geese fluctuates widely in response to seasonal conditions from less than 10 to over 200. Recent culling of wallabies and kangaroos may benefit geese by relieving grazing pressure.

Initially, 45 forester kangaroos were introduced to the Park. By 1985, the population was estimated at 1 800 animals. In 1985 and 1986, high densities resulted in widespread mortality through disease among yearling kangaroos. There have been recurrences of this. By 1993/94, the forester population was approximately 1 500 animals, occupying most suitable habitat on the island. Overgrazing was occurring and mortality through disease increasing. The Bennetts wallaby *Macropus rufogriseus rufogriseus*, also introduced, had an estimated population in 1993/94 of 4 000. Culling in 1994, and again in 1995, substantially reducing the number of kangaroos and Bennetts wallabies. Although native to the Park, Tasmanian pademelon numbers had also increased in number, particularly in the Darlington area. Their numbers were also reduced by culling.

Other introduced species include the brushtail possum *Trichosurus vulpecula fuliginosus*, Tasmanian bettong *Bettongia gaimardi*, eastern barred bandicoot *Perameles gunnii*, southern brown bandicoot *Isodon obesulus affinis*, Tasmanian native hen *Gallinula mortierii*, and emu *Dromaius novaehollandiae*. Of these, the bettong, and the Tasmanian native hen in particular have thrived. The Park is no longer seen as an important refuge for introduced species but remains a convenient area for study of the geese and native hen populations, since it contains large accessible populations of known age. Annual monitoring of Cape Barren geese is undertaken by Parks and Wildlife Service staff and a long term study of native hens by university researchers is in progress.

Exotic mammals introduced to the Park include rats, mice, cats and fallow deer. Some exotic birds have also been introduced or arrived from mainland Tasmania (see Appendix 6). Periodic control programs, involving the trapping and/or poisoning of cats and rats, are carried out. Deer are protected wildlife in Tasmania but their presence in the Park is undesirable because they exert a substantially alien grazing pressure on plant communities. Further, they are hard-hoofed animals which, if they reach larger population levels, are likely to cause erosion problems. The deer population has been substantially reduced, and in 1994 only several animals remained. Appendix 5 includes Australian native and exotic land vertebrates introduced to the Park.

#### *Issues and Implications*

Browsing and grazing by the forester kangaroo and the Bennetts wallaby has had serious impacts. The result is regeneration failure of many trees, shrubs and herbs in grassland, grassy open forest and heathland communities and erosion problems along the foreshore, drains and watercourses.

Introduction of species not indigenous to the Park is viewed now as out of keeping with the concept of a national park and has been discontinued. Parks and Wildlife Service policy is to remove introduced species where practicable. Problems caused by previous introductions remain

and, in the case of macropods, are difficult to deal with effectively because of the extensive area of developed pasture and grassland. High densities of animals develop and impact on the native vegetation.

Deer, cats, rats and mice have impacts on native species and ecosystems.

Introduced species such as forester kangaroo and Bennetts wallaby frequently suffer from disease. In each case, the disease is typical of captive populations living under crowded conditions, apparently a product of the lack of dispersal opportunities in an island environment. The condition known as "lumpy jaw" is occasionally found in some macropods, exacerbated by eating inappropriate food offered by visitors.

## **7 Marine Flora and Fauna**

Peron, when visiting Maria Island in 1802, noted that "the marine animals were very abundant on these shores, and we saw huge troops of dolphins, cetaceans and innumerable legions of seals" (Plomley, 1983: 72). A similar abundance of seals was reported around Ile des Phoques (Ranson and Brown, 1987). The waters of Maria Island still contain a rich marine flora and fauna representative of a variety of Tasmanian east coast habitats (Edgar 1981), though unfortunately much diminished since Peron's time. For this reason, a stretch of the coastal waters around the north western shores of the Island has been added as a marine extension to the Park. The marine area of Maria Island National Park is the most significant representation of the Maugean biogeographic province reserved in Tasmania (Kriwoken, 1991). It includes rocky reefs with large underwater caverns and caves in Fossil Bay, although these reefs are not protected from fishing. Sandstone reefs occur at Howells Point. There are extensive seagrass beds which act as fish nursery areas. Much of the information set out below is drawn from Edgar (1981).

### **7.1 Marine Flora**

The flora of the sandstone regions usually possess *Hormosira banksii* and *Cystophora torulosa* in the intertidal zone, merging into a sub littoral zone of *Cystophora moniliformis*, *Caulocystis cephalornithos*, and *Acrocarpia paniculata*. *Ecklonia* is the dominant algae below two metres, but *Cystophora xiphocarpa*, *Carpoglossum confluens* and *Cystophora retroflexa* are also commonly present. Doleritic areas have a *Phyllospora* and *Ulva* sp. zone above the *Ecklonia*, and the *Cystophora* species are not as evident as in sandstone areas.

Areas of soft substrate, offshore from the rocky reefs, usually have beds of the seagrass *Heterozostera tasmanica*. In Mercury Passage, this species extends to considerable depths (greater than 10 metres) where it becomes quite sparse and associates with *Cystophora grevillea*. Another seagrass, *Amphibolis antarctica*, is found in dense beds in shallow water from Howells Point to Booming Bay.

Issues and Implications

Significant areas of seagrasses and macroalgae typical of sheltered habitats near Chinamans Bay are not reserved in the Park.

Scouring by mooring chains and boat movements can cause damage to seagrass beds (Rees, 1994).

Boat effluent discharge and run-off from the land can introduce sufficient nutrients to support excessive growth of algal epiphytes, leading to seagrass dieback.

## **7.2 Marine Fauna**

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The marine fauna of the Park includes a great variety of colonial animals, including yellow zoanthids and numerous species of sponges, ascidians, hydroids, anemones, alcyonarians, and, in deeper water, gorgonians. Feather worms *Sabellastarte* sp. are abundant on sandstone reefs. A dense population of large yellow ascidians occurs in deep water on the floor of Mercury Passage.

The sea stars *Petricia vernicina*, *Austrofromia polypora* and *Nectria ocellata*, abalone *Haliotis ruber*, and rock lobsters *Jasus edwardsii* are found predominantly in exposed waters, but also extend to the more sheltered Mercury Passage reef habitats.

Species common in western Maria Island waters include the echinoderms *Stichopus mollis*, *Comanthus trichoptera*, *Comanthus tasmaniae*, *Tosia australis*, *Patiriella calcar*, *Patiriella gunni*, *Patiriella exigua*, *Coscinasterias calamaria*, *Goniocidaris tubaria* and *Amblypneustes ovum*, and the crustaceans *Palaemon serenus*, *Rhynchocinetes rugulosus* and *Plagusia chabrus*. Although many molluscs (such as the nudibranchs *Ceratosoma brevicaudatum* and *Neodoris chrysoderma*) are diurnal, most of the larger species (including *Amorena undulata*, *Pleuroploca australasia*, *Fusus novaehollandiae*, *Antepladium semigranosum* and *Xenogalea pyrum*) move about at night.

Jackass fish *Nemadactylus macropterus*, butterfly perch *Caesioperca lepidoptera*, barber perch *Caesioperca rasor*, banded morwong *Cheilodactylus spectabilis*, beardies *Lotella callarias* and rosy wrasse *Pseudolabrus psittaculus* are all abundant in sub-maximally to maximally exposed waters. Fish which are more abundant in sheltered waters include the hardyheads *Atherinosoma microstoma* and *Atherinosoma presbyteroides*, little rock whiting *Neodax balteatus* and brown-striped leatherjackets *Meuschenia australis*. A further group of fish widespread around the coast includes purple wrasse *Notolabrus fucicola*, blue-throated wrasse *Notolabrus tetricus*, senator fish *Pictilabrus laticulavivus*, toothbrush leatherjackets *Penicipelta vittiger*, trachinops *Trachinops caudimaculatus* and bullseyes *Pempheris mutiradiata*.

Several warm temperate species reach northern Maria Island and Ile du Nord waters but are not generally abundant on the Tasmanian east coast. These fish, which are often present in substantial numbers, include pencil rock whiting *Neodax beddomei*, castelnau's wrasse *Dotalabrus aurantiacus*, herring cale *Olisthops cyanomelas*, boarfish

*Pentaceropsis recurvirostris*, mado *Atypichthys strigatus* and rock blackfish *Girella elevata*.

Ile des Phoques supports a small Australian fur seal *Arctocephalus pusillus doriferus* colony.

#### *Issues and Implications*

Fishing could interfere with the success of the marine area of the Park as a nursery and replenishment area for nearby waters. Despite this, the northern part of the marine area of the Park provides no protection for marine fish species

### **7.3 Introduced Marine Species**

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The introduced macro algae *Undaria pinnatifida* (a kelp) occurs within the waters of the Park, particularly at the southern end of the marine area of the Park around Return Point, but with small occurrences near Darlington. It is not particularly prevalent within the Park compared to large beds occurring along the coast of the mainland opposite. *Undaria* is an annual and there is no feasible way of eradicating it.

The northern pacific seastar *Asterias amurensis* is regularly found on scallop spat collector cages in Mercury Passage, adjacent to the waters of Maria Island National Park. While it is inevitable that some seastars will eventually occur in the Park, none have been recorded to date. Because of the undisturbed habitat and competitors for food sources, it is not anticipated that the seastar will become a major problem in the Park (Barrett, pers. comm.). However, in its natural range in Japan, the species undergoes massive population explosions on an approximate 10 year cycle (Edgar, pers. comm.).

#### *Issues and Implications*

*Undaria* is rapidly expanding its range and is likely to spread further in the Park, threatening seagrasses in the area.

The possible impacts of *Asterias* cannot confidently be predicted with current knowledge.

## **8 History and Development**

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People have had a long history on Maria Island. The activities of different groups of people from Aboriginal hunter-gatherers through a period of European exploration, colonisation and industry have all made an impact on the natural environment to create a rich and diverse Aboriginal and historic heritage.

### **8.1 Aboriginal Heritage**

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European knowledge of human history on Maria Island, prior to settlement, is restricted to a combination of historical records and archaeological investigation of the sites created by thousands of years of Aboriginal occupation and use.

Maria Island is within the territory of the Oyster Bay tribal group (Brown, 1991). While documentation on Tasmanian Aborigines is generally poor, the historical records relating to the *Tyreddeme*, the band of the Oyster Bay tribe occupying Maria Island at the time of colonisation, offer some of the most detailed accounts of Aboriginal life at this time. This is primarily due to the nature and timing of initial contact between early explorers and Aborigines in this part of the state. Vivid accounts of meetings with Aborigines written by French explorers give a good idea of the way of life of the island band. Archaeological research has added to the knowledge of Aboriginal culture prior to invasion. There is now evidence which shows that Aboriginal people have lived in Tasmania continuously from at least 37,000 years ago, spanning the coldest periods of human history. The earliest archaeological evidence of Tasmanian Aboriginal use of the east coast of Tasmania dates from about 6,000 years ago (Brown, 1991).

Offshore islands, such as Maria Island, are very important to people with an economy focussed on marine resources as they offer increased coastal areas from which to extract these resources. The Oyster Bay Tribe was one such group. The *Tyreddeme* expanded their coastal territory by travelling on canoes, constructed from rushes, between mainland Tasmania and Maria Island (Brown, 1991).

Although it appears Aboriginal people did not occupy Maria Island on a permanent basis, they lived there for extended periods and carried out a variety of social activities (Brown, 1991). The *Tyreddeme* built huts, buried their dead and gathered a variety of food sources from the island.

The use of shellfish in the diet of the *Tyreddeme* is emphasised by the Aboriginal shell middens around the coast of Maria Island. These middens were noted by early explorers (Brown, 1991) and have survived to the present day, in spite of the widespread destruction of many for use in early European building. The hinterland of the island provided food sources in the form of vegetable foods and game. Hunters regularly burned thick vegetation to make it easier to travel through and to encourage new growth to attract game.

Maria Island is rich in a variety of resources, in addition to the food sources, which were used by Aboriginal people. Ochre was a valuable trade item, important for Aboriginal ritual, most obviously used in hair decoration and other body adornment. It occurs along the western shoreline, particularly at Bloodstone Point.

#### *Issues and Implications*

The archaeological values of Aboriginal sites have not yet been explored in any detail. However, they have the potential to answer a number of questions about past Aboriginal adaptation and island use.

The Aboriginal sites and landscapes of Maria Island have a strong and continuing significance to the Tasmanian Aboriginal community. Sites need to be located and protected, particularly from the impacts of development and visitor use. There is potential for the Tasmanian Aboriginal community to promote and interpret these sites to the wider community and provide greater understanding of Aboriginal culture on Maria Island.

## **8.2 Historic Heritage**

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The history of European exploration and development of Maria Island is well documented (for instance, see Peron 1809, Weidenhofer 1978, Brand 1979) and constitutes some of Tasmania's and Australia's best ethnography. The island was first noted by Abel Tasman. On December 4, 1642, Tasman sailed along the east coast of the island and named it Maria, in honour of the wife of Anthony Van Dieman, the Governor General of Batavia. Subsequently, the island was visited by a number of explorers including du Fresne in 1771, Furneaux in 1773, Cox in 1789, Baudin in 1802 and Kelly in 1816.

Whalers and sealers arrived by the beginning of the 19th century with sealers reported to have slaughtered 2000 fur seals on Maria Island in January and February of 1805 (Nichols, 1977). A whaling station was operating at Whalers Cove in 1825. Other whaling stations were on Ile du Nord and in the south at Whalebone Point in Haunted Bay in 1836. By 1842, with the beginning of the second convict period, the whalers were warned off for security reasons (Evans, 1993). No buildings have survived, although some ground features have been found at Whalers Cove (Kostoglou, 1995).

On Ile des Phoques, there are a series of relict stone structures, including a high rock wall and fire place. These structures indicate the use of the Ile by sealers and the site is of high significance (Ranson and Brown, 1987; Kostoglou, 1995).

On Maria Island, buildings, structures and plantings mark the activities of the years 1825-1930, particularly at Darlington and Point Lesueur. Evidence of post 1930 pastoralism and subsequent National Parks Service activities are also apparent. Remains from each period of activity on the island contribute to the present Park environment.

## **8.3 The First Convict Period: 1825-1832**

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Governor Arthur directed that a penal settlement be established on the northern part of Maria Island to relieve the settlement at Macquarie Harbour. It was located at Darlington because of the combination of a good anchorage, accessible shore, fresh water and sheltered site. Although the isolation of the island proved ineffective as a deterrent to escape, it was the original reason for the move to Maria Island.

The only remaining buildings of the First Convict Period are the Penitentiary and the Commissariat Store. The Penitentiary overlooked a considerable factory complex, the remains of which have some importance as an early industrial site. On the hillside to the west of Darlington, the Commandant, Major T. D. Lord, constructed his own residence, the footings of which are still visible. Areas of land were cleared for cultivation at this time, and brick making, lime making and sandstone quarrying began.

During this period, convict numbers were probably never greater than about 150. After the abandonment of the settlement in 1832, the buildings were left to pastoral lessees and whaling activities, and by 1841 some buildings had gone, and most were in poor repair.

#### **8.4 The Second Convict Period: 1842-1850**

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The Convict Station at Darlington was reopened in 1842 and at times during this period over 600 convicts lived on the island. The original buildings were generally re-used, but a major building program was initiated, and most of the structures on the island date from this period of activity. The northern end of the island was developed for farming. The Barn and the windmill with its attendant Miller's Cottage were built on the hillside overlooking the farm land.

South of Darlington, the Oast House had been built some time before 1845 and the hop gardens, which had been used during the first settlement, were extended. The road from Darlington and the stone abutments of the bridge across the creek are still visible.

The Irish political exile, Smith O'Brien was imprisoned at Darlington. In December 1846 five Maori political prisoners were transported to Maria Island for allegedly rebelling against the British in New Zealand. Hohepa Te Umuroa was the only one not to see his native land again. He died on Maria Island in July 1847 and was buried in the 'free' cemetery (which was established in 1825, with the last burial in 1942). His remains were exhumed in August 1988 in the presence of Hohepa's tribal descendants and have been laid to rest in a burial ground in his tribal area near Wanganui.

#### **8.5 The Point Lesueur (Long Point) Probation Station: 1845-1850**

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The major development away from Darlington was the probation station at Point Lesueur (then referred to as Long Point). This was a substantial and largely independent settlement, although smaller than Darlington itself. Its location was determined by the availability of good farm land. To reach the station, a road was built from Darlington.

The buildings were of poorer quality than those at Darlington, being either timber, or constructed of locally produced brick. The sloping ground was levelled into two stepped courtyards and the embankments for these can still be seen. The building group was roughly the same size as the Darlington enclosure. The Point Lesueur probation station accommodated a maximum of 336 men (in 1846) which was considerably more than the entire population of the first Convict settlement. By 1850 it had been abandoned.

Once abandoned the buildings deteriorated rapidly. This, and the re-use and/or demolition of structures by the families who subsequently farmed the area, means little evidence remains above ground to indicate the size and importance of the Point Lesueur station. The remaining brick structures and the later introduced plantings dominate all views of the area, principally from the present approach track, from all seaward approaches and from the top of the hill above Belvedere. Total clearance of vegetation from the western half of the point reinforces this dominance. The brow of the hill location of the Convict period structures emphasises their sense of isolation.

## **8.6 Period 1850 - 1884**

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Maria Island was entirely abandoned as a probation station by 1850 and thereafter the island was leased to a succession of pastoralists.

At Point Lesueur, the Dunbabin family farmed the area in the 1850s and cleared most of the buildings. Homestead ruins, fence-lines and exotic plantings, particularly the shelter belt within the original compound, remain as evidence.

For a period during the late 1800s several Chinese fishermen reportedly carried on a small but lucrative abalone ("muttonfish") industry in the vicinity of Chinamans Bay (Dunbabin, 1954). They supplied Chinese miners on the Victorian goldfields and possibly overseas. Recent sub-surface remains located in 1995 may be evidence of this activity.

## **8.7 The Bernacchi Period: 1884 - 1896**

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In 1884, Diego Bernacchi arrived and his influence and enthusiasm dominated the island for the next 45 years. He was responsible for a variety of commercial developments ranging from silk making to cement production. Between 1885 and 1888 the Darlington area was changed from the remains of a prison compound to an open settlement very similar to the present day. The settlement was surrounded by cultivated areas, with enclosed gardens planted around some of the houses. In keeping with the vision of Maria Island as an island paradise, the Grand Hotel was built on the hillside behind Bernacchi's house. This was intended to be a health resort on the lines of the famous spa hotels of Europe. The Coffee Palace was built in the valley below in 1888 to provide accommodation and refreshment.

Bernacchi developed the Cement Works, serviced by a tramway to the jetty. The northern end of the island was used for agricultural purposes, with two small vineyards planted on the north facing slopes. South of Darlington, the Oast House was used during this period for the pressing of grapes. During the 1890s, the depression dampened the enthusiasm of Diego Bernacchi. The island never flourished as envisaged and, in 1896, operations effectively ceased on the island.

## **8.8 Period 1896 - 1920**

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Maria Island was opened to selectors, and several families took up land. A number of farm dwellings were built, chiefly on the western side of the island. At Point Lesueur, "Kintail" and "Belvedere", occupied by the Macrae's, date from the 1890s. Bernacchi lived for a while in Belvedere, and his daughter in Kintail, which overlooked the Edina Point jetty. Belvedere and Kintail were both substantial houses built on high ground. Only ruins and footings remain of these and the other dwellings built during this time. Around Kintail a number of introduced plant species survive, notably a lavender rockery. The Edina Point jetty probably dates from this period, although it may have been initiated during the Convict Period.

### **8.9 The Industrial Period: 1920 - 1930**

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The National Portland Cement Company was formed in 1920, with Bernacchi's involvement, to develop cement works on Maria. A large industrial complex, technologically in advance of any other in the southern hemisphere, was opened in 1924. The Darlington settlement was again re-used. Darlington received an electrical supply for the first time and water was reticulated. During this period, a tramline ran from Bloodstone Point to the jetty on the north side of Point Lesueur and this formation is still discernible. By 1927, the Company was experiencing trading difficulties and cement production ceased by 1930.

### **8.10 Period 1930 - 1965**

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After closure of the cement works, a few families stayed on, undertaking pastoral activities. Robey's farm and French's farm remain from this period. There were occasional visits by tourists to enjoy the peaceful atmosphere. Commercial fishing out of Darlington also occurred from the 1940s through to the 1960s. Some limestone quarrying occurred.

### **8.11 Conservation and Recreation Period: 1965 - Present**

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In 1962, concerned at the loss of dry forest habitat through agricultural clearing, the Animals and Birds Protection Board recommended that Maria Island be proclaimed a reserve for the conservation of endangered animal species. Acquisition of freehold land began in 1965, and in 1968 the first Ranger, Rex Gatenby, was appointed. At this time, introduction of native animals to the island began. In 1971, Maria Island was declared a Sanctuary under the Animals and Birds Protection Board. In the following year it was proclaimed a State Reserve under the management of the then National Parks and Wildlife Service. Sheep grazing continued under a lease arrangement. Eventually, in 1981, sheep were removed from the Park.

The popularity of the Park for recreation and education rose significantly after it was reserved. Darlington became the Park management centre and visitors camped in the Bernacchi's Creek valley or used various historic buildings.

Most of the known remnants, including quarries, tramways and buildings received a preliminary archaeological appraisal (Forward Consultants 1984a). The complete and near-complete buildings were also the subject of a conservation study (Forward Consultants 1984b). Early conservation works consisted of general repairs and repainting of most buildings, with some adaptations for visitor and management use. In 1971 and 1977 parts of the remainder of the National Portland Cement Company works were demolished for safety reasons. These works were carried out without long term plans for the Darlington area. Necessary archaeological and architectural background information was limited, as was finance. Works programs operated separately, rather than as part of an overall conservation project.

In 1992, a comprehensive Conservation Plan for the Darlington precinct on Maria Island was prepared by consultants Godden Mackay (1992). This report sets out, in accordance with the Burra Charter of Australia ICOMOS (Marquis-Kyle & Walker, 1992) and its associated guidelines,

recommendations for the retention and conservation of the Darlington heritage precinct. Conservation plans for individual buildings have been prepared for Bernacchi's Terraces (Godden Mackay, 1991), and, in one document, for Smith O'Brien's Cottage, the Mess Hall, and the Coffee Palace (Godden Mackay, 1995).

In the summers of 1995 and 1996, a Maria Island Cultural Resource Survey, using student volunteers, catalogued artefacts and identified and recorded historic sites.

#### *Issues and Implications*

The layering of history, at Darlington in particular, presents a complicated but fascinating opportunity for interpretation and education. However, the significance and integrity of the historic precincts and sites needs to be respected and maintained. In 1996, some important buildings, such as the Penitentiary, still have no conservation plans prepared for them. Funding is limited and the costs of maintaining the historic fabric considerable.

At Point Lesueur, except for convict cells which have been fully stabilised, remaining structures and ruins are in extremely fragile condition. Further loss of material will continue to diminish the impact of an historically important area. Constant supervision of the area has not been possible and is unlikely in the future. Vandalism continues to occur, particularly around Kintail which is close to the campground at Encampment Cove, and at Frenchs Farm and Robeys Farm.

Progress on conservation work, and the scale of works are both heavily dependent on available funding. A preliminary estimate of the order of costs for the Darlington Zone, made in 1992, was approximately \$4 to \$8 million. The figure is based on costs associated with a range of works and therefore will be influenced by the way in which work proceeds (eg. as several large contracts, many single contracts, a rolling program etc.). The island location increases costs.

### **8.12 Heritage Vegetation and Cultural Landscapes**

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During the periods of European activity, plants were introduced to the island for landscaping, windbreaks, orchards and house gardens. These now form an important part of the landscape of Darlington, giving a sense of time and scale as well as a feeling of protection and seclusion. Pasture areas retain something of a settled pastoral atmosphere.

Amongst the species remaining today are Monterey cypress *Cupressus macrocarpa*, radiata pine *Pinus radiata*, Lombardy poplar *Populus nigra Italica*, silver poplar *Populus alba*, willows *Salix* sp and a range of ornamental and fruiting trees and shrubs including figs *Ficus carica*, walnut *Juglans nigra*, agave *Agave* sp, escallonia *Escallonia* sp, lilac *Syringa vulgaris* and agapanthus *Agapanthus africanus*. In Darlington, cypress and poplar, form an avenue through the settlement, radiata pines form two windbreaks to the west and south, while the other species are mainly concentrated along Bernacchi's Creek. Beyond Darlington, there is a grove of cypress at Hopground Beach and a dense growth of willows near the mouth of Counsel Creek. Further south, a number of cypress help to mark the site of the Long Point Probation Station amidst the old pastures of Point Lesueur. Much of the pasture land at Darlington and Point Lesueur dates from the First and Second

Convict Periods. Other areas of remnant pasture and mature introduced vegetation occur around French's Farm and Robey's Farm and along the route to Darlington.

Most introduced trees in Darlington were planted between about 1884 and 1930, during the periods of Bernacchi and the National Portland Cement Company. At the time when the cypress avenue was planted (c.1922) the Lombardy poplars were already well-established trees.

#### *Issues and Implications*

Many trees are now dead and most trees have a large number of dead or dying branches. At Bernacchi's Creek, toward the lower part of the campground, the death of trees has detracted from the attractiveness of the campground. Also, degradation of pastures by erosion, weed invasion and scrub development is widespread. It is estimated that approximately 25% of the trees of the Bernacchi period have disappeared since 1983. Among the lost species is the avenue of English elms *Ulmus procera* which in 1983 lined the road to the hop ground. Hewett (1984) recommended a program of preventive management for the historic trees to first, remove dead wood, fell dangerous trees, propagate and collect seed; second, structurally modify and strengthen trees; and third, improve site conditions and tree vigour. To date, only dead wood and dead trees have been removed in accordance with these recommendations.

If the cultural landscapes and historic atmosphere of Darlington and other historic precincts and sites are to be retained and enhanced, further treatment, replacement and care of introduced plants will be necessary, as will maintenance of pasture in the immediate vicinity of the historic precincts. Some introduced plants of cultural significance are self seeding and need to be managed to prevent them spreading inappropriately. Planning and assessment of proposals for introducing new elements in these cultural landscapes needs to be rigorous if their values are to be protected.

### **8.13 Shipwrecks**

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A number of shipwrecks are known to lie off the coast. These include:

Apollo	1827 Brig 150 tons, north end of island (O'May 1955, Maritime Archaeological Association of Tasmania, 1980).
Edina	1900 Edina Point
Glenloth	1901 Fishing smack, south end of island (O'May 1955).
Zephyr	1913 Schooner, Point Lesueur (O'May 1955, M.A.A.T. Interim Report 1983)

In addition, several smaller wrecks from the National Portland Cement Company operations are in Darlington Bay and other possible shipwreck sites have been located off Magistrates Point (Cook 1984 pers. comm), in Bernacchi Creek, and Riedle Bay (Haig & Marmion 1995, pers. comm). The archaeological significance of these shipwreck sites has not yet been determined. All shipwrecks more than 75 years old are protected under the Commonwealth *Historic Shipwrecks Act* 1976. This Act requires the notification of discovery of any wreck, irrespective of age.

## **9 Fire**

### **9.1 Fire History**

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Early European navigators and explorers made references to the Aborigines using fire both at campsites and for burning off vegetation. Marion du Fresne (1772), Furneaux (1773), Bligh (1777), D'Entrecasteaux (1792) and Baudin (1802) all mention extensive fires along the southern coastline of Tasmania. Peron (1802), during his visit to Maria Island, reported a large fire on the southern shore of Oyster Bay (Shoal Bay). While it is believed that Aboriginal use of Maria Island was largely confined to coastal areas, and the main effects of their fires was on the western side of the island, there is insufficient evidence to be confident of Aboriginal burning patterns in the Park.

Fire history during the period of European settlement is very poorly documented. Burning to promote the growth of grasses for grazing was a common practice and parts of the island's vegetation were probably subject to a higher fire frequency than during the period of Aboriginal occupation. Aerial photos taken in the 1960s show the considerable extent of open forest, apparently the result of burning. Since proclamation of the National Park, fire frequency in native vegetation has probably been lower than at most times since European arrival.

From the ages of shrub species in different parts of the island, it is known that major wildfires occurred in 1880, 1914, 1934 and 1966. Extensive fires occurred on the island during the 1966/67 summer. In 1978, two wildfires occurred in the park, the first burning most of the southern island, the second being contained in a small area at Encampment Cove. In 1980, a wildfire burnt the isthmus and southern section of the north island.

In recent years wildfires have burnt areas of native vegetation on the isthmus (1968, 1980), the south-east coast of north Maria (1980), Edina Point and most of south Maria (1978). Some controlled fuel reduction burns were carried out during the 1980s but infrequently since. Several other small fires have occurred recently near Darlington (attributed to children) and at Trigonia Corner (suspected arson).

### **9.2 Impacts on Vegetation**

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The western side of the island has experienced a relatively high frequency of low intensity fires, with high soil fertility supporting understoreys varying from bracken and grasses to sedges and saggs, producing a rapid accumulation of fuel. The eastern side of the island has been subjected to a lower fire frequency of relatively intense fires. The heathlands on Maria Island appear to have sustained a relatively high fire frequency.

Some plant communities are positively adapted to a regime of periodic hot fires and are able to regenerate after hot fires if they are not so frequent that seed cannot be produced in the intervals between fires. On eastern coastal areas and on the south island, the plant species diversity in heathlands is lower in long unburnt areas than in adjacent more recently burnt areas. This is because many heathland species are short lived, but regenerate freely after fire. However, on siliceous

granite-derived soils of the eastern side of the south island, burning and grazing have altered the heath component of *E. obliqua* - *E. globulus* open-forests, allowing bracken to invade the understorey and in places to become the dominant understorey species. The environmental effect of the past fire regime has been the development of open-forest with a depauperate or grassy understorey and woodland with a grassy understorey on the west coast of the island.

#### *Issues and Implications*

The diversity of many of the island plant communities can be traced to wildfire in a certain period. For instance, the now reproductively mature seedling regeneration of Oyster Bay pine on the western scree slopes of Mt Maria dates from a major fire in 1966. If these stands were burnt now, regeneration would need to be protected for up to another 30 years from any subsequent fire before new seedlings reached maturity. To maintain existing plant communities by ensuring regeneration of slower to mature species, a very low occurrence of fire is necessary on the upper slopes of Bishop and Clerk (supporting pure stands of Oyster Bay pine, celery-top pine and a number of sub-alpine species) and along the Glenloth cliff tops (carrying stands of Oyster Bay pine). On the other hand, grassy woodlands and grassy open forests require burning at approximately 5 - 10 year frequency to help maintain floristic diversity.

### **9.3 Fire Management**

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The Parks and Wildlife Service is responsible under the *Fire Service Act 1979* and the *Fire Service Regulations 1981* for all aspects of fire management within the Park, including prevention, containment and suppression. There is a duty of care towards the safety of visitors. A draft fire management plan was prepared (National Parks and Wildlife Service, 1987), with minor updating in 1990, to approve fuel reduction burning on the lower slopes of Mt Maria. The works program set out in the plan has not been fully implemented.

The topography of Maria Island greatly influences visitor use of the park and thus the fire risk associated with visitor activities. With the exception of Whaler's Cove and Trigonía Corner, the shortage of suitable landing sites on the island's east coast limits visits by boating parties. Similarly, because of the rugged nature of the Maria Range, the eastern side of the north island is seldom visited by walkers. The remoteness of the south island limits visits by walkers. Areas of the west coast of the north island, particularly the slopes of Bishop and Clerk and the inland track to French's Farm, face a high fire risk, and pose probably the greatest risk to visitors.

Construction of fire trails and breaks within the park is also limited by the island's topography. Vehicular access is currently restricted to the western side of the island, with the exception of the Haunted Bay track. On the north island, the topography of the Maria Range largely restricts the construction of any additional trails or breaks towards the island's eastern side. Opportunities for wildfire suppression operations in the Maria Range area and on the eastern side of the north island are therefore very limited. A fire trail has been cut along the western slopes of the north island, linking the Mt Maria track with French's Farm, and passing to the east of Monah Hill and Ned Ryans Hill.

Dry electrical storms are rare. There are no confirmed records of fires having been started by lightning strikes within the park although lightning was reported a few days before a small fire in early 1994. Park visitor activities pose the main fire risk to the Park. Campfires are permitted, subject to certain conditions, in designated campgrounds. Around Darlington and in other areas of improved pasture, macropod grazing kept down grass fuel loads but since culling fuel loads have increased. The risk of unwanted fire in the south is greatest at Encampment Cove, Whalers Cove, Trigonía Corner, and Point Mauge, which are popular with boating and walking parties. Fires have occurred at the latter two areas in recent years.

#### *Issues and Implications*

Fire management for the Park must provide for the protection of life and property, and meet the fire frequency requirements of different vegetation types, to maintain species diversity and prevent extinctions. The protection of visitors, park facilities and buildings is a high priority in fire prevention and planning and fire suppression operations. The safety of walkers in the event of bushfire, particularly on the slopes of Mt Maria and Bishop and Clerk and in the southern part of the island is of particular concern.

At present, some fire trails are overgrown and fringed by very high fuel loads making them unsuitable for their intended purpose.

## **10 Phytophthora**

*Phytophthora cinnamomi* is a microscopic fungus which lives in the soil and roots and causes severe dieback or death in at least 136 native plant species in sedgeland, heath, open forest, scrub and disturbed rainforest. Although the disease can spread by natural means, it is spread more rapidly and over greater areas by human activity. The disease is spread in soil on boots, in wheels and tracks of vehicles and machinery and by animals which scratch or dig in the soil. Except for localised infections, once an area is infected there is no known practical means to eliminate it from that area. Treatments are being trialed to determine whether the impacts may be reduced within new infection sites.

The Park is thought to be one of the few places in Tasmania free of *Phytophthora*. Susceptible sites throughout the island were surveyed in 1978, 1984 and 1995 but no infection was recorded. Maria Island National Park is climatically suitable for *Phytophthora*. Plant communities on the granitic areas and sandy heaths of the south and east and the mudstones of the central north island are most susceptible to attack by *Phytophthora*.

The Park has been selected as a *Phytophthora cinnamomi* management area for the protection of susceptible threatened species including *Epacris marginata*, *Conospermum hookeri*, and the outlier species *Richea dracophylla*.

*Issues and Implications*

Every care must be taken to avoid the introduction of *Phytophthora cinnamomi*. Low rainfall, large areas of dolerite, and the water barrier and consequent control of vehicular access make this an attainable objective. If any infection is identified, it may be practical, with swift action, to attempt to control disease development with chemicals.

## **11 Tourism and Recreation**

This section identifies the regional tourism and recreation role of the Park, briefly outlines the tourism and recreational character and values of the Park, summarises the available information about visitors, and describes the existing services and facilities.

### **11.1 Tourism and Recreational Character**

According to the Department of Tourism, Sport and Recreation (1990), the growth market in tourism and recreation is composed of visitors who are not satisfied with derivations or imitations of other places and experiences. The Commonwealth Department of Tourism (1994) state that visitors seek experiences that are authentic and incorporate learning, rather than contrived entertainment. In this regard, Maria Island National Park is a place that is inherently and uniquely attractive to visitors.

Much of the Park is characterised by a recovering, or apparently unspoiled natural environment, spectacular scenery, and peace and quiet. In Darlington and some other locations in the Park, the visitor finds authentic historic settlements and cultural landscapes, emphasising a sense of the layers of history and the continuity of the human story of the Island.

A pervasive and valuable tourism and recreational character of the Park, emphasised by its isolated island setting, is the sense of separation and contrast with the pace and development of the modern world. Visitors arrive in comfort on the ferry, yet for a brief period stepping safely not only back in time, but also away from the everyday artefacts of contemporary society. Behind them the jetty and the ferry remain as the metaphorical "umbilical cord" to the mainland of Tasmania. This special value of the Park, difficult to find elsewhere on the east coast of Tasmania, is recognised and appreciated by visitors.

A year long survey of visitor attitudes and preferences about Maria Island National Park indicated that survey respondents appreciated the unspoilt natural environment, peace and quiet, scenery, wildlife, and historic features of the Park, and the isolated island location (Parks and Wildlife Service, 1995).

*Issues and Implications*

Development proposals are made from time to time which could have a detrimental impact on the tourism and recreational character of the Park, some in very obvious and immediate ways, others in more subtle, incremental ways (see 11.7). Because of its inherent values, the Park does not need invented attractions. However, tourism and recreation

facilities and services which respect and complement the inherent values of the place are needed to provide opportunities for visitors to experience the Park. The challenge for management is to provide these in a co-ordinated way, without destroying the values which attract visitors in the first place. Ad hoc, incremental development decisions could also threaten Park values.

## 11.2 Visitor Characteristics

Details of visitor statistics for Darlington in Maria Island National Park for the ten years 1987-88 to 1996-97 are set out below in Table 1. Most visitors to the Park arrive at Darlington, where the only reliable visitor statistics are collected. Statistics for arrivals by private boat, particularly to remoter parts of the Park, can only be collected irregularly.

**Table 1 Visitor Numbers at Darlington**

Year	Days not recorded	Day Visitors to Darlington (a)	Overnight Visitors to Darlington (b)	Plane Visitors to Darlington (c)	Total Visitors to Darlington (a + b + c)
1987-88	108	6507	4513	444	11,464
1988-89	89	7251	4172	264	11,687
1989-90	50	6196	3382	237	9,815
1990-91	45	6711	3172	309	10,192
1991-92	49	8108	3769	366	12,243
1992-93	23	8857	4048	432	13,337
1993-94	12	8934	3947	513	13,394
1994-95	5	8383	3176	228	11,789
1995-96	0	8183	3154	276	11,613
1996-97	0	9511	3682	300	13,493

- (a) Number of ferry visitors arriving and returning on the same day.  
 (b) Number of ferry visitors arriving and staying at least one night.  
 (c) Number of visitors arriving by plane, determined by multiplying the number of planes arriving by an average of three passengers. The large majority of these passengers would be day visitors.

The actual number of visitors is shown in Table 1. Table 2 shows the number of "visitor days" and "visitor nights". These two categories are compounded figures. The figure for "visitor nights" is derived by counting the number of people staying on the island each night. Because some visitors stay more than one night, this total includes visitors who are counted more than once. The figure for "visitor days" is derived by adding the number of day visitors to the number of "visitor nights", which again means that the figure includes visitors that have been counted more than once. The figures are useful for management to indicate visitor pressures on facilities, services such as the load on sewerage systems, and on the environment.

Table 2 shows that there has been a decline in the number of nights that visitors spend on the island. There has also been a fall in the absolute number of overnight visitors (see Table 1). Consequently the number of visitor nights has declined over the ten year period. At the same time, the number of day visitors (see Table 1) now make up over two thirds of all visitors to the Park. Consequently, the number of visitor days has not declined to the same extent.

**Table 2 Visitor Nights and Visitor Days (Darlington)**

Year	Days not recorded	Visitor Nights Darlington (a)	Visitor Days Darlington (b)
1987-88	108	10639	17590
1988-89	89	11113	18628
1989-90	50	9636	16069
1990-91	45	7871	14891
1991-92	49	10155	18629
1992-93	23	8692	17981
1993-94	12	8111	17558
1994-95	5	7782	16393
1995-96	0	6732	15191
1996-97	0	7900	17711

- (a) Number of visitors staying at Darlington each night. Visitors staying more than one night are counted each night that they stay.  
 (b) Number of day visitors, plane visitors, and visitor nights [see (a) above].

Maria Island has always been particularly popular with school and community groups. However, there has been a decline in visits by school groups, commencing in the mid 1980s, and mainly attributed to changes in policies and funding in the Department of Education and the Arts. The decline in school group visits appears to correlate with the decline in visitor nights and the number of overnight visitors.

Generally the Park receives four times the number of visitors during December, January, and February that it does in June, July, and August. In the summer, indoor accommodation at Darlington is often fully occupied and campground space limited. On occasions, up to 200 visitors may arrive daily during this period. Visiting school groups of up to 100 students contribute to relatively high overnight visitor levels during Spring and Autumn and there is always a small number of overnight visitors taking advantage of the relatively mild winter climate.

There are three broad categories of visitors to the Park. Day visitors consist predominantly of small groups of families, friends and independent tourists, but include some coach tour passengers. During summer and holidays, overnight visitors are predominantly groups of families, friends and backpackers but, during other periods, mainly school and community groups. A small number of commercial camping tours also occasionally visit. Private boating parties often use the secluded bays around the coast as a base for fishing and other water-based activities. Encampment Cove is the most popular destination.

Length of stay in the Park depends on the type of visitor. Day visitors generally spend only a few hours on the island. At most, this is time for a brief inspection of Darlington and for short walks in the immediate environs. On the other hand, the majority of overnight visitors stay for between 2-3 nights. Although most nights are spent at Darlington, some parties spend at least one night in the southern part of the island at either the French's farm or Encampment Cove campgrounds. Little is known about the length of stay of boating parties.

#### *Issues and Implications*

The trend towards shorter term visitors needs to be recognised, and there is considerable scope for increased visitation by day visitors. Day visitors require information and interpretation that allows them to make the most of their short stay.

Access costs may be a disincentive to some visitors. The remote location means that providing services and facilities is more expensive than many mainland locations. These costs may also deter visitors if passed on to them.

### **11.3 Existing Recreational Opportunities**

The most popular activities undertaken by respondents to a year long visitor survey (Parks and Wildlife Service, 1995) were sightseeing, nature appreciation, bushwalking, history appreciation and getting away from it all.

In the Park, Darlington provides a readily accessible destination for visitors. Visitors can "get away from it all", and find peace and quiet in close contact with wildlife, beaches and a scenic environment. Historic Darlington and the surrounding area provide an ideal safe environment for children, and a pleasant environment and many recreational opportunities suitable for families and less active people. Most visitors to Darlington also visit the Fossil Cliffs, the Painted Cliffs, and the beach at Darlington. Some also visit the Reservoir and the Oast House. Many of those staying overnight visit Bishop and Clerk. Longer walks to Mt Maria and the Chinamans Bay/Point Lesueur area are also undertaken.

The sandy beaches, rocky headlands and bays of the western coast attract many visitors, for their remoteness, spaciousness and solitude, for beach and water activities, and as a place to explore. A few hours walk south from Darlington are the camp grounds and unspoilt beaches in the Chinamans Bay area. For the more adventurous, and further afield, there is scope for rock climbing and challenging walks on the East Shelf. Visitors using the southern campgrounds as a base are able to explore the Point Lesueur and isthmus area and, depending on length of stay, may visit Robey's Farm or Haunted Bay. The interesting shoreline of Riedle Bay from Elephant Bight to Cape des Tombeaux is an increasingly popular destination and a rough travel route behind the coast has formed.

A lesser known feature of the Park is the attractive and interesting reefs and other marine habitats, with their rich diversity of plant and animal life, within easy reach of the shore (Edgar, 1981). This provides opportunities for SCUBA and snorkel diving. These opportunities are gradually increasing in popularity.

Yachting and boating also occur within and adjacent to the Park. The waters of Chinaman's Bay, although not in the Park, are a popular boating destination because of the natural, untouched beauty of the area and the sheltered waters. Boating visitors travel only a short distance from the mainland to enjoy the experience of a "deserted island". Fishing is permitted in a portion of the marine area of the Park.

The use of bicycles, particularly mountain bikes, is increasingly popular. Some visitors have started bringing skateboards into the Park.

#### *Issues and Implications*

The recreational values of Maria Island are considerable. These values can best be retained by ensuring that the diversity of recreational opportunities provided for visitors are in keeping with the special character of the Park. Adopting a system of Park zoning and maintaining and enhancing recreational settings can help do this.

Inappropriate use of bicycles can cause conflict with other users and impact on environmental, Aboriginal and historic heritage. Provided bicycle use is undertaken responsibly these problems can be avoided, especially since most types of bicycle use are acceptable in the Park. The use of skateboards commonly involves activities and manoeuvres on built structures, all of which on Maria Island are of heritage significance or management importance. These popular and widespread but inappropriate types of use pose serious threats to heritage values and are difficult to police.

Inappropriate or inadequate facilities for both day and overnight visitors could detract from the recreational settings for visitors.

#### **11.4 Existing Visitor Services and Facilities**

The Parks and Wildlife Service is responsible for all visitor services and facilities within the Park. These are located principally in Darlington and provide for the basic needs of visitors. No transport is available within the Park, although by arrangement Rangers transport disabled visitors. There are no shops. Once on the island, visitors are expected to be self-sufficient for the duration of their stay. Park staff hold emergency first aid supplies but otherwise are unable to provide for ill-prepared visitors except from their personal stores.

Within the Park there is a system of vehicular tracks and fire trails (Map 2). Private motor vehicles are not permitted but management vehicles are used on these tracks as well as for general duties around Darlington. All roads are available to walkers and cyclists. There are marked walking tracks to Bishop and Clerk and Mt Maria.

Piped water from the dam on Bernacchi's Creek is available from a number of taps around Darlington. Limited tank water is also available. Some cold water washing facilities are located in the Penitentiary but there are no showers or hot water.

There are three public toilet blocks in the Darlington area near the jetty, in the historic precinct and adjacent to the barbecue/picnic shelter near Darlington Beach.

Behind the dunes at Darlington beach, a shelter with gas barbecues and fireplaces is provided, and used by day and overnight visitors. Nearby is a toilet block. The Mess Hall is open for visitor use.

#### *Issues and Implications*

A few visitors come ill-prepared for their visit or regret not having allowed more time. Visitor facilities need to be in character with the special recreational values of the Park, and be practical and achievable within environmental and heritage constraints and limited financial resources. Better marketing and pre-visit information could help visitors prepare for their visit and make more informed choices.

Innovative ways to provide visitor facilities and services could be explored without compromising Park values. Emphasising the "island experience", suggestions from the visitor survey (Parks and Wildlife Service, 1995) include providing a ferry based provisioning service to overnight visitors (there is a long tradition of island communities meeting the supply boat), a drink machine serving tea and coffee with purchase of a souvenir Maria Island mug (to avoid use of disposable cups) and day pack hire complete with packed picnic lunch.

Services such as water and sewerage are being upgraded to maintain environmental standards. Provision of additional water tanks may increase reliability of water supply. Some historic structures are being subject to an unacceptable level of wear and tear through vandalism, pressure of visitor use, water and wildlife damage.

The road surface from the jetty at Darlington to the historic settlement is rough and unsuitable for people with disabilities. There is also a lack of short to medium length circuit walks in the Darlington area. The road to French's Farm south from Four Mile Creek is inland, missing the opportunity for coastal views and posing some risk to walkers during periods of high fire danger. Some visitors have reported difficulties with poorly marked tracks and routes, such as the climb to the summit of Bishop and Clerk. Insufficient information on walking times and poor or insufficient interpretation is the most common complaint of visitors to the Park (Parks and Wildlife Service, 1995).

### **11.5 Existing Camping and Accommodation**

The three campgrounds on the island are located at Darlington, French's Farm and Encampment Cove. Although camping elsewhere is not encouraged, visitors camp at other sites including Whaler's Cove, Trigonía Corner and Pine Hut Creek. Fireplaces, rubbish and tree cutting are evidence of this use.

The Darlington campground occupies the flat ground on either side of the lower part of Bernacchi's Creek within the historic precinct. It has a notional capacity of 230 people but in the past seven years a maximum of 150 campers at one time has been recorded, and that on only one occasion. Firewood is provided by Park staff for use in small steel fireplaces.

The campground at French's Farm occupies existing cleared paddocks around the farmhouse. The farmhouse is not locked and may be used by visitors. Pit toilet facilities are provided and limited fresh tank water is available at the farmhouse and from a tank next to the shearing shed. The shearing shed is sometimes used for shelter. No rubbish bins or fire places are provided and the use of fuel stoves is required. The Encampment Cove campground has about 12 camping sites spread around the shore of the cove with basic barbecue facilities and a pit toilet. It is especially popular with boating parties. There is a shelter, with a small water tank attached, uphill of the campground near Kintail. At present, firewood is provided. Generally, the level of development of the two southern campgrounds is sufficient for the visitor pressures placed upon them.

Since reservation of the island, visitors have been accommodated in a variety of historic buildings in Darlington. Presently, the Penitentiary is used, accommodating up to 64 people. It is divided into 10 rooms each containing bunks, tables, benches and a modern wood heater. No lighting or special cooking facilities are provided.

Indoor accommodation is an important requirement for many school or other group visits. During peak periods the Penitentiary is filled to capacity and it is fairly heavily used for all but the winter months.

#### *Issues and Implications*

The lower reaches of Bernacchi's Creek have been severely degraded in recent times due to pressures of the adjacent campground. In earlier years, the creek greatly enhanced the aesthetic appeal of the campground but the death of many trees, erosion of banks and water pollution now detract from this appeal.

The campground at Darlington is exposed and almost devoid of trees for shade. Most of the campground is more than 100 metres walk from the nearest toilet, and no showers are provided. Except for a few fireplaces, there are no cooking and food clean-up facilities.

The shearing shed at French's Farm has suffered some deterioration due to campers removing boards for campfires. Fires have been lit on the floor of the shed.

At the campsites in the south of the Island, some environmental degradation, such as the cutting of living trees and campfire escapes, has occurred. Excessive use of alcohol by some visitors to Encampment Cove has sometimes disturbed other visitors, as has shooting, which is illegal in the Park. Dogs are sometimes illegally brought ashore. The problems are exacerbated by the lack of a permanent staff presence.

Camping in areas not presently designated for it is likely to continue and a policy on camping and the provision of camping facilities in the Park must take this into account.

Sometimes, accommodation in the Penitentiary for educational groups or people working on volunteer programs can mean that indoor accommodation for the general public is very limited. There is also some concern that continued use of the building for accommodation may be inconsistent with its adequate conservation. Its frequent use keeps it dry through the use of the wood heaters and at least ensures regular

maintenance. Booking by the room rather than by the bed means that the capacity of the Penitentiary is at times used ineffectively. Because the Penitentiary is used for accommodation, other visitors avoid entering the building, and potential interpretation opportunities cannot easily be realised.

There is an identified unmet demand for built accommodation during summer. The current level of services allows for some additional capacity for overnight visitors. However, new facilities such as showers will require careful management because of limited water supply and the additional pressures which would be placed on sewerage systems. The variety and flexibility of accommodation is limited. Opportunities to increase these could be considered provided the fundamental requirement to maintain the tourism and recreational character of the Park is met.

There is no lighting in the Penitentiary and the use of candles, gas and kerosene lamps by visitors could pose a fire risk. Bench space, storage space and the general fit-out of the Penitentiary is very basic and may not be adequately catering for visitor' needs.

Maria Island has no permanent watercourses. Those that are most reliable are located at the northern end of the island. Consequently, water is a major constraint on future expansion of overnight visitation in the Park. The capacities in the south of the island are even more limited. Because of much lower water consumption, the number of day visitors to the site is not so critical.

To prevent a crowded atmosphere, which detracts from the experience of overnight visitors, there are limits to the number of overnight visitors who could be acceptably accommodated. Limitations are also necessary to ensure adequate capacity of services and to minimise degradation of the special natural and cultural values which make the Park so attractive to visitors. Calculating the limits is not straightforward, but taking into account the above factors, the likely visitor demand during the life of this plan, and the precautionary principle, limits can be set which should protect the Park's character without imposing unwarranted restrictions on visitors. At present, there is plenty of overnight visitor capacity available (albeit for campers) and it is very unlikely, even in busy periods, that the limits on numbers will constrain visitor demand in the foreseeable future.

In Darlington, the number of indoor beds is limited and frequently of insufficient capacity to meet demand whereas the campground is rarely used to capacity. The accommodation mix could be varied by providing more indoor beds.

## **11.6 Regional Tourism Role**

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In 1996, the east coast tourism industry was characterised by 31% of interstate and overseas visitors spending at least one night in the region. The trend since 1992 has been a 2.5% increase in this figure. The average length of stay was 2.2 nights in 1996 (Tourism Tasmania, 1997), a small decline of 0.5% since 1992. According to the tourism visitor survey (Tourism Tasmania, 1997), 21% of adult visitors to Tasmania visited Orford, and 1.7% spent some time on Maria Island (about 8,039 people).

*Issues and Implications*

Maria Island National Park is an important component of tourism in the region. However, a visitor survey (Parks and Wildlife Service, 1995) showed that about twenty nine percent of survey respondents spent a night in the Triabunna/Orford region before their visit the Park, and only twenty percent after their visit. If the number of visitors staying in the Triabunna/Orford region overnight could be increased, there could be economic benefits to the local community.

### **11.7 Development Proposals**

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The Park is a valuable tourism, recreational and educational resource which the Parks and Wildlife Service has an interest in developing further. Provided it respects Park values and character, development which offers authentic and educational experiences, uses good design, is ecologically sustainable, respects heritage values, exercises responsible behaviour, contributes to the conservation of the Park, and provides quality service, could be an asset to the Park.

Development suggestions made from time to time have included:

- showers for overnight visitors;
- a restaurant and coffee shop;
- a take-away food shop;
- a shop for visitor supplies;
- a souvenir shop;
- additional seating in the Darlington area;
- four-wheel drive vehicle tours;
- horse and buggy tours;
- restored vintage bus tours;
- guided walking tours;
- a bicycle hire service;
- a vehicular ferry service and campground for camper vans;
- mobile homes and caravans;
- self contained exclusive lodge accommodation;
- bunkhouse accommodation;
- accommodation in restored buildings; and
- accommodation in pseudo-historic reconstructions.

Many of these suggestions came from a report by Corporate Solutions (1993), commissioned by the Department of Tourism, Sport and Recreation and based on a one day inspection of the Island. Irrespective of the appropriateness of the suggestions, the report notes, "In the Island's current state, it is considered unlikely that reliable and substantial private enterprise entities would become involved. It would require the Government to either wholly or partially underwrite the risk involved in establishing a market of sufficient size to provide a reliable income" (Corporate Solutions, 1993: 11).

Resort style beach services such as hire of dinghies, sailboards, sailing dinghies and surfcat catamarans, kayaks, wetsuits, and snorkelling equipment have been suggested for Chinamans Bay. Snorkelling equipment hire has been also proposed for Darlington.

There is support for establishing a study centre, with accommodation, for educational groups, including not-for-profit travel study groups, or, on a limited basis, short term use by commercial nature based or ecotourism groups.

*Issues and Implications*

The high cost of providing services on the Island, including water supply, sewerage, and power are limiting factors in development proposals, unlikely to be met by private enterprise. This is particularly the case for overnight visitors. Government subsidies to underpin private development are likely to be limited.

The visitor survey (Parks and Wildlife Service, 1995) showed that respondents supported some of the more low key development proposals that have been made, for example showers and bicycle hire, and strongly opposed others such as coffee shops and take away food.

A national park cannot be moulded to meet all the variety of desires for experiences, activities and settings which are found in the community. The Park provides a clearly defined segment of those experiences, activities and settings derived directly from the inherent values of the Park. Other development and activities incompatible with Park values, including its identified tourism and recreational character, can be located in suitable places outside the Park.

## **11.8 Interpretation and Education**

Visitors are increasingly looking to enjoy, understand and appreciate their visit through high standard presentation of information, interpretation and education. Therefore, interpretation and education are critical to the delivery of quality Park experiences, as well as fostering an appreciation and caring attitude towards the Park (Department of Tourism, Sport and Recreation, 1994).

Visitor survey respondents (Parks and Wildlife Service, 1995) preferred self-guiding leaflets and signs to central displays. Several pamphlets, maps and brochures have been prepared for interpretive use in the Park. The Commissariat Store houses a small visitor display which provides both Park orientation and interpretation of the historic building. Park staff conduct a guided tour of Darlington during busy periods. The summer ranger program, which runs each year for most of the summer school holidays, provides a range of day and evening activities for visitors. High quality interpretation has recently been placed in the Coffee Palace as the first stage of a major interpretation facility in the building.

Despite declining use, Maria Island remains an important destination for school groups undertaking field study programs or learning social skills and self sufficiency.

*Issues and Implications*

Overnight visitors can discover and appreciate a great deal more about the whole island than day visitors. Day visitors require simple and concise orientation and interpretation of the northern part of the island to make the most of their short stay. Work is still in progress to present many of the environmental and heritage values of the Park to visitors.

In some cases, orientation information is insufficient and some existing information is inconsistent, incomplete and poorly presented.

The visitor survey (Parks and Wildlife Service, 1995) identified concerns about the sufficiency, accuracy and usefulness of interpretation, direction signs and track markings.

## **12 Administration and Management Facilities**

Administratively, the Park and the Reserve are part of the South-East District of the Parks and Wildlife Service, managed by a District Manager. A Senior Ranger lives on the island and is directly responsible for day to day management of the Park and Reserve. Park rangers and their families are the only permanent inhabitants of the island. Work also is done by contractors and temporary staff and some accommodation is available for them and visiting staff.

Four wheel drive vehicles and a truck are used for management purposes along with earth-moving machinery and fire-fighting equipment. The Park office is located in the School Master's House. The Commissariat Store is also staffed during ferry arrival and departure times as a reception and orientation point for visitors. A workshop is located at the southern edge of Darlington.

A trig point is located on the summit of Mt Maria and is maintained by the Geodetic Survey Branch of the Department of Environment and Land Management. Communication facilities are located on the ridge between Mt Maria and Mt Pedder.

There is a rubbish tip near the road to the reservoir at Darlington. A recycling program is in place.

Diesel runs machinery and a generator to charge batteries for electricity, gas is used for some purposes, wood for cooking and heating using open fires and slow combustion stoves, and petrol or diesel for vehicles. Energy sources have been developed in an uncoordinated manner and the total energy system of the Park is now being upgraded.

### *Issues and Implications*

The island location creates additional problems to those normally associated with running a national park. Extra time and work is needed to obtain necessary materials and equipment. Alternative energy requirements, and constraints on transport, handling, storage, and maintenance of energy sources are imposed by the island location. Limitations on entering or leaving the Park place extra strain on staff living arrangements. Swift evacuation of large groups of visitors can be a problem, as can be the treatment of the sick and injured. Rough seas can make loading and unloading passengers and equipment dangerous.

There is more work to be done than staff available. This has created a backlog of work and led to some hasty, unco-ordinated, or temporary solutions to steadily growing problems. Extra staff would require additional housing.

The condition of vehicular tracks is poor in places and causes excessive wear on management vehicles. Rough surfaces on the jetty, roads and tracks used by walkers cause difficulties for visitors with disabilities or who are infirm. Visiting groups can greatly strain management resources if a number of groups visit at one time or if groups are poorly equipped or supervised.

Its remoteness and sea distance from Maria Island means that Ranger visits to Ile des Phoques are infrequent.

## **Part B Values And Significance, Goals And Objectives**

### **13 Park and Reserve Values and Significance**

In Tasmania, the purpose of a National Park is (Regional Forest Agreement, 1997):

A large, natural area of surface and/or subterranean land containing a representative or outstanding sample of major natural regions, features or scenery, and which should be managed for the protection and maintenance of natural and cultural values with the provision for ecologically sustainable recreation consistent with the conservation of the area's values.

A Nature Reserve is (Regional Forest Agreement, 1997):

An area of land which contains features that contribute to biological diversity and/or geodiversity and are unique, important or have representative value and which should be managed primarily for the preservation of these features.

This section summarises the environmental, heritage, recreational, and educational values and significance of the Park and the Reserve. The main planning considerations arising from the need to conserve and enhance these values are also outlined.

#### **13.1 Environmental Values**

The geology of Maria Island is of great scientific interest as it contains features from many geological ages. In particular, the aptly named Fossil Cliffs are perhaps the finest example of their kind anywhere in the world. Other geological features include the unconformity on Maria Island's east coast where Permian rocks overlie the Siluro-Devonian Mathinna Beds, the Triassic sandstones of the Painted Cliffs and the spectacular dolerite columns of Bishop and Clerk.

Much of the Park away from the western coastline has been relatively undisturbed for many years, although earlier periods of European settlement made use of what now appear untouched areas. Consequently, in much of the Park, biodiversity is virtually intact or substantially recovered. However, particularly on or adjacent to the pasture areas of the west coast, mammal biodiversity of the island is greatly disturbed by introduced species. Even those mammal species originally on the island, such as pademelon, potoroo and swamp antechinus, are affected by the introductions. Yet, the special characteristics of island populations of many indigenous species are largely retained on Maria Island. The Park is substantially free of pollution of air, land, and water.

Maria Island's native vegetation consists of a great diversity of predominantly dry sclerophyll plant communities, heathlands and coastal vegetation of high conservation value. This is due to the presence of geographically significant endemic species, rare or

vulnerable species, and several plant communities which are unreserved or poorly reserved elsewhere in the State Reserve system. The apparent absence of the root fungus *Phytophthora cinnamomi* greatly enhances the value of the island for flora conservation.

The Park is particularly valuable for wildlife conservation due to the presence of one of the largest known populations of forty-spotted pardalotes. The distribution of this endemic bird species is virtually restricted to the drier forests of south-east Tasmania. The Park also carries the largest breeding population of swift parrots on reserved land during good years of blue gum flowering. Park vegetation also provides a range of habitats for both native vertebrates and invertebrates.

The marine environment of Maria Island National Park protects marine ecosystems representing the Maugean biogeographic province.

Ile des Phoques protects seal and bird colonies and breeding areas.

### **13.2 Heritage Values and Cultural Significance**

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The terms "heritage values" and "cultural significance" embrace the concept of a place having an intrinsic value which cannot be expressed solely in financial terms. Cultural significance indicates why a place is considered important and is valued by a community. It is embodied in the fabric of a place, including its setting and relationship to other items, the records associated with the place, and the response that the place evokes in the community or individuals to whom it is important. Assessment of cultural significance relies on an understanding and analysis of these values derived from consideration of the historical context of a place, the way in which its extant fabric demonstrates its historic use or process, its associations, and its formal or aesthetic qualities (Godden Mackay, 1992).

Past use of the island by Aborigines and Europeans has left a series of sites, buildings, ruins, relics, cultural landscapes and records which form a valuable cultural resource and provide rich source material for educative and interpretive programs.

The remains from periods of European activity, beginning early in the 19th Century, include whaling, convict settlement, agriculture, cement industry, and grazing. They are concentrated around Darlington and Point Lesueur, making these areas of special cultural importance.

The convict settlements were part of the Australian penal system which was the basis of European development of Australia, and of Tasmania in particular. The remains of the convict periods represent two different treatments of minor convict offenders. Remnants from the first period are significant because they pre-date the Port Arthur settlement and point to early industrial activity undertaken by convicts sentenced to a secondary period of punishment after arrival in Australia. Remains from the second period form one of the most complete and unaltered convict probation stations of over 70 such stations built in Tasmania to receive minor first offenders.

The Bernacchi development, that followed the convict periods, typifies the optimism of the period and is of some local distinction, reflecting the experimentation and enterprise of the growing European civilian population.

The cement works and kilns are good, relatively complete examples of the technology of the day. They represent a continuum of developing technology and industrial practice culminating in the National Portland Cement Company - a major Australian enterprise of its time. The remains of this industrial complex form an important industrial site. The maintenance and re-use of buildings in Darlington, has incidentally resulted in the retention of meaningful elements from each period. The result is a complex historic site unimpaired by later modern development and capable of accurate interpretation. The Darlington site thus has significance as a protected and accessible point for visitors to appreciate local, national, and even international history in the case of Smith O'Brien (Ireland) and Hohepa Te Umuroa (New Zealand).

The cultural significance of Darlington can be summarised as a complex cultural landscape which retains elements from many distinct phases of its development and history. This layering of evidence provides a representative microcosm of Tasmania's history, documenting major periods such as Aboriginal use, exploration, convict settlement, industrial development, pastoral pursuits and dedication as a National Park. All of these periods and the evidence from them make a significant contribution to the environmental and heritage value of the precinct (Godden Mackay, 1992). Because of the significance of Darlington as a convict settlement associated with industries and economic ventures, as a place associated with political prisoners, as a prominent place symbolic of the use of transportation as a sentence of deterrence, and as a representative example of the range of convict administration and experience, it has been suggested for consideration as a component of a Convicts Serial Sites World Heritage nomination.

Ile des Phoques contains what appears to be well preserved evidence of the early fur sealing industry. Because of this, the site is of high significance (Kostoglou, 1995).

### **13.3 Recreational Values and Tourism**

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A wide diversity of flora and fauna, landforms and marine environments characterise Maria Island. All are readily apparent and accessible to visitors. The ready opportunities for visitors to encounter untamed but relatively unafraid wildlife, spectacular natural features, unspoilt beaches, and a variety of vegetation communities at close quarters is a valuable experience for visitors. The island has a variety of scenic landscape features including mountains, cliffs, gentle slopes, and beaches which provide an attractive tourism and recreational setting. Even when viewed from afar, the natural landscapes of the park are scenically striking. A closer view shows the scenic qualities in more detail and highlights the environmental characteristics of land form, water, vegetation, and wildlife that combine to create them. Parts of Maria Island have been identified to have wilderness value.

The presence of historic buildings set amidst a pastoral landscape with European trees allows visitors to take a convincing step back into the past. At Darlington in particular, the historic atmosphere is one of past human endeavour, aspirations, and suffering, now gone and silent. The silence, amidst the evidence of the past, highlights for the visitor the layers of history and the transitory nature of different periods of the island's human history. The integrity and authenticity of the historic atmosphere of the park is of significant value to visitors.

The Park is characterised by quietness, an atmosphere of solitude and a strong sense of contrast with the pace and development of modern life. This contrast is a very significant element of the park's value and character. The atmosphere is one of undisturbed nature or of a cultural landscape. The undeveloped nature of the Park gives it a special character, difficult to find elsewhere on the east coast of Tasmania.

The fact that the Park is an island, removed yet visible from mainland Tasmania, is of considerable appeal for visitors. By its very nature as an island, separation and isolation characterise the park, with the only access by sea or air. The need for provisioning by either air or sea links emphasises and heightens the experience of being on an island.

The range of recreational opportunities for visitors, some of them unique, together with a mild reliable climate, makes the Park a valuable tourist and recreational asset. The key values of the Park for tourism and recreation can be summarised as:

- Attractive and accessible flora, fauna and landscapes
- Authentic and undisturbed historic heritage
- A relatively rich record of Aboriginal life on the Island
- An atmosphere of quietness, solitude, and contrast with the everyday artefacts of modern life
- An island experience of separation and isolation

#### **13.4 Educational Values**

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Within a small area, the island provides ample opportunity to observe and learn about the natural and cultural environment in pleasant and stimulating surroundings. The combination of diverse vegetation, spectacular geology, accessible wildlife, a rich history and archaeology is not readily found in any other location. As Maria Island's geological features are so varied and yet relatively accessible, it provides an excellent opportunity for education and interpretation. These aspects, coupled with the island setting removed from most modern developments and distractions, and a relatively benign climate create a unique learning environment. Being an island, it is a location where groups of young people can practise some degree of self-sufficiency in relative safety. Consequently, the Park is an important educational resource for a wide variety of school and community groups.

#### **13.5 Threats to Park and Reserve Values and Character**

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There are a number of factors which detract from or have the potential to diminish Park values and character. These include:

- wildfire which may threaten the safety of visitors, destroy buildings, fire sensitive native vegetation and vulnerable animal species;
- erosive agents which bring about the decay and collapse of historic structures and degradation of the natural environment;
- introduced plants, animals and diseases which invade the ecosystem and degrade or weaken the natural environment; and
- developments or activities which may damage environmental and heritage values or spoil the tourism and recreational character of the Park.

These factors must be effectively dealt with if Park values and character are to be sustained in perpetuity.

Disturbance of wildlife on Ile des Phoques is the major threat to the values of the Reserve.

## **14 Park and Reserve Management Goals**

### **14.1 Sustaining Park and Reserve Values for the Future**

To effectively protect and manage the Park and the Reserve, a vision for their future needs to be established. It is important to make explicit this vision as goals for long term management if the values of the Park and the Reserve are to be sustained. Protection and preservation of these values from inappropriate development and management, and the “tyranny of small decisions”, must be sustained, not just in the short term, but for the benefit of future generations.

Different parts of Maria Island National Park have their own special qualities which contribute to the overall character of the Park, but the park management goals apply to the Park as a whole.

### **14.2 Park and Reserve Management Goals**

The goals for the future environmental, heritage, recreational, and educational character of Maria Island National Park are set out below.

- To sustain the environmental and heritage character of Maria Island National Park, the goals of management are to ensure, as far as practicable, the Park will be characterised by:
  - maximum indigenous biodiversity;
  - viable populations of all indigenous species;
  - unfettered ecological processes;
  - undisturbed physiographic features;
  - unpolluted air, land and water; and
  - significant and authentic cultural landscapes, historic settlements, fabric, and artefacts.
  
- To sustain the recreational and educational character of Maria Island National Park, the goals of management are to ensure, as far as practicable, the Park will be characterised by:
  - quietness and solitude;
  - an uncrowded atmosphere;
  - ready contact by visitors with undisturbed flora, fauna and natural features and processes;
  - scenic natural and cultural landscapes and the contrast between them;
  - an authentic historic atmosphere and a sense of the layers of the past;
  - the sense of contrast with the pace and development of the modern world; and
  - a strong sense of separation and isolation from the mainland.

- To sustain the environmental and heritage character of Ile des Phoques Nature Reserve, the goals of management are to ensure, as far as practicable, the Reserve will be characterised by:
  - maximum indigenous biodiversity;
  - viable populations of all indigenous species;
  - unfettered ecological processes;
  - undisturbed physiographic features;
  - unpolluted air, land and water; and
  - undisturbed historic fabric and artefacts.

## **15 Park and Reserve Management Objectives**

To maintain the Park and Reserve values, and to achieve their management goals, management objectives are set out below. These objectives are fundamental to the long term protection of the Park and the Reserve and achieving the applicable environmental, heritage, recreational, and educational management goals.

On Maria Island, they underpin the sustainable recreational and tourism use of the Park. By zoning the Park for management purposes (see Section 17), more specific management objectives can deal with the localised values and character within each zone. Site plans required by this management plan will also identify goals and objectives to sustain the values and character of the area covered by the site plan.

### **15.1 Principal Objectives**

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- Conserve and maintain, in perpetuity, the marine and terrestrial biophysical processes and biodiversity of the Park and the Reserve, including indigenous species, communities, ecosystems, and genetic diversity.
- Conserve the geological, geomorphological, pedological, hydrological, scenic and landscape features of the Park and the Reserve.
- Protect and retain the elements of culturally significant past use of Maria Island National Park, and the layering of evidence documenting the major periods of Aboriginal use, exploration, convict settlement, industrial development, pastoral pursuits and dedication as a national park.
- Protect and retain the elements of culturally significant past use of Ile des Phoques Nature Reserve.
- Protect and preserve the special recreational and tourism character of the Park as an island removed from and attractively distinct from the everyday world in the rest of Tasmania.

### **15.2 Associated Objectives**

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- Provide recreation and tourism opportunities and facilities based on appreciation and enjoyment of the environmental, heritage, recreational and educational values of the Park.
- Enrich visitor experiences of Park values through education and interpretation.
- Develop public understanding of the values and goals for management of Maria Island National Park and Ile des Phoques Nature Reserve.
- Rehabilitate and restore damaged and degraded areas of the Park.
- Encourage and facilitate research and study within the Park and the Reserve which increases knowledge and understanding of their values, contributes to their preservation, or assists management of the Park and its use for tourism and recreation.
- Manage introduced wildlife in the Park, giving higher priority to native species conservation, Park protection and the benefit of visitors.

## Part C Management Strategies

The following strategies have been formulated to attain the management objectives for the National Park and the Nature Reserve. Throughout Part C of this management plan, the strategies are generally applicable (depending on the circumstances applying in the Park and the Reserve), unless their application is designated specifically to the Park or the Reserve.

The strategies are based on the present condition of the Park and the Reserve, and, in the case of Maria Island, on current and expected patterns of visitor use. Since these may change in the future, the plan provides for periodic review which may result in subsequent prescriptive changes. In any case, implementation of the plan is dependent on the availability of funds.

### 16 Boundaries

The marine environment around Maria Island National Park is a complementary and interdependent part of the terrestrial environment of the Park. However, only a small component of the marine environment around the island is included in the Park.

- Negotiate the inclusion within the Park of a full range of Maria Island's marine habitats.
- Install clear, effective, and aesthetically designed offshore marking of the marine boundary of the Park.
- Investigate the inclusion of Lachlan Island within the Park.
- Investigate extending the boundaries of the Ile des Phoques Nature Reserve to include marine areas around the island.

### 17 Management Zones

Although the management goals and objectives set out in Part B apply to the entire Park, different conditions prevail in different areas of the Park. To ensure appropriate management of these differing conditions, management zones have been designated to take account of and protect the environmental, heritage, recreational, and educational values of the Park. The zones determine management requirements to meet the management objectives. The factors from which the zones and their objectives are derived are set out and discussed in Parts A and B.

#### 17.1 Zoning Objectives

- The objectives of zoning are to:
  - take account of localised features, conditions, and values;
  - protect and enhance Park values by concentrating and limiting tourism and recreation development to designated locations; and
  - provide a range of recreational and tourism opportunities consistent with the values of the Park.

## **17.2 Zoning Policies**

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- Public right of access will not be permitted to Ile des Phoques Nature Reserve and the Reserve is declared a restricted area by this management plan.
- Five management zones will be designated for Maria Island National Park (refer to Map 5). These are:
  1. Darlington Zone,
  2. Point Lesueur (Long Point) Zone,
  3. Recreation Zone,
  4. Natural Zone,
  5. Marine Zone (currently divided into fishing and no fishing areas)
- Where necessary to delineate special management conditions, heritage precincts or heritage sites will be designated within any of the five zones or on Ile des Phoques.
- Conservation, use, and management of heritage precincts and heritage sites will conform with this management plan.
- The Director may designate further heritage precincts or heritage sites (in addition to those identified in this management plan) if research uncovers new areas or sites of significant Aboriginal or historic heritage.
- To limit and contain impact on the heritage precincts of Darlington and Point Lesueur, facilities and services areas, in which development of new management or visitor buildings, structures or other support facilities may be permitted, will be designated in these Zones.
- Development in the facilities and services areas will conform to this management plan and any other requirements determined in the site plan for the Zone.
- Fishing and the harvesting of marine plants is forbidden in that part of the Marine Zone to the west and south of a line between Cape Boullanger and Cape Bougainville, under rule 13 of the *Fisheries Rules 1996*. Recreational and commercial fishing is unrestricted in the balance of the Zone (see Map 2).
- If access in any Zone of the Park needs to be restricted, declare restrictions under the provisions of Regulation 12 of the *National Parks and Reserves Regulations 1971* or revise the management plan if permanent restricted areas are necessary.



### **17.3 Darlington Zone**

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This zone encompasses Darlington and its surroundings (Map 6). The jetty in Darlington Bay is the main visitor access point to the Park, whilst the landing area provides for aircraft access. The Zone is an area of considerable heritage significance. It receives the majority of visitors to the Park and the highest visitor impact. The main visitor facilities are located here and it is also the centre for administration and management of the island. Darlington is characterised by a “complex cultural landscape which retains elements from many distinct phases of its development and history” (Godden Mackay, 1992).

- The management objectives for the Zone are to:
  - protect and conserve environmental and heritage features and values;
  - protect and conserve the recreational and tourism atmosphere and character (see Section 13.3);
  - provide recreational and tourism opportunities consistent with the above objectives; and
  - consistent with the foregoing, provide the principal visitor and management services and facilities for the Park.
- Designate all of the Darlington Zone a heritage precinct (see Section 21.2).
- Facilities and services areas A, B and C are designated as contained areas where development of certain visitor or management facilities and services may be considered (see Section 23.3).
- Prepare a site plan for the Darlington Zone in accordance with the prescriptions of Section 24.

### **17.4 Point Lesueur (Long Point) Zone**

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This Zone encompasses the remains of the convict probation station and associated ruins as well as those of the later Bernacchi and pastoral activities at Point Lesueur and French's Farm (Map 7). Part of the Zone is also a popular day and overnight destination for boating parties. This Zone is subject to greatest visitor use outside the Darlington area.

- The management objectives for the Zone are to:
  - preserve environmental and heritage features and atmosphere;
  - preserve the recreational and tourism atmosphere and character (see Section 13.3);
  - provide a range of recreational and tourism opportunities compatible with the above objectives; and
  - consistent with the foregoing, provide a level of visitor services and facilities secondary to those in Darlington.
- Designate all of the Point Lesueur Zone a heritage precinct (see Section 21.2).



- Facilities and services areas A and B are designated as contained areas where development of certain visitor or management facilities and services may be considered (see Section 23.4).
- Prepare a site plan for the Point Lesueur Zone in accordance with the prescriptions of Section 24.

#### **17.5 Recreation Zone**

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The Recreation Zone essentially covers the existing tracks on the west coast and is chiefly a corridor for recreational travel and access to beaches, other natural features, and heritage areas. It covers the lowland coastal area stretching from Magistrates Point to Robey's Farm on South Maria Island, and includes most of the developed and semi-developed former farmland (see Map 5).

- The management objectives for the Zone are to:
  - preserve environmental and heritage features; and
  - provide for low impact, low density, non-intrusive recreational use and enjoyment of the area.

#### **17.6 Natural Zone**

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For many years now, much of the Park has remained a substantially undisturbed landscape with important environmental values. This Zone covers the more remote and rugged parts of the island with little evidence of development although some remains of past human activity, such as fence lines and stockyards, occur in isolated locations. The Regional Forest Agreement process identified high quality wilderness values in the eastern part of the north island and over most of the southern island (Tasmanian Public Land Use Commission 1996a & 1997). This is approximately the area of the Natural Zone. Parts of the Zone are of particular significance for flora and fauna conservation. Protection of the different vegetation types and the sense of remoteness are the primary management concerns. By preserving the isolation and naturalness of the eastern and southern parts of the island, including areas of wilderness value, the diversity of recreational opportunity in the Park is maintained.

- The management objectives for the Zone are to:
  - preserve the Zone in an undisturbed condition;
  - protect plant and animal species and communities;
  - protect geoheritage;
  - protect Aboriginal and historic heritage; and
  - maintain the sense of isolation and naturalness.
- Structures in this Zone will be limited to communications facilities on or adjacent to the existing ridge site between Mt Maria and Mt Pedder, and lighthouse facilities on Ile du Nord.
- Except for environmental or heritage protection, do not permit any other type of development (including tracks) in the Zone.



### **17.7 Marine Zone**

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- The management objectives for the Zone are to:
  - preserve marine species and marine ecosystems
  - develop awareness and understanding of the marine and coastal environment
  - consistent with the foregoing, provide for compatible recreational use.
  
- The no-fishing area of the Marine Zone will serve as:
  - a viewing area where marine flora and fauna may be observed free from any form of interference
  - a protection area for marine flora and fauna
  - a reference area for scientific study
  - a replenishment area which may provide recruits to repopulate other areas
  
- Jetties, boat slips, floating platforms, or structures anchored or fixed to the seabed in the Marine Zone will only be permitted in accordance with Section 23.6.
  
- Investigate extending the no-fishing area to encompass all of the Marine Zone.

## **18 Access**

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The Darlington jetty is the only formed access point for boat visitors to the island. Other parts of the island can be reached by private boats and an approval, now lapsed, was previously given for a small jetty for recreational craft to be built at Encampment Cove. There is a authorised landing area for aircraft in the Darlington Zone. Zoning retains a range from developed to entirely natural areas so no other major arrival facilities are necessary or permitted. However, the existing arrival facilities require some maintenance and upgrading.

### **18.1 Access in General - Objectives**

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- The objectives for access to and within the Park are to:
  - maintain, develop and promote opportunities for people, including those with disabilities, to visit;
  - protect Park values by concentrating and limiting developed visitor arrival points to designated locations in the Darlington and Point Lesueur Zones;
  - monitor and manage access by boating visitors; and
  - direct and develop access within the Park appropriate to the Zone in which it occurs.
  
- The objectives for access to Ile des Phoques are to:
  - restrict general public access;
  - limit permits for land access to necessary management visits or approved scientific research visits; and

- require permits to access sea caves or any future marine area.

## **18.2 Sea Access**

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### **Policies**

- The jetty at Darlington will be the designated landing point for commercial ferry, cruise and similar services, including those associated with land based ventures.
- Approval of any commercial development will require it to meet the full cost of any Darlington jetty upgrading and subsequent maintenance necessitated by the development.
- Subject to assessment and the site plan for the zone, public landing facilities away from Darlington may be approved, and will be limited to a simple, low maintenance jetty at Encampment Cove, suitable for private dinghies and similar small private craft.
- Regulation 5A of the *National Parks and Reserves Regulations 1971* will be used to regulate the use of vessels within the waters of the Park.
- Public access to Ile des Phoques Nature Reserve, including its sea caves, will not be permitted without the written permission of the Director.

### **Actions**

- Licence commercial ferry and other watercraft services within the waters of the Park in accordance with Section 25B to Section 25K of the *National Parks and Wildlife Act 1970*.
- Liaise with the Department of Transport to ensure maintenance or upgrading of the jetty and landing facilities for safe docking, landing of heavy equipment, and safety and comfort of visitors.
- Develop and disseminate guidelines and information on requirements for boating and sea access within the Park.

## **18.3 Air Access**

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### **Policies**

- The existing authorised landing area at Darlington will be the only one permitted in the Park.
- The landing area will be maintained at a sufficient standard for the type of aircraft which normally used it in 1997.
- Except for interpretation and orientation, no other ancillary developments in the landing area will be permitted.
- Airdrops within the Park will only be permitted for management or emergency purposes.

- Except in an emergency, all aircraft, including helicopters, will require a permit to land or take off, as required by the *National Parks and Reserves Regulations 1971*.
- Aircraft, including helicopters, may use the Darlington landing area at their own risk. Except for management purposes, landing of aircraft elsewhere will not be permitted without the written authority of the Director.
- Except in an emergency or for management purposes, aircraft will not be permitted to land on Ile des Phoques.

#### **Actions**

- Maintain the landing area at Darlington at the prescribed standard.
- In consultation with the Civil Aviation Safety Authority, the Royal Australian Air Force, commercial and private pilots, develop overflight guidelines to minimise the impact of low flying aircraft on the recreational experiences of Park visitors.
- In consultation with the Royal Australian Air Force, commercial and private pilots, develop and implement a permit system and conditions for use of the landing area.

### **18.4 Roads and Vehicular Tracks**

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#### **Policies**

- Vehicle tracks will be limited to those identified in this plan, site plans, or designated in the Fire Management Plan.
- Before construction of any new vehicular tracks, or re-routing of existing tracks, survey the proposed route for disease risk, habitat and species significance, and heritage significance.
- Roads and vehicular track development and maintenance will accord with the prescriptions of Section 24.
- Bicycles will only be permitted on designated roads and vehicular tracks, and, subject to the code of practice for their use on Maria Island, in limited other locations.
- Motor vehicle use on the island will only be permitted for Park management or study centre purposes.
- Under Regulation 5F of the *National Parks and Reserves Regulations 1971*, skateboards, rollerblades and similar wheeled vehicles are not permitted in the Park or the Reserve.
- Subject to assessment according to Sections 19.3, 19.6, 21.2 & 24, local materials will be used for track and road maintenance, and any other building purpose, rather than imported materials.

**Actions**

- In the Fire Management Plan, designate tracks to be retained or constructed as firebreaks or fire trails.
- Keep open the vehicular track to Haunted Bay.
- Bring tracks designated for management use to an adequate standard.
- Prepare, disseminate and enforce a code of practice for the use of bicycles in the Park.
- Erect signs prohibiting the taking of skateboards, rollerblades and similar devices into the Park.
- Ensure the alignment and drainage of roads minimises water discharge damage.

**18.5 Walking Tracks**

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**Policies**

- Priority will be given to upgrading existing tracks before any new tracks are constructed.
- Before construction of any new walking tracks, or re-routing of existing tracks, survey the proposed route for disease risk, habitat and species significance, and heritage significance.
- Walking track development and maintenance will accord with the prescriptions of Section 24.
- Exact track locations and standards will be determined, and construction undertaken, using appropriate guidelines of the Walking Track Management Manual (Blamey, 1987) and/or the Draft Track Management Strategy (Parks and Wildlife Service, 1994b) and according to any applicable site plan.
- Where feasible, some wheel chair access will be provided around the Darlington Zone.
- To retain the natural character of the Zone, walking tracks will not be constructed in the Natural Zone unless monitoring of routes indicates the need for minimal surfacing and drainage for environmental protection purposes only.

**Actions**

- In the site plan for the Darlington Zone (see Section 24), consider short to medium length circuit historic walks and nature walks within or linked to the Darlington Zone.
- Investigate options for an alternative walking track following the coast from Four Mile Creek to Bloodstone Point.
- Maintain and clearly mark all existing walking tracks, particularly that to Bishop and Clerk.

- Construct an accessible, safe track to the Fossil Cliffs quarry.
- Investigate possibilities for an alternative, safe, non-intrusive access to the Painted Cliffs.

## **19 Protecting Environmental Values**

Some specific measures to protect the Park and Reserve against the destructive effects of fire are given in Section 20. This section gives overall strategies to conserve environmental values and control exotic species, introduced wildlife, pests and diseases, and erosion.

### **19.1 Vegetation Conservation**

#### **Objectives**

For objectives, policies and actions relevant to conservation of historic vegetation and cultural landscapes, see Section 19.7.

- The objectives of vegetation conservation are to:
  - conserve and maintain natural diversity;
  - conserve and protect rare, threatened and endangered species;
  - conserve and protect plant communities of high conservation value; and
  - minimise harmful impacts on vegetation.

#### **Policies**

- The following seven areas have high conservation priority and require protection and/or careful management:
  - plateau shelf and above;
  - eastern slopes of the Maria Range;
  - lowland gullies;
  - saltmarsh and lagoons;
  - areas of native grassland vegetation;
  - dolerite ridges of the south island; and
  - heathlands and woodlands on the isthmus.
- Modification of these areas will be avoided or limited to those which are localised and of minimal impact. Permit no other modifications.
- Fire management in these areas, including fuel reduction burning and habitat management burning, will conform with this management plan and the Fire Management Plan.
- All practicable efforts will be made, consistent with the available resources, prevailing Fire Danger Rating, fire intensity and fire crew safety, to exclude wildfire from or restrict spread of wildfire in high conservation priority areas.

### **Actions**

- Review and revise the fire management plan (see Section 20).
- Prepare programs for ecological management burning, setting out the fire frequencies necessary to maintain viable populations of species and communities of conservation value.
- Implement and regularly review the macropod management program (see Section 19.5).
- Undertake surveys for rare or endangered grassland species.
- Research the life cycle of *Cyphanthera tasmanica*.

## **19.2 Animal Conservation**

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### **Objectives**

- The objectives for animal conservation in the Park and the Reserve are to:
  - conserve and protect rare, threatened and endangered animal species;
  - conserve and protect indigenous animals and habitat diversity; and
  - minimise harmful impacts on indigenous animals and habitats.

### **Policies**

- The following Park or Reserve habitats will be left undisturbed or otherwise given special protection:
  - forty-spotted pardalote and swift parrot core breeding areas;
  - muttonbird colonies;
  - sea eagle nesting sites;
  - seal haul-outs;
  - sea bird habitats on Ile des Phoques; and
  - habitats of beach breeding birds during the breeding season.
- All practicable efforts will be made to prevent fire and other impacts on breeding.
- Fuel reduction and ecological management burns will be planned and managed to assist protection of forty-spotted pardalotes and swift parrots.
- Because dead trees, small stumps and fallen limbs are all important nesting sites, firewood will not be collected from known core breeding areas of the forty-spotted pardalote.
- Public use (including organised events) of shore breeding birds areas and areas with muttonbird rookeries may be limited or access restricted to prevent disturbance of breeding.

- Information and education will be provided to visitors on minimising impacts on shore breeding birds.

#### **Actions**

- Prepare programs of ecological management burning, setting out the fire frequencies necessary to maintain habitat and viable populations of species of conservation value.
- Implement the relevant recommendations of The Swift Parrot Recovery Plan (Gaffney & Brown, 1992).
- Implement the relevant recommendations of The Forty-Spotted Pardalote Recovery Plan (Bryant, 1991).
- Maintain a firebreak across the isthmus to help prevent a fire burning over the entire island (see Section 20).
- Maintain regular patrols prior to and during the muttonbird season, particularly during the months of February - May, to discourage people from interfering with rookeries.
- Monitor for disturbance of shore birds breeding success between early September and late February.
- Discourage visitors from feeding animals by making them aware of the harmful effects on wildlife of inappropriate food.

### **19.3 Geoheritage Conservation**

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#### **Objectives**

Geoheritage conservation aims to conserve the full diversity of earth features, systems and processes which exist naturally. Geodiversity includes the full range of earth features, in the most part non-living aspects of the earth, including rock types, landforms and soil types and the processes which develop them.

- The objectives of geoheritage conservation are to:
  - preserve and maintain geodiversity;
  - preserve and maintain significant geoheritage sites; and
  - minimise harmful impacts on geoheritage sites

#### **Policies**

- Ensure that management practices and development does not affect the integrity of significant geoheritage features or processes.
- Potential impacts on geoheritage features and processes will be assessed when planning any development or action (Section 24).
- Erosion hazard and status assessments will be included in the Fire Management Plan.

- Land rehabilitation and stabilisation will only be carried out after a geomorphological assessment is undertaken.
- Collecting from the Fossil Cliffs will not be permitted without the written approval of the Director.

#### **Actions**

- Prepare and disseminate an inventory of significant geoheritage sites.
- Monitor impacts on geoheritage features, systems and processes.

### **19.4 Marine Conservation**

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#### **Objectives**

- The objectives of marine conservation in the Park and the Reserve are to:
  - preserve and maintain marine biodiversity;
  - preserve and protect rare, threatened and endangered species;
  - preserve and protect marine habitats; and
  - minimise harmful impacts on the marine environment of the Park.

#### **Policies**

- Development proposals in the Marine Zone will demonstrate that damage to seagrass beds or other marine features will not occur.
- Control mooring and anchoring to prevent damage to the Marine Zone.
- Boat effluent discharge will not be permitted within the Marine Zone.
- Rule 13 of the *Fisheries Rules 1996*, which prohibits the taking of any fish or marine plant in the parts of the Marine Zone, will be strictly enforced (see 17.2).
- A permit from the Director of National Parks and Wildlife will be required for collecting within the Marine Zone between Cape Boullanger and Return Point (see Sections 25 and 26).
- Development in the Park will be strictly controlled to prevent effluents, spills and nutrient discharges into the Marine Zone.
- Management of marine infestations of *Undaria* will be based on clear, well documented scientific research.

#### **Actions**

- Investigate options for extending the no-fishing area to encompass all of the Marine Zone.

- Provide support to researchers monitoring the marine environment of the Park.
- Monitor the distribution and impacts of *Undaria pinnatifida* in the Marine Zone.
- Monitor the distribution and impacts of *Asterias amurensis* in the Marine Zone.
- Police the marine conservation policies for the Marine Zone.

### **19.5 Introduced Animals**

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#### **Objectives**

- The objectives of management of introduced animals in the Park and the Reserve are to:
  - eradicate introduced species where this is feasible and warranted by the damage being caused; and
  - control and manage introduced species where eradication is not possible or warranted.

#### **Policies**

- New introductions of animals will not be permitted without an approved comprehensive scientific assessment.
- Eradication will only be attempted where non target species are not threatened by the proposed methods, unless the threat from the introduced species is greater than the threat from eradication methods.
- Eradication, control, and containment programs and priorities will be based on clear, well documented contemporary knowledge or, where necessary, additional research.
- Except in accordance with the *National Parks and Reserves Regulations 1971*, stock, pets and other domestic animals will not be permitted entry into the Park or the Reserve.
- Control programs for cats and rats will continue.
- Introduced animals will not be fed and, if necessary, sick, dying, or overpopulations of macropods will be culled.
- Animal management and control measures, including fencing, culling, biological control, removal, or relocation, will be adopted if studies show them to be warranted and practicable.

#### **Actions**

- Monitor introduced animal populations and undertake regular surveys of each species.
- Continue to implement and regularly review the macropod management program.

## **19.6 Phytophthora Protection**

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### **Objectives**

Maria Island appears to be free of the fungus *Phytophthora cinnamomi*.

- The objectives of *Phytophthora* protection are to:
  - prevent the introduction of *Phytophthora cinnamomi* to the Park and the Reserve; and
  - educate the community in *Phytophthora* prevention hygiene measures.

### **Policies**

- All practicable steps will be taken to prevent the introduction or spread of *Phytophthora*.
- As far as possible, all materials for upgrading roads and landscape works will be obtained from within the Park. Any imported soil, fill or crushed rock used in any construction project will be obtained from sites where *Phytophthora* has not been found, using *Phytophthora*-free machinery.
- As far as possible, all plants used in planting works within the Park will be obtained by propagation, in *Phytophthora*-free soil or other medium, at a nursery established on the island. If this method is not available, obtain approval from the Senior Botanist for plant selection and obtain plants from certified *Phytophthora* free nurseries.
- Permits for aircraft to land will require they have clean landing apparatus.
- Visitors will be encouraged to wash equipment, boots, and bicycles prior to coming to the Park, and required to wash all boots and equipment before visiting the Reserve.

### **Actions**

- Undertake periodic surveys of *Phytophthora* prone areas to monitor the disease-free status of the Park.
- Inform visitors of the *Phytophthora* threat to the Park.
- Publicise and enforce the requirements and procedures governing use of the wash down system installed near the Darlington jetty.
- Establish, disseminate and strictly enforce guidelines for the entry into the Park of all vehicles and machinery. Include types of permitted vehicles, entry permit procedures, weather and seasonal controls on entry, hygiene standards, route and manoeuvring controls and any other necessary controls.

## **19.7 Landscape Management**

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### **Objectives**

Many plants have been introduced to the Park and the Reserve. Some have become weeds, invading bushland and competing with indigenous species. In other cases, introduced plants form part of the historic environment, and as such are one of the values of the Park. Overgrazing has in the past caused erosion of pastures, and prevented regeneration of understorey shrubs and herbs in adjacent open forests and woodlands. Effective control and management of introduced plants is necessary and priority targets for control need to be identified.

- The objectives of landscape management are to:
  - eradicate introduced plant species where this is feasible and warranted by the damage being caused;
  - control and manage introduced plant species where eradication is not possible or warranted;
  - prevent erosion and restore eroding areas;
  - prevent watercourse degradation;
  - clean up and rehabilitate watercourses;
  - identify and maintain significant heritage vegetation and cultural landscapes (including pastures); and
  - revegetate or allow natural regeneration of all other pastures and disturbed areas.

### **Policies**

- Landscape management will be guided by programs which cover:
  - identification, management and maintenance of significant cultural landscapes and heritage vegetation;
  - identification and protection of significant viewfields;
  - protection of geoheritage values;
  - weed control and eradication;
  - revegetation works; and
  - erosion control.
- Use relevant archaeological, historic heritage, botanical and zoological information in landscape management programs.
- Eradication or control of introduced plants will only be attempted where non target species are not threatened by the proposed methods, unless the threat from the introduced species is greater than the threat from eradication methods.
- Weed eradication, control, and containment actions and priorities will be based on clear, well documented contemporary knowledge or, where necessary, additional research which:
  - identifies species requiring priority for weed control;
  - identifies areas where introduced plants should be eradicated or controlled, and where they should be retained for their cultural interest or as a means of environmental protection;

- assesses any threat plants of heritage significance pose as environmental weeds;
  - specifies methods of removal and disposal of weeds;
  - identifies protocols for the use of herbicides and fertilisers;
  - prescribes the appropriate time of year for control; and
  - outlines the structure of any further research into the most effective means of control.
- Unless otherwise specified, weeds will be controlled in conjunction with pasture management and native plant establishment.
  - The assistance of volunteers will be sought for control and eradication where suitable planned and programmed works and effective supervision or direction are available.
  - Introduced plants of heritage significance will be retained and, if necessary, replaced to maintain continuity of the historic cultural landscape.
  - Pasture that forms part of significant cultural landscapes will be retained.
  - Introduced plants and cultural landscapes retained for their heritage significance will be managed to prevent their invasion of significant indigenous plant communities.
  - Landscape maintenance and renewal in the Darlington and Point Lesueur Zones will be based on the researched layout of heritage plantings and cleared areas.
  - When practicable, other cleared areas of low heritage significance will be revegetated to limit macropod grazing and consequent erosion problems.
  - The existing landscapes that show no evidence of clearing or disturbance for human settlement, agricultural, mining, forestry, or other activity will be maintained undisturbed.
  - Except in emergencies, vehicles will only be permitted on designated tracks.
  - Indigenous trees, shrubs and, as far as practicable, indigenous grasses (eg. *Spinifex sericea*) will be used to revegetate dunes.

#### **Actions**

- Prepare a heritage vegetation study to identify, record and assess the significance of historic plantings and cultural landscapes of Darlington.
- Prepare landscape management programs.
- Maintain, propagate and re-establish significant historic plantings in keeping with the heritage vegetation study.

- Prevent the spread of introduced plant species retained for heritage purposes.
- Eradicate, control or contain weeds.
- Identify, rehabilitate and revegetate pasture of low heritage significance in accordance with landscape management programs.
- Rehabilitate and revegetate disused quarries not significant as historic heritage.
- Rehabilitate, revegetate or otherwise stabilise disturbed or eroding areas.
- Monitor Bloodstone Beach, Chinamans Bay, Pine Hut Creek, the northern end of Shoal Bay, and other parts of the island for erosion and dune stability.
- Construct and maintain suitably designed dune crossings and, where necessary, barriers, at Darlington Bay.
- Revegetate or otherwise stabilise and protect damaged dunes.
- Revegetate Bernacchi's Creek in the vicinity of the current campground location in accordance with the site plan for the Darlington Zone.
- Using indigenous species, revegetate around the new workshop to stabilise the creek bank and screen from visitors.
- Undertake revegetation of other creek banks where required.

## **19.8 Managing Human Impact**

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### **Objectives**

Rubbish is found in some isolated areas of the Park accessible by boat, and in the bush around the existing rubbish tip. Visitors may introduce disease such as *Phytophthora*. Visitors in large groups may disturb the recreational character of some Zones within the Park. Firewood collection is causing degradation at some campsites and large groups can spread campsite impacts into previously undisturbed areas. To minimise impact, maximum party sizes have been determined as part of a minimal impact bushwalking program developed by the Parks and Wildlife Service. Refer also to Sections 23 and 24 for further details on management of human impact.

- The objectives for managing human impacts are to:
  - protect and conserve environmental and heritage values;
  - protect and conserve the special tourism and recreation character of the Park; and
  - maintain the Park in a state that is valued by visitors.

### **Policies**

- All development will accord with this management plan.
- A maximum party size of thirteen for overnight parties will be encouraged in the Recreation Zone.
- A maximum party size of eight for overnight parties will be encouraged in the Natural Zone.
- The maximum party size for licensed overnight tours in the Recreation Zone will be thirteen, with a maximum of ten clients and at least one guide per five clients.
- The maximum party size for licensed day or overnight tours in the Natural Zone will be eight, with a minimum of two guides per party.
- Camping areas will be designated within the Park and, if necessary, tent sites defined to prevent environmental damage.

### **Actions**

- Provide minimal impact toilets in designated visitor areas.
- Inform visitors of appropriate minimal impact use of the Park.
- Continue collection of garbage at Darlington. However, encourage visitors to take their garbage with them.
- Manage the existing tip near Darlington to minimise environmental impact.
- Continue and where possible improve upon the recycling program.
- Prepare a contingency plan for dealing with spills of fuels and hazardous or toxic chemicals.
- Develop and disseminate regulations for refuelling and cleaning of vehicles and boats within the Park.

## **20 Fire Management**

The vegetation of Maria Island has been exposed to periodic fire for at least 10,000 years and fire is a natural part of the Park environment. In some cases, fire maintains a diversity of plant communities by enabling more fire-tolerant communities (principally grasslands, heathlands and woodlands) to regenerate.

Fire management activities need to take particular account of the distribution and regeneration strategies of different plant communities. Fire-sensitive plant communities (such as those on and above the plateau shelf and Glenloth cliff tops) should be able to regenerate provided sufficient time between hot fires allows seed setting.

The priority for wildfire prevention depends on a variety of circumstances and requirements set out in this management plan. The focus of wildfire prevention is on protection of heavily visited areas and areas of high environmental or heritage significance. Fortunately, fuel reduction burning in grassy open forest and grassy woodland on the lower western slopes of the Maria Range will help protect vulnerable communities on the upper slopes from wildfire while helping to maintain the biodiversity of the lowland grassland communities.

The highest priority for wildfire suppression is protection of life and property. Nevertheless, during a wildfire, fire behaviour and suppression necessity will determine the on-ground actions and may mean that priorities need modification on the day. The development of high fuel loads may preclude direct suppression of any actively spreading fire which might occur in the Recreation and Natural Zones.

## **20.1 Fire Management**

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### **Objectives**

- The objectives of fire management are to:
  - protect visitors and staff;
  - protect heritage precincts and sites;
  - protect Park facilities; and
  - maintain or improve nature conservation values.

### **Policies**

- On the basis of contemporary knowledge, fire management will be directed towards fire regimes and provision of fire protection considered necessary to protect life and property and the diversity and values of flora, fauna and landforms.
- Fuel reduction, including burning, slashing, mowing, and similar methods, may be used for wildfire prevention and containment.
- Fuel reduction will be conducted in accordance with guidelines set out in the Fire Management Plan, in areas designated and approved in that plan.
- Ecological management burning may be undertaken.
- The Fire Management Plan will include guidelines for the preparation, approval, implementation, and review of ecological management burning programs.
- All fuel reduction and ecological management burning, and any other actions covered by the Fire Management Plan will be assessed in accordance with procedures approved by the Director.
- Fire protection priority will be given to Callitris stands, mountain top vegetation, rainforest and lowland gullies.
- Fire frequencies set out in ecological management programs will aim to maintain viable populations of and/or habitats for plants and animals of conservation value.

- All practicable measures will be taken to diminish the risk of wildfires occurring in the Park and to lessen their impact.
- Subject to monitoring of effects, including erosion and the viability of species, the key areas for fuel reduction will be:
  - in the vicinity of Darlington, French's Farm and Encampment Cove and other known camping areas;
  - around historic buildings and ruins;
  - adjacent to walking tracks;
  - on the Isthmus and between French's Farm and Bloodstone Point;
  - mosaic burning areas on the lower slopes of the Maria Range to diminish the risk of high intensity fires reaching subalpine communities on the plateau shelf.
- Park visitors may only light fires in a designated fireplace, except in an emergency or otherwise as authorised by permit.
- Fires will be banned in the Park during periods of high to extreme fire danger, as well as during days of Total Fire Ban. Take all practicable measures to inform visitors of such bans.
- All or some areas of the Park may be closed when fire danger conditions warrant by restricting access under Regulation 12 of the *National Parks and Reserves Regulations 1971*.
- Except on days of relatively low Fire Danger Index, suppression procedures will usually involve bringing the fire to safe edges provided by the sea and any low fuel areas.

#### **Actions**

- Review and revise the Maria Island Fire Management Plan in accordance with this management plan, to refine the objectives, policies, and procedures for fire management, and provide for fuel reduction, ecological management burning and other measures.
- In the Fire Management Plan, designate tracks to be retained or constructed as firebreaks or fire trails.
- Implement the Maria Island Fire Management Plan.
- Educate visitors about fire management policies and fire safety procedures as part of an interpretive program for the Park.
- Periodically check historic buildings for fire hazards.
- Maintain all firebreaks, including those on the isthmus.
- Strictly enforce any restrictions which apply to lighting fires.
- Make all practicable efforts, consistent with the available resources, prevailing Fire Danger Rating, fire intensity and fire crew safety, to exclude wildfire from or restrict the spread of wildfire in high conservation priority areas, including:

- Darlington / Cape Boullanger area;
  - Point Lesueur / Encampment Cove Campground;
  - Hopkiln;
  - House behind Hopground Beach;
  - Frenchs Farm buildings and campground;
  - Robeys Farm and outbuildings; and
  - areas with fire-sensitive vegetation particularly the plateau shelf and summit of the Maria Range and Glenloth cliff tops.
- Install adequate, practicable fire protection to all structures.

## **20.2 Fire Management Resources**

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### **Policies**

- Within the capacity to do so, Parks and Wildlife Service personnel and equipment will be provided for effective first attack capability. Further assistance may be sought through the Tasmania Fire Service and Forestry Tasmania.

### **Actions**

- Maintain fire suppression equipment to operational standards.
- Train Park staff in fire prevention and suppression procedures, including fuel reduction burning, wildfire and structural fire fighting, use of fire fighting equipment, and actions to be taken at different fire ratings.

## **21 Aboriginal and Historic Heritage**

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The value of Aboriginal and historic heritage on Maria Island and Ile des Phoques is enhanced by the protected island setting.

### **21.1 Aboriginal Heritage**

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#### **Objectives**

The Aboriginal heritage of Maria Island has not been systematically investigated. The island contains a number of sites, mainly in the form of middens and artefact scatters. Several middens have been recorded, and further sites are likely to be found. Care needs to be taken to ensure that visitors or management activities do not disturb Aboriginal sites.

- The objectives of management of Aboriginal heritage are, in cooperation with the Aboriginal community, to:
  - identify and record sites of Aboriginal heritage;
  - protect and conserve Aboriginal heritage; and
  - interpret Aboriginal heritage.

### **Policies**

- To provide for any necessary special management conditions, areas of Aboriginal heritage may be designated as heritage precincts or heritage sites (see Sections 17.2).
- Assess and protect Aboriginal heritage values in accordance with both the objectives and prescriptions of this Management Plan and any agreed national or state charter or guidelines for Aboriginal sites.
- Do not publicise sites of Aboriginal significance unless the site has been assessed, in cooperation with the Aboriginal community, for educational or interpretative use. Where applicable, make use of any agreed Aboriginal interpretation strategy.
- Report all Aboriginal sites discovered in the Park or the Reserve to the Director, in accordance with the *Aboriginal Relics Act 1975*.
- Consult the Aboriginal community on any undertaking or development which may impinge upon Aboriginal sites.
- Ensure all proposed landscape modification, development, or maintenance within the Park or the Reserve is subject to the prescriptions of Section 24
- As far as possible, development will be located well away from areas of Aboriginal heritage.
- Aboriginal heritage will not be deliberately disturbed for management, development or research purposes unless the Director determines there is no practicable alternative and a permit has been issued under the *Aboriginal Relics Act 1975*.

### **Actions**

- In cooperation with the Aboriginal community, identify and record Aboriginal sites.
- Consult with the Aboriginal community on the management of Aboriginal heritage.
- Develop interpretation of the Aboriginal heritage of Maria Island in consultation with the Aboriginal community.
- Monitor Aboriginal sites for, and protect from, damage.

## **21.2 Historic Heritage Management**

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### **Objectives**

The historic heritage values of Maria Island and Ile des Phoques need protection from avoidable decay or disturbance, and maintenance of their integrity. A coordinated approach to conservation works is required, planned within a framework of objectives and policies based on the significance, context and physical condition of the remains as well as the levels of funding available.

The Darlington Zone and the Point Lesueur Zone are designated heritage precincts which include both Aboriginal and historic heritage. Most of the known significant historic fabric is contained within these areas (or relates to one or other of them). There are historic heritage areas outside the Darlington and Point Lesueur Zones which also are important for heritage conservation. Sightlines, road and rail formations, isolated buildings, ruins, or other features, and previously cleared areas all form an identifiable heritage setting. Conservation of heritage values requires not only attention to remaining structures, features, and artefacts, but also careful and sympathetic management of the surrounding settings and cultural landscapes.

- The objectives of historic heritage management are to:
  - identify and record historic heritage sites in the Park and the Reserve;
  - maintain the integrity and authenticity of cultural landscapes, structural and other historic remains and movable heritage;
  - protect and conserve heritage from damage; and
  - on Maria Island, present and interpret heritage.
  
- The objectives of conservation works are to:
  - conserve the layers of historic fabric;
  - interpret the visual complexity;
  - conserve all remaining heritage fabric and features;
  - conserve the existing cultural landscape;
  - exclude intrusive development and activity; and
  - maintain the landscape quality, visual integrity and atmosphere of heritage precincts and heritage sites.

### **Policies**

The following policies provide a framework for consistent decision-making in the future conservation of historic heritage.

- Conservation and management of historic heritage in the Park and the Reserve will adhere to the Burra Charter of Australia ICOMOS (Marquis-Kyle & Walker, 1992) and its associated guidelines.
  
- The heritage precinct of the Darlington Zone will be conserved and managed in accordance with the Conservation Plan for Darlington (Godden Mackay, 1992) insofar as it is consistent with this management plan.

- Conservation and management of the heritage precinct of the Point Lesueur Zone will accord with a conservation plan prepared for the Zone.
- A conservation policy statement or conservation plan, including specific assessment of significance, will be prepared before any decisions about major works, use, removal or interpretation of individual elements within a heritage precinct or site. Such statements or plans will be prepared in accordance with the principles outlined in the Burra Charter, using the methodology outlined in Kerr (1990).
- Adaptations will be readily reversible and new services will not be apparent from outside buildings, or impact upon them.
- Accurate, detailed working documentation, appropriate to the scale and significance of the works, will be prepared prior to any conservation works.
- Accurate, detailed documentation, appropriate to the scale and significance of the works, will be prepared to record any conservation works "as built".
- Priority in conservation works will be given first to maintenance, then preservation, then restoration (with possible adaptation).
- Missing fabric elements may be reconstructed in accordance with a conservation policy statement or plan, but hypothetical reconstruction of built fabric will not be permitted.
- Laboratory conservation and curation will be sought for any items removed for protection, security or scientific purposes.
- The introduced landscape elements and spaces will be treated as integral parts of the cultural heritage of the island, requiring maintenance and, where necessary, replanting.
- Development or disturbance to the fabric of heritage precincts and sites will be strictly limited and controlled to retain their heritage integrity.
- Future developments and uses in any heritage precinct or site will benefit its conservation as an historic place or, at least, not detract from this.
- To avoid disturbance of historic ground features, including quarries, sub-surface remains, and archaeological deposits such as building footings, hopground drainage channels and tracks, an archaeological assessment will be required before approval of any development or ground-breaking work (see Section 24).
- Except in facilities and services areas, new stand-alone buildings will not be permitted in heritage precincts or sites.

**Actions**

- Evaluate Darlington and Point Lesueur (Long Point) for inclusion in a Convicts Serial Sites World Heritage nomination.
- Identify all heritage areas and sites and designate them heritage precincts or heritage sites.
- Make safe dangerous structures.
- Remove damaging uses, activities and developments which intrude upon or detract from the heritage values of heritage precincts or heritage sites.
- Undertake regular maintenance and remedial work on buildings, particularly maintaining roofs, guttering, flashings, and ground treatment for rainwater run-off.
- Record and assess significance of historic fabric and features.
- Prepare conservation policy statements or plans for all significant buildings, sites and precincts.
- Catalogue, appropriately store, or present historic artefacts to visitors. When warranted, adopt conservation measures.
- Install adequate, practicable fire protection to all structures.
- Undertake archaeological and historical research to illuminate the significance of heritage features and provide a framework for heritage management.
- As circumstances and resources permit, record and assess the significance of shipwrecks around the coast of Maria Island.
- Present and interpret conservation works in progress, provided safety of the public and fabric can be assured.
- Seek funds to undertake heritage management from:
  - State Government Works and Services allocations;
  - National Estate Programs;
  - Commonwealth Government (Special Grants); and
  - Private companies (business community).

## **22 Interpretation and Education**

### **Objectives**

- The objectives of interpretation and education are to:
  - encourage pre-visit awareness of the Park's special recreational and tourism character, facilities, and opportunities;
  - introduce visitors to the complex and layered landscapes of Maria Island;
  - reveal the diversity and values of the environmental and heritage features of the Park;
  - explain the different periods of people's use of the Island;
  - encourage visitors to pursue their interests and explore what the Island has to offer;
  - realise the educational values of the Park;
  - canvas issues to be confronted in managing the Park; and
  - inform visitors of Park etiquette and minimal impact practices.

### **Policies**

- Interpretation programs and facilities will mainly be concentrated in the Darlington and, to a lesser extent, Point Lesueur Zones.
- The three themes of interpretation will be:
  - Maria Island is a complex and layered landscape;
  - Maria Island is an example of the evolutionary nature of how people interact with the environment; and
  - Maria Island has been influenced by isolation.
- Interactive interpretation programs may be developed.
- The annual summer interpretation program will be continued as funds permit, focusing on providing a range of interpretive activities for visitors.
- Subject to the recommendations of the relevant conservation and interpretation plans, interpretive facilities may be located in historic buildings.
- The Commissariat Store will continue to be used for the initial orientation of visitors to the island.
- In accordance with the conservation plan for the building (Godden Mackay, 1995), and the availability of funds for building repairs, sections of the Coffee Palace will be used to provide information and interpretive facilities.
- Close liaison will be maintained with the Education Department, the University of Tasmania, and other relevant bodies to ensure that the educational value of the Park is fully realised whilst conflicts with other users are minimised.

- Assistance and advice in the production and distribution of appropriate educational material and briefing notes for teachers and group leaders will be provided.
- Use of the Park for teaching about the environmental and heritage values of the island will be encouraged.
- School and other groups undertaking educational activities will be encouraged to discuss their proposed program with staff when booking.

**Actions**

- Provide prospective Park visitors with pre-visit information at Louisville Point and any other major departure points.
- Place pre-visit brochures with tour operators.
- Train and assist ferry operators to provide information to visitors.
- Upgrade interpretation in Darlington for day visitors.
- Implement and regularly review the interpretation plan to guide development of interpretation facilities in the Park.
- Develop interpretation of the Aboriginal heritage of Maria Island in consultation with the Aboriginal community.
- Provide interpretation about the marine environment.
- Inform visitors of hazards likely to be encountered, within the normal risks associated with the activity being undertaken.
- Detail ways for visitors to prepare for visiting the Park, and to handle any emergency situations during their visit.
- Investigate establishing a multi-purpose research/field study/education centre, in consultation with relevant groups and organisations.
- If a research/field study/education centre is feasible, prepare a brief setting out the role, management mechanisms, and appropriate design and location criteria for such a facility and support development in accordance with that brief.
- Develop and disseminate guidelines and information on requirements for boating and sea access within the Park.

## **23 Developing and Managing Tourism and Recreation**

An important responsibility of management is to protect the tourism and recreational values of the Park and provide for visitors to enjoy them. The key tourism and recreational attributes of the Park are its environmental and heritage values and the peaceful, "away from it all" island atmosphere. This quality, of being both separate and different from mainland Tasmania, is valued by visitors and is widely appreciated, particularly as an important educational experience for school and community groups. To maintain these values, the type, location and level of visitor and management facilities has to be determined and made explicit.

### **23.1 Developing and Managing Tourism and Recreation**

#### **Objectives**

- The objectives for developing and managing tourism and recreation in Maria Island National Park are to:
  - provide opportunities for activities, relaxation, contemplation, enjoyment and educational experiences through direct contact or participatory involvement with the values of the Park;
  - encourage understanding of and support for national parks by highlighting and presenting the values of the Park;
  - safeguard the special tourism and recreational character of the Park;
  - provide visitors with services and facilities consistent with the above objectives;
  - teach sound, sustainable, environmental behaviour and practices;
  - contribute directly to meeting the costs of researching, protecting, conserving, and managing the Park; and
  - provide economic benefit to the community.

#### **Policies**

- The tourism and recreational themes for Maria Island National Park will be:
  - Attractive and accessible flora, fauna and landscapes;
  - Authentic and undisturbed Aboriginal and historic heritage;
  - An atmosphere of quietness, solitude, and contrast with the everyday artefacts of modern life; and
  - An island experience of separation and isolation.
- All tourism and recreational development and marketing will be required to conform with and emphasise the tourism and recreational themes.
- All tourism and recreational development will conform with and contribute to the realisation of this management plan, site plans, conservation plans, and a tourism and recreation strategy prepared for the Park.

- All tourism and recreation will accord with any requirements and codes established by the Parks and Wildlife Service for sustainable environmental practices and behaviour and protection of heritage values.
- Consistent with this management plan, tourism and recreation facilities and services will be provided, principally in the Darlington and Point Lesueur Zones.
- Facilities and services will be developed progressively when funding and other resources are available.
- The range of visitor facilities provided will complement rather than compete with those which are or could be provided in nearby mainland areas and departure points to the island.
- In the Darlington Zone and the Point Lesueur Zone, development will be guided by the provisions of site plans for each Zone, prepared in accordance with Section 24.
- In providing for visitors, emphasis will be placed on essentially self-sufficient overnight and day use of the Park.
- Darlington will be the major visitor centre with overnight and day facilities and services.

#### **Actions**

- Develop and implement a tourism and recreation strategy for the Park, consistent with this management plan.
- Liaise with Tourism Tasmania, the local Council and local tourism groups to implement the tourism and recreation strategy.
- Publicise the features and values of the Park.

#### **23.2 Priorities for Development of Visitor Services and Facilities**

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While flexibility in response to visitor needs and budgetary constraints must be maintained, the general priorities for development of visitor facilities are set out below.

- First priority will be given to developing visitor facilities in the Darlington Zone before any in the Point Lesueur Zone, which in turn will have priority over the Recreation Zone.
- High priority will be given to upgrading sewerage works, water, and power supplies in the Darlington Zone.
- High priority will be given to provision of good quality visitor information and interpretation, particularly in the Darlington Zone.
- In general, priority will be given to development of short walks within or from the Darlington Zone or the Point Lesueur Zone over upgrading of longer walks.

### **23.3 Visitor Services and Facilities in the Darlington Zone**

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#### **Policies**

While the exact provision and extent of visitor and management facilities depends on the preparation of a site plan for the Zone and on funding, the Darlington Zone is intended to serve as the principal location for development of facilities for visitors to the Park. Supplying water and sewerage connections to buildings in the historic precinct is difficult and expensive. Provision of energy sources such as firewood, gas and diesel to service visitors and their facilities is becoming increasingly difficult and expensive. Minimising energy imports to the island would reduce staff involvement in these activities.

- In the site plan, assess and set limits on the acceptable number of day and overnight visitors for the Darlington Zone, based on capacities of services, maintenance of environmental and heritage qualities, and the quality of visitor experience.
- Professional advice will be obtained before undertaking works on electrical and other energy services, sewerage systems, and water supply.
- Construction and maintenance in the Zone will be sufficient to withstand the impact of the anticipated number of visitors.
- Potential uses of any historic building will be determined by preparation of a conservation plan (see Section 21).
- In accordance with the conservation plan (Godden Mackay, 1995), the Mess Hall will be used for visitor services and activities.
- Provided it accords with the recommendations of a conservation plan, parts of the Penitentiary may be restored so that visitors can better appreciate convict living conditions.
- Provided it accords with the recommendations of a conservation plan, parts of the Penitentiary may continue to be used for visitor accommodation.
- In accordance with the conservation plan (Godden Mackay, 1991), Bernacchi's Terraces may be restored for visitor accommodation.
- In accordance with the conservation plan (Godden Mackay, 1995), parts of the Coffee Palace may be restored for visitor accommodation.
- The provision of hostel-type accommodation, bunk house, and self-contained accommodation, consistent with the prescriptions of this management plan and the site plan, will be considered.
- Other than works approved by a relevant conservation plan, construction of new accommodation developments will be limited to the facilities and services area A to encourage

integration of visitor services and facilities at concentrated development sites.

- Facilities and services area A will provide, among other things, for the connection to, or development, or relocation of infrastructure services such as sewerage, water supply, power, and communications for the adjacent main Darlington settlement.
- Facilities and services area B may allow, and will be limited to, marine research, marine tourism and interpretation facilities, and provision or upgrading of management and public landing facilities, including information, toilets and public shelter.
- Facilities and services area C may allow, and will be limited to, provision or upgrading of public picnic and camping facilities, including information, toilets and showers, and public shelter.
- Ferry-based provisioning, and guided tours and hire services in the Darlington Zone, consistent with the prescriptions of this management plan and the site plan, will be encouraged.
- The sale, within the Commissariat Store, of souvenirs and memorabilia focussed on Tasmanian made merchandise directly related to the features and values of the Park will be encouraged.
- In the Darlington Zone, camping will be available only in camping areas designated by the managing authority.
- Temporary standing camp, equipment cache, or similar accommodation or services provisions may be considered in the facilities and services area A, but not elsewhere in the Darlington Zone.

### **Actions**

- Prepare a site plan for the Darlington Zone (see Section 24).
- Provide gas barbecues and centralised fireplaces to limit firewood consumption.
- Encourage campers to bring fuel stoves.
- Upgrade the reliability of the water supply system and the quality of the water supply.
- Rationalise and upgrade electrical and other energy systems.
- Encourage efficient energy use by management and visitors.
- As necessary, redesign and upgrade the Darlington sewerage systems, ensuring site disturbance and water consumption are minimised.

#### **23.4 Visitor Services and Facilities in the Point Lesueur Zone**

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##### **Policies**

- In the site plan, assess and set limits on the acceptable number of day and overnight visitors for the Point Lesueur Zone, based on capacities of services, maintenance of environmental and heritage qualities, and the quality of visitor experience.
- The provision of hostel-type, bunk house, simple "wilderness" lodge, and similar styles of accommodation, consistent with the prescriptions of this management plan and the site plan, will be considered.
- Construction of new permanent accommodation developments will be confined to the facilities and services area A (Map 7).
- In the Point Lesueur Zone, camping will only be permitted in the designated camping areas at French's Farm (C on Map 7) and Encampment Cove (D on Map 7).
- The number of visitors to the campgrounds will be monitored and additional basic facilities, such as environmentally minimal impact toilets, provided as needed.
- Subject to environmental assessment and conditions, temporary standing camp, equipment cache, or similar accommodation provisions may be permitted in the Point Lesueur Zone, located within the facilities and services area B, inland from the farmhouse at French's Farm (Map 7).
- Potential uses of any historic building will be determined by preparation of a conservation plan (see Section 21).
- Other facilities in this Zone may include picnic facilities, a small jetty at Encampment Cove, nature and historic trails, interpretive displays, toilets, and roof water collection from buildings approved for this Zone.

##### **Actions**

- Prepare a site plan for the Point Lesueur Zone (see Section 24).
- Complete repairs to the farmhouse at French's Farm and continue to allow visitor access to it.
- Maintain the shearing shed at French's Farm in a safe condition and leave open for visitors to explore.
- Move the existing overnight shelter at Encampment Cove closer to the campground and as far as practicable from the historic precinct of "Kintail".

### **23.5 Visitor Services and Facilities in the Recreation Zone**

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#### **Policies**

There are no designated campgrounds in this Zone at present. Camping occasionally occurs at Trigonía Corner, Deep Hole and Four Mile Creek.

- Facilities in this Zone may be developed to the level of walking tracks, vehicle tracks for management purposes, designated camping areas with environmentally minimal impact toilets, roof water collection from them, and signs.
- Existing provisions for visitors in this zone will be maintained but not significantly extended.
- Track marking and upgrading will accord with prescriptions set out in Sections 18.5 and 24.
- Buildings for accommodation purposes will not be permitted in the Recreation Zone.
- In the Recreation Zone, camping will only be permitted in camping areas designated by the managing authority.
- Subject to environmental assessment and conditions, temporary standing camp, equipment cache, or similar accommodation provisions may be permitted in the Recreation Zone at two sites only, located within 500 metres of any actual or potential public camping area at Four Mile Creek or Trigonía Corner.
- Equipment caches approved for this Zone before 1995, and implemented within three years of approval, will be permitted.
- A camping area limited to not more than 10 tent sites may be established at Four Mile Creek. Facilities will be limited to toilets and a roof water tank.
- Designated camping areas will be monitored for visitor impacts and toilets provided if use warrants.
- Signs will be limited to those giving information on directions, historic features, safety of users, or protection of the Park.
- Rubbish bins will not be provided and visitors will be required to carry out their rubbish.
- Some interpretation may be provided within this Zone.

#### **Actions**

- Maintain and, as necessary, upgrade tracks to ensure protection of the environment and the reasonable safety of users.
- Clearly mark tracks.
- Monitor user impacts on campgrounds.

- Carry out minor repairs and protection work to Robey's farmhouse, and maintain a water tank.

### **23.6 Visitor Services and Facilities in the Marine Zone**

#### **Policies**

- Facilities in the Marine Zone may include underwater interpretation trails, boundary markers, mooring points, and navigation buoys, markers and lights.
- The existing jetty location at Darlington will be the only one permitted in the Zone.
- Licensed dive tours may be permitted in the Marine Zone.
- Motorised water sports, including jet skis, water skiing, and power boat racing, will not be permitted in the Marine Zone.
- Moorings will only be permitted when required for management or when approved by permit by the Director for licensed recreation or tourism operations (see Section 19.4).
- Moorings for private use will not be permitted.

#### **Actions**

- Provide interpretation about the marine environment.

### **23.7 Visitor Services and Facilities in the Natural Zone**

#### **Policies**

Campers and boating parties sometimes use Whalers Cove, which could threaten archaeological resources and cause a fire risk.

- To protect the Whalers Cove site, visitors will be educated about appropriate minimal impact behaviour and practices in accordance with the interpretation plan.
- No visitor buildings or similar facilities will be provided in the Natural Zone.
- Temporary standing camp, equipment cache, or similar accommodation provisions will not be permitted in the Zone.

### **23.8 Assessing Proposals to Develop Tourism Opportunities**

#### **Policies**

- Proposals to develop tourism and recreational opportunities, facilities, or services in Maria Island National Park will:
  - base themselves on the features and values of the Park;
  - ensure the viability, diversity, and values of environmental features and processes are sustainable;
  - adopt environmentally sustainable operating practices, use environmentally "best practice" goods and

- technologies, and explain the principles underlying these to visitors;
  - behave and operate in a manner compatible with protection of Aboriginal and historic heritage features and values, and teach this to visitors;
  - avoid impact on the legitimate enjoyment and experience of the Park's features and values by others;
  - contribute to any external costs (for example sewerage upgrading) resulting from the proposal; and
  - accord with the management plan, being sustainably achievable within the realistic capacity of management resources.
- Tourism and recreation development proposals will conform with and support realisation of this management plan, site plans, conservation plans, and the Park tourism strategy.
  - In addition to this plan and other relevant plans, the Director may set additional assessment guidelines and criteria.
  - Development will complement existing facilities and services, foster visitor appreciation and understanding of the Park's features and values in accordance with the interpretation plan, and provide efficient, high quality service to the public.
  - Uses or developments which may mar cultural landscapes, historic character, and the existing atmosphere of heritage precincts and heritage sites will not be permitted.
  - Tourism and recreation development proposals will provide a clearly demonstrated benefit to the Tasmanian community.
  - All commercial development proposals will submit a detailed business and financial plan showing at least a three year projection of operations, demonstrating economic viability while according with this management plan.
  - The extent of any financial, infrastructure, managing authority services, or environmental resource subsidy of a tourism or recreation proposal will be made explicit and public.
  - Tourism and recreation in the Park will directly and identifiably make a contribution to research, conservation or management of the Park.

### ***Actions***

- Develop and disseminate assessment guidelines and criteria for tourism and recreation proposals, including requirements and codes of sustainable environmental practices and behaviour.
- Develop programs and mechanisms for tourism and recreation development to contribute to research, conservation and management of the Park.

## **24 Managing Development Works**

### **Objectives**

Development works can range from manipulative research, construction of a new track, installation of a toilet, to constructing new buildings or refitting existing ones, and installing or repairing services.

- The objectives of managing development works are to:
  - avoid or minimise the impact of development works on Park or Reserve values; and
  - protect and preserve the special tourism and recreational character of the Park.

### **Policies**

- Assess all proposals for any development, landscape modification, research, management or maintenance work involving any ground breaking, structural disturbance, or environmental manipulation of any kind in accordance with procedures approved by the Director.
- Unless already detailed in a site plan, all major development proposals will require a comprehensive environmental and heritage effects assessment in accordance with guidelines established by the Service. This assessment will be made available for public scrutiny.
- In the Darlington Zone and the Point Lesueur Zone, development will be controlled and guided in a co-ordinated and integrated manner, by the prior preparation and approval of a comprehensive site plan covering the whole Zone.
- Development in the Recreation, Natural, and Marine Zones will be limited to that permitted by the zoning. Such development may first require an approved site plan.
- Planning and design objectives, and performance standards will be defined in the site plan for the Zone with which it deals. Include environmental standards and the extent and quality of visitor and management facilities and services.
- Private memorials or commemorative plaques will not be permitted in the Park or the Reserve.

### **Actions**

- Prepare site plans for the Darlington and Point Lesueur Zones.
- Make the Darlington Zone and the Point Lesueur Zone site plans available for public comment for a period of not less than thirty days prior to finalising and approving them, and subsequently at any time modifications are proposed to them.

## **25 Leases, Licences and Permits**

- All leases, licences and permits will be consistent with the goals, objectives, and prescriptions of this management plan.
- Subject to the *National Parks and Wildlife Act 1970* and this management plan, leases and licences to provide services within the Park may be issued for tourism, recreation, or education purposes.
- Permits to conduct infrequent, organised events or activities within the Park, of not more than one week duration, may be issued by the Director. Where Section 25B of the *National Parks and Wildlife Act 1970* applies, a business licence will be required.
- Leases, licences and permits may be issued for any of the Zones in the Park, provided that they conform with the objectives and prescriptions for that Zone.
- Consistent with Section 24 of this plan, an environmental impact assessment may be required before lease, licence or permit proposals are considered. A detailed, proposal specific, site plan may also be required.

## **26 Research**

### **Objectives**

Research, involving surveying, recording, monitoring and analysing, is a requisite for conservation of the values of the Park and the Reserve. Suggested research priorities are listed in Appendix 7.

- The objectives of research in the Park and the Reserve are to:
  - improve the inventory and understanding of environmental features;
  - improve the inventory and understanding of heritage features;
  - use the Park and the Reserve as a scientific reference area;
  - in the Park, improve knowledge and understanding of visitor behaviour; and
  - assist management of the Park and the Reserve.

### **Policies**

- All research proposed in this management plan will be depend on availability of funding and other necessary resources.
- Prior approval of all manipulative research proposed within the Park and the Reserve, including detailed study proposals and methods, will be required before research begins.
- Proposals by the Parks and Wildlife Service for manipulative research will be subject to the prescriptions set out in 24.

- Before fieldwork commences, a written permit will be required from the managing authority for manipulative research not undertaken by the Parks and Wildlife Service.
- Researchers will submit to the managing authority not less than three copies of all work produced during the period of the research. The managing authority will determine requirements for the form of submission, its timing, confidentiality, and any other matters.
- Permits for the collection of material within the Park or Reserve will not be issued where the managing authority determines that it is possible and appropriate to collect the material outside them.
- Only research that does not have long term adverse effects on the environmental, heritage, or aesthetic values of the Park or Reserve will be permitted.
- Encourage research which improves the inventory and understanding of environmental features of the Park, or assists management of these features.
- Encourage research which improves the inventory and understanding of Aboriginal and historic heritage and archaeological features of the Park, or assists management of these features.
- Formulate a research program which can be used to guide future research in Aboriginal and historic heritage.
- The approval of the Tasmanian Aboriginal community will be obtained for any research involving Aboriginal heritage.
- Encourage research which improves the inventory and understanding of visitor numbers and characteristics, behaviour, needs and expectations, or assists visitor management.
- Investigate establishment of a research centre in the Park (see Section 22)

<b>27</b>	<b>Statutory Powers</b>
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- Subject to this management plan, and the prior approval of the Director of National Parks and Wildlife, the Minister administering the *Roads and Jetties Act 1935* is authorised to improve, repair and maintain the existing jetty at Darlington.
- If construction of a jetty at Encampment Cove in accordance with this management plan is approved, then, subject to this management plan, and the prior written approval of the Director of National Parks and Wildlife, the Minister administering the *Roads and Jetties Act 1935* is authorised to

construct, improve, repair and maintain that jetty at Encampment Cove.

## **28 Administration**

This section deals with staffing, organisation, facilities, procedures and management priorities. The prescriptions of this plan which involve a budget allocation are subject to the determination of budget priorities by the Director of National Parks and Wildlife.

### **28.1 Staffing**

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Conserving the variety of environmental and heritage values of the Park and Reserve, while catering for visitors to the Park, demands sufficient and highly competent staff.

- Subject to funding, maintain staff at levels sufficient for proper administration and maintenance of the Park and Reserve in accordance with the management plan.
- Train staff to understand and implement the goals, objectives and prescriptions of the management plan.
- Encourage volunteers when suitable, planned and programmed works and adequate supervision are available.

### **28.2 Staff Accommodation**

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- Maintain accommodation on the island for permanent staff, temporary and visiting staff, consultants and contractors.
- Retain Prero's cottage behind the dunes for short term staff accommodation.
- Parts of Bernacchi's Terraces may be used for temporary and single staff accommodation in accordance with the conservation plan for the buildings.

### **28.3 Other Management Facilities**

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- Include workshop and storage facilities, offices, and first-aid room in management facilities in the Darlington Zone.
- Provide sufficient vehicles, storage and equipment for management of the Park commensurate with management requirements and funding provisions.

### **28.4 Implementation, Works Programs and Procedures**

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- The prescriptions of this plan are subject to the provision of funding and other resources sufficient to meet them, and may be prioritised by the Director of National Parks and Wildlife at the Director's discretion according to resource availability.
- Prepare a five-year works program for the Park to coordinate development, protection and conservation work.

- Review the program annually and revise if necessary. Base any revision on analysis of past progress and incorporate newly identified requirements. Add a further year's program at each annual review.
- The works program will identify:
  - all development and other works planned,
  - preliminary scientific studies required,
  - those responsible for each stage of implementation,
  - the anticipated costs,
  - the staff requirements, and
  - ongoing maintenance and monitoring requirements.
- The works program will conform with the management plan and other plans such as site plans, conservation plans, fire management plan, and the interpretation plan.
- Monitor the efficacy of management practices in the Park, and where necessary, modify those practices.

#### **28.5 Search and Rescue, First-Aid**

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To improve communications for emergency services on the Tasmanian east coast, and in particular on Maria Island, a combined services radio mast and accompanying small building is located on Mt Maria.

- Maintain resources within the Park at a level necessary to meet the demands of emergencies.
- Provide radio communications and rescue equipment to assist in emergencies.
- Tasmania Police and State Emergency Services are responsible for all search and rescue within the Park. Cooperate with them in search and rescue operations.
- Continue to train staff in search and rescue, especially in relation to sea and cliff rescue.
- Hold a store of emergency rations at Darlington to cater for visitors stranded on the island by bad weather.
- Maintain an adequate store of first-aid supplies.
- Ensure boating equipment and safety standards conform with all statutory requirements.

#### **28.6 Law Enforcement**

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- Within the Park and the Reserve, authorised staff of the Parks and Wildlife Service will be responsible for enforcing the provisions of the *National Parks and Wildlife Act 1970*, the *Aboriginal Relics Act 1975*, *Whales Protection Act 1988*, the *National Parks and Reserves Regulations 1971*, the *Wildlife Regulations 1971*, and the *Aboriginal Relics Regulations 1978*.

- The Director of National Parks and Wildlife has delegated powers to enforce provisions of the Commonwealth of Australia *Historic Shipwrecks Act 1976*.
- Other law enforcement is the responsibility of Tasmania Police.
- The provisions of the *Living Marine Resources Management Act 1995* and its regulations will be policed by staff of the Department of Primary Industries and Fisheries and authorised officers of the Parks and Wildlife Service empowered by the Department to police these provisions.

## **29 Revision Of The Plan**

- The management plan may only be varied in accordance with the procedures set out in Sections 19 and 20 of the *National Parks and Wildlife Act 1970*.
- Review the plan five years after gazettal of its approval by the Governor, or sooner if research, monitoring, or other circumstances show this to be needed.

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## Appendix 1

### Implementation Priorities and Responsibilities

Note: The officer designated for coordinating responsibility is not necessarily the only officer who will be involved, but the person responsible for organising the action and ensuring it is carried out.

The figure in brackets in the Action column is the relevant section of the management plan in which the action is prescribed.

Action	Priority	Coordinating Responsibility
Upgrade water supply. (23.3)	High	District Manager
Rationalise and upgrade electrical and other energy systems. (23.3)	High	District Manager
Redesign and upgrade the Darlington sewage system, ensuring site disturbance and water consumption are minimised. (23.3)	High	District Manager
Prepare a five-year works program for the Park. (28.4)	High	District Manager
Maintain resources within the Park at a level necessary to meet the demands of emergencies (28.5)	High	District Manager
Provide radio communications and rescue equipment to assist in emergencies. (28.5)	High	District Manager
Install offshore marking of the marine boundary of the Park. (16)	Moderate	District Manager
Liaise with the Department of Transport to ensure maintenance or upgrading of the jetty and landing facilities. (18.2)	Moderate	District Manager
Train staff. (28.1, 28.5)	Moderate	District Manager
Encourage volunteers. (28.1)	Moderate	District Manager
Review the works program annually and revise if necessary. (28.4)	Moderate	District Manager
Monitor the efficacy of management practices in the Park, and where necessary, modify those practices. (28.4)	Moderate	District Manager

Consult with the Aboriginal community on the management of Aboriginal heritage. (21.1)	High	Aboriginal Heritage Officer
Monitor Aboriginal sites for, and protect from, damage. (21.1)	Moderate	Aboriginal Heritage Officer
Identify and record Aboriginal sites. (21.1)	Moderate	Aboriginal Heritage Officer
Seek funds to undertake heritage management. (21.2)	High	Cultural Heritage Manager
Undertake archaeological and historical research. (21.2)	Moderate	Cultural Heritage Manager
Maintain the landing area at Darlington at the prescribed standard. (18.3)	High	Senior Ranger
Keep open the vehicular track to Haunted Bay. (18.4)	High	Senior Ranger
Maintain and clearly mark all existing walking tracks, particularly that to Bishop and Clerk. (18.5, 23.5)	High	Senior Ranger
Construct an accessible, safe track to the Fossil Cliffs quarry. (18.5)	High	Senior Ranger
Police the marine conservation policies for the Marine Zone. (19.4)	High	Senior Ranger
Provide minimal impact toilets in designated visitor areas. (19.8)	High	Senior Ranger
Continue collection of garbage at Darlington. (19.8)	High	Senior Ranger
Manage the existing tip near Darlington to minimise environmental impact. (19.8)	High	Senior Ranger
Make safe dangerous structures. (21.2)	High	Senior Ranger
Undertake regular maintenance and remedial work on buildings. (21.2)	High	Senior Ranger
Install adequate fire protection to all structures. (20.1, 21.2)	High	Senior Ranger
Implement the Fire Management Plan. (20.1)	High	Senior Ranger

Periodically check historic buildings for fire hazards. (20.1)	High	Senior Ranger
Maintain all firebreaks. (19.2, 20.1)	High	Senior Ranger
Strictly enforce any restrictions which apply to lighting fires. (20.1)	High	Senior Ranger
Maintain fire suppression equipment to operational standard. (20.2)	High	Senior Ranger
Erect signs prohibiting the taking of skateboards, rollerblades and similar devices into the Park. (18.4)	High	Senior Ranger
Using indigenous species, revegetate around the new workshop. (19.7)	High	Senior Ranger
Hold a store of emergency rations at Darlington to cater for visitors stranded on the island by bad weather. (28.5)	High	Senior Ranger
Maintain an adequate store of first-aid supplies. (28.5)	High	Senior Ranger
Ensure boating equipment and safety standards conform with all statutory requirements. (28.5)	High	Senior Ranger
Bring tracks designated for management use to an adequate standard. (18.4)	Moderate	Senior Ranger
Ensure road alignment and drainage minimises discharge damage. (18.4)	Moderate	Senior Ranger
Investigate possibilities for an alternative, safe, non-intrusive access to the Painted Cliffs. (18.5)	Moderate	Senior Ranger
Discourage visitors from feeding animals. (19.2)	Moderate	Senior Ranger
Maintain, propagate and re-establish significant historic plantings in keeping with the heritage vegetation study. (19.7)	Moderate	Senior Ranger
Prevent the spread of introduced plant species retained for historic heritage purposes. (19.7)	Moderate	Senior Ranger
Eradicate, control or contain weeds. (19.7)	Moderate	Senior Ranger

Construct and maintain dune crossings and barriers at Darlington Bay. (19.7)	Moderate	Senior Ranger
Prepare a contingency plan for dealing with spills of fuels and hazardous or toxic chemicals. (19.8)	Moderate	Senior Ranger
Develop and disseminate regulations for refuelling and cleaning of vehicles and boats within the Park. (19.8)	Moderate	Senior Ranger
Provide gas barbecues and centralised fireplaces. (23.3)	Moderate	Senior Ranger
Encourage efficient energy use by management and visitors. (23.3)	Moderate	Senior Ranger
Continue and where possible improve upon the recycling program (19.8)	Moderate	Senior Ranger
Complete repairs to the farmhouse at French's Farm. (23.4)	Moderate	Senior Ranger
Maintain the shearing shed at French's Farm and leave open for visitors to explore. (23.4)	Moderate	Senior Ranger
Move the existing overnight shelter at Encampment Cove closer to the campground and out of the historic precinct of "Kintail". (23.4)	Moderate	Senior Ranger
Maintain and, as necessary, upgrade tracks to ensure protection of the environment and safety of users. (23.5)	Moderate	Senior Ranger
Monitor user impacts on campgrounds. (23.5)	Moderate	Senior Ranger
Carry out minor repairs and protection work to Robey's farmhouse, and maintain a water tank. (23.5)	Moderate	Senior Ranger
Investigate the possibility of a walking track following the coast from Four Mile Creek to Bloodstone Point. (18.5)	Low	Senior Ranger
Maintain regular patrols prior to and during the muttonbird season to discourage people from interfering with the rookeries. (19.2)	Low	Senior Ranger
Prepare and disseminate an inventory of significant geoheritage sites. (19.3)	Moderate	Earth Scientist

Monitor impacts on geoheritage features, systems, and processes. (19.3)	Moderate	Earth Scientist
Monitor for erosion and dune stability. (19.7)	Moderate	Earth Scientist
Evaluate Darlington and Point Lesueur for inclusion in World Heritage nomination. (21.2)	High	Historic Heritage Officer
Identify all heritage areas and sites and designate them heritage precincts or heritage sites. (21.2)	High	Historic Heritage Officer
Remove damaging uses, activities and developments from heritage precincts or heritage sites. (21.2)	Moderate	Historic Heritage Officer
Record and assess the significance of historic fabric and features. (21.2)	Moderate	Historic Heritage Officer
Prepare conservation policy statements or plans for all significant buildings, sites and precincts. (21.2)	Moderate	Historic Heritage Officer
Catalogue, appropriately store, or present historic artefacts to visitors. When warranted, adopt conservation measures. (21.2)	Moderate	Historic Heritage Officer
Publicise the features and values of the Park (23.2)	High	Interpretation Officer
Develop interpretation of the Aboriginal heritage of Maria Island in consultation with the Aboriginal community. (21.1, 22)	High	Interpretation Officer
Educate visitors about fire management policies and fire safety procedures as part of an interpretive program for the Park. (20.1)	High	Interpretation Officer
Provide prospective Park visitors with pre-visit information at Louisville Point and any other major departure points. (22)	High	Interpretation Officer
Place pre-visit brochures with tour operators. (22)	High	Interpretation Officer
Upgrade interpretation in Darlington. (22)	High	Interpretation Officer

Implement and regularly review the interpretation plan. (22)	High	Interpretation Officer
Inform visitors of hazards likely to be encountered, within the normal risks associated with the activity being undertaken. (22)	High	Interpretation Officer
Detail appropriate ways for visitors to prepare for visiting the Park, and to handle emergency situations during their visit. (22)	High	Interpretation Officer
Present and interpret conservation works in progress, provided safety of the public and fabric can be assured. (21.2)	Moderate	Interpretation Officer
Train and assist ferry operators to provide information to visitors. (22)	Moderate	Interpretation Officer
Provide interpretation about the marine environment. (22, 23.6)	Moderate	Interpretation Officer
Investigate options for extending the no-fishing area. (17.7, 19.4)	Moderate	Investigations Officer
Negotiate the inclusion of a full range of marine habitats within the Park. (16)	Moderate	Investigations Officer
Investigate the inclusion of Lachlan Island within the Park (16)	Low	Investigations Officer
Investigate extending the boundaries of the Ile des Phoques Nature Reserve to include marine areas around the island (16)	Low	Investigations Officer
Revegetate Bernacchi's Creek in the vicinity of the campground. (19.7)	High	Land Rehab Officer
Revegetate or otherwise stabilise and protect damaged dunes. (19.7)	Moderate	Land Rehab Officer
Rehabilitate and revegetate disused quarries not significant as historic heritage. (19.7)	Low	Land Rehab Officer
Rehabilitate, revegetate or otherwise stabilise disturbed or eroding areas (19.7)	Low	Land Rehab Officer
Undertake revegetation of other creek banks where required. (19.7)	Low	Land Rehab Officer

Record and assess the significance of shipwrecks around the coast of Maria Island. (21.2)	Low	Maritime Archaeologist
Prepare a heritage vegetation study (19.7)	High	Planning Officer
Prepare landscape management programs. (19.7)	High	Planning Officer
Develop and implement a tourism and recreation strategy for the Park. (23.1)	High	Planning Officer
Prepare a site plan for the Darlington Zone. (17.3, 23.3, 24)	High	Planning Officer
Make site plans prepared for the Darlington Zone and the Point Lesueur Zone available for public comment. (24)	High	Planning Officer
Investigate establishing a research/field study/education centre. (22)	High	Planning Officer
Develop and implement a permit system and conditions for use of the landing area. (18.3)	Moderate	Planning Officer
In the Darlington Site Plan, consider short to medium length circuit walks. (18.5)	Moderate	Planning Officer
Develop overflight guidelines. (18.3)	Moderate	Planning Officer
Liaise with Tourism Tasmania, the local Council and local tourism groups to implement the tourism and recreation strategy. (23.1)	Moderate	Planning Officer
Prepare a site plan for the Point Lesueur Zone. (17.4, 23.4, 24)	Moderate	Planning Officer
Develop and disseminate tourism and recreation assessment guidelines and criteria. (23.8)	Moderate	Planning Officer
Develop programs and mechanisms for tourism and recreation development to contribute to research, conservation and management of the Park. (23.8)	Moderate	Planning Officer
Develop and disseminate requirements and codes for sustainable environmental practices and behaviour. (23.1)	Moderate	Planning Officer

If a field study centre is feasible, prepare a brief. (22)	Moderate	Planning Officer
Review the plan five years after gazettal of its approval by the Governor. (29)	Low	Planning Officer
Licence commercial ferry and other watercraft services within the waters of the Park. (18.2)	High	Concessions Officer
Undertake periodic surveys of <i>Phytophthora</i> prone areas to monitor the disease-free status of Park. (19.6)	High	Protection Officer (Flora)
Inform Park visitors of <i>Phytophthora</i> threat to the Park. (19.6)	High	Protection Officer (Flora)
Establish, disseminate and strictly enforce guidelines for the entry into the Park of all vehicles and machinery. (19.6)	High	Protection Officer (Flora)
Review and revise the Fire Management Plan in accordance with this management plan. (19.1, 20.1)	High	Fire Management Officer
In the Fire Management Plan, designate tracks to be retained or constructed. (18.4, 20.1)	High	Fire Management Officer
Exclude wildfire from or restrict the spread of wildfire in high conservation priority areas. (20.1)	High	Fire Management Officer
Train Park staff in fire prevention and suppression procedures. (20.2)	High	Fire Management Officer
Prepare, disseminate, & enforce a code of practice for the use of bicycles (18.4)	High	Recreation Officer
Inform visitors of appropriate minimal impact use of the Park. (19.8)	High	Recreation Officer
Develop and disseminate guidelines and information on requirements for boating and sea access. (18.2, 22)	Moderate	Recreation Officer
Encourage campers to bring fuel stoves. (23.3)	Moderate	Recreation Officer

Prepare programs for ecological management burning. (19.1, 19.2)	Moderate	Senior Botanist
Undertake surveys for rare or endangered grassland species. (19.1)	Moderate	Senior Botanist
Identify, rehabilitate and revegetate pasture of low heritage significance in accordance with landscape management programs. (19.7)	Moderate	Senior Botanist
Research the life cycle of <i>Cyphanthera tasmanica</i> (19.1)	Low	Senior Botanist
Implement relevant recommendations of The Swift Parrot Recovery Plan. (19.2)	High	Wildlife Biologist
Implement relevant recommendations of The Forty-Spotted Pardalote Recovery Plan. (19.2)	High	Wildlife Biologist
Implement & regularly review the macropod management plan. (19.1, 19.5)	High	Wildlife Biologist
Monitor for disturbance of shore birds breeding success. (19.2)	Moderate	Wildlife Biologist
Provide support to researchers monitoring the marine environment. (19.4)	Moderate	Wildlife Biologist
Monitor distribution & impacts of <i>Undaria pinnatifida</i> in Marine Zone. (19.4)	Moderate	Wildlife Biologist
Monitor distribution & impacts of <i>Asterias amurensis</i> in Marine Zone. (19.4)	Moderate	Wildlife Biologist
Monitor introduced animal populations and undertake regular surveys of each species. (19.5)	Low	Wildlife Biologist

## Appendix 2

### **Outlying Occurrences Of Plants Of Geographic Significance On Maria Island**

*Anopterus glandulosus*  
*Cenarrhenes nitida*  
*Eucalyptus urnigera*  
*Gaultheria hispida*  
*Phyllocladus aspleniifolius*  
*Richea dracophylla*

## Appendix 3

### **Plant Communities on Maria Island Poorly Reserved Elsewhere (Kirkpatrick et al, 1995)**

Kirkpatrick et al (1995) state:

This island reserve should have high viability, although some of it has been cleared in the past. The grassland is largely cleared land now being reinvaded by native species. These include trees that may eliminate some of the poorly-reserved grassland communities that occur in a degraded form on the island. The park is rich in the following poorly-reserved plant communities:

- *Wilsonia backhousei* **herbfield;**
- *Poa labillardieri* - *Dichelachne crinitata* - *Acaena novae-zelandiae* - *Lomandra longifolia* - *Juncus* **spp. tussock grassland;**
- *Poa labillardieri*/*Themeda triandra* - *Solenogyne dominii* - *Ehrharta stipoides* **grassland;**
- *Poa labillardieri* - *Juncus* **spp.** - *Epilobium* **spp. tussock grassland;**
- *Poa rodwayi* - *Astroloma humifusum* - *Dianella revoluta* **grassland;**
- *Themeda triandra* - *Veronica gracilis* - *Solenogyne* **spp. tussock grassland;**
- *Eucalyptus pulchella*/*E. globulus* - *Acrotriche serrulata* **grassy woodland;**
- *Pomaderris apetala* - *Beyeria viscosa* - *Asterotrichion discolor* **closed forest;**
- *Eucalyptus globulus* - *Bedfordia salicina* - *Beyeria viscosa* **wet sclerophyll forest;**
- *Eucalyptus globulus* - *Poa labillardieri* - *Hypochoeris radicata* **wet sclerophyll forest;**
- *Eucalyptus urnigera* **subalpine wet sclerophyll forest.**

## Appendix 4

### Plant Species For Which Maria Island Plays A Significant Conservation Role

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#### Species only reserved in Maria Island National Park

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<i>Epacris acuminata</i>	en, v (Schedule 4)
<i>Scutellaria humilis</i>	r (Schedule 5)
<i>Spyridium ulicinum</i>	en
<i>Carex tereticaulis</i>	
<i>Cyperus sanguinolentus</i>	
<i>Stipa bigeniculata</i>	r (Schedule 5)

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#### Species in only one other reserve

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<i>Helichrysum leucopsideum</i>	
<i>Leptorhynchos linearis</i>	
<i>Olearia floribunda</i>	
<i>Ozothamnus thyrsoides</i>	
<i>Senecio glomeratus</i>	
<i>Rorippa dictyosperma</i>	
<i>Einadia nutans</i>	
<i>Wilsonia backhousei</i>	
<i>Dillwynia cinerascens</i>	
<i>Teucrium corymbosum</i>	r (Schedule 5)
<i>Eucalyptus urnigera</i>	en
<i>Danthonia carphoides</i>	
<i>Rumex dumosus</i>	
<i>Conospermum hookeri</i>	en
<i>Hakea sericea</i>	
<i>Spyridium obovatum</i> var <i>velutinum</i>	en
<i>Cyphanthera tasmanica</i>	en, r (Schedule 5)
<i>Carex iynx</i>	
<i>Caustis pentandra</i>	r (Schedule 5)
<i>Gahnia rodwayi</i>	en, r (Schedule 5)
<i>Juncus prismatocarpus</i>	r (Schedule 5)
<i>Arthropodium strictum</i>	r (Schedule 5)
<i>Genoplesium rufum</i>	r (Schedule 5)

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**Species in only two other reserves**

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<i>Brachyscome graminea</i>	
<i>Bracteantha bicolor</i>	
<i>Bracteantha papillosa</i>	
<i>Lagenifera huegelii</i>	
<i>Olearia archerii</i>	en
<i>Olearia glandulosa</i>	
<i>Olearia hookeri</i>	en, r (Schedule 5)
<i>Cardamine paucijuga</i>	
<i>Lepidium pseudotasmanicum</i>	r (Schedule 5)
<i>Atriplex billardieri</i>	
<i>Crassula peduncularis</i>	
<i>Pseudanthus ovalifolius</i>	
<i>Acacia riceana</i>	en
<i>Sebaea ovata</i>	
<i>Ajuga australis</i>	
<i>Linum marginale</i>	
<i>Asterotrichion discolor</i>	en
<i>Plantago hispida</i>	
<i>Rumex brownii</i>	
<i>Spyridium eriocephalum</i>	r (Schedule 5)
<i>Acaena ovina var velutina</i>	
<i>Galium gaudichaudii</i>	
<i>Euphrasia collina ssp collina</i>	
<i>Carex chlorantha var chlorantha</i>	
<i>Gahnia microstachya</i>	
<i>Schoenus turbinatus</i>	
<i>Juncus filicaulis</i>	
<i>Juncus holoschoenus ssp holoschoenus</i>	
<i>Luzula campestris</i>	
<i>Triglochin striatum</i>	
<i>Bulbine glauca</i>	
<i>Thysanotus patersonii</i>	
<i>Puccinellia stricta var stricta</i>	
<i>Stipa pubinodis</i>	
<i>Glyceria australis</i>	

**Key**

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en	=	endemic in Tasmania
r	=	rare - Schedule 5 of the <i>Threatened Species Protection Act 1995</i>
v	=	vulnerable - Schedule 4 of the <i>Threatened Species Protection Act 1995</i>

## Appendix 5

### Land Vertebrates (Excluding Birds) on Maria Island

i = introduced to Maria Island  
E = endemic to Tasmania

#### Terrestrial Mammals

<i>Tachyglossus aculeatus setosus</i>	echidna	
<i>Antechinus minimus minimus</i>	swamp Antechinus	i
<i>Isoodon obesulus affinis</i>	brown bandicoot	i
<i>Perameles gunnii</i>	eastern barred bandicoot	i
<i>Vombatus ursinus tasmaniensis</i>	common wombat	
<i>Pseudocheirus peregrinus viverrinus</i>	ringtail possum	
<i>Trichosurus vulpecula fuliginosus</i>	brushtail possum	i
<i>Cercartetus nanus nanus</i>	eastern pygmy possum	
<i>Bettongia gaimardi</i>	bettong	i,E
<i>Potoroo tridactylus apicalis</i>	potoroo	
<i>Macropus giganteus tasmaniensis</i>	forester kangaroo	i
<i>Macropus rufogriseus rufogriseus</i>	Bennetts wallaby	i
<i>Thylogale billardierii</i>	Tasmanian pademelon	E
<i>Hydromys chrysogaster</i>	water rat	
<i>Rattus lutreolus</i>	swamp rat	

#### Bats

<i>Vespadelus spp.</i>	vespadelus
<i>Nyctophilus spp.</i>	long-eared bat
<i>Chalinolobus spp.</i>	wattled bat

#### Terrestrial reptiles

<i>Bassiana duperryi</i>	three-lined skink
<i>Cyclodomorphus casuarinae</i>	she-oak skink
<i>Egernia whitei</i>	White's skink
<i>Niveoscincus metallicus</i>	metallic skink
<i>Niveoscincus ocellatus</i>	spotted skink
<i>Niveoscincus pretiosus</i>	Tasmanian tree skink
<i>Tiliqua nigrolutea</i>	blotched blue-tongue lizard
<i>Austrelaps superbus</i>	copperhead
<i>Drysdalia coronoides</i>	white-lipped whip snake
<i>Notechis ater</i>	tiger snake

#### Amphibians

<i>Crinia signifera</i>	common froglet
<i>Litoria ewingi</i>	brown tree frog
<i>Litoria raniformis</i>	green and golden frog
<i>Limnodynastes dumerili</i>	eastern banjo frog
<i>Pseudophryne semimarmorata</i>	southern toadlet

#### Exotic And Feral Species

<i>Dama dama dama</i>	fallow deer	i
<i>Felis catus</i>	cat	i
<i>Rattus rattus</i>	black rat	i
<i>Mus musculus</i>	house mouse	i

## Appendix 6

### Birds Of Maria Island

emu	<i>Dromaius novaehollandiae</i>		Ci
stubble quail	<i>Coturnix pectoralis</i>		UC
brown quail	<i>Coturnix ypsilophora</i>		C
musk duck	<i>Biziura lobata</i>		UC
black swan	<i>Cygnus atratus</i>		UC
Cape Barren goose	<i>Cereopsis novaehollandiae</i>		Ci
Pacific black duck	<i>Anas superciliosa</i>	C	
grey teal	<i>Anas gracilis</i>		UC
chestnut teal	<i>Anas castanea</i>		C
hoary-headed grebe	<i>Poliiocephalus poliocephalus</i>		UC
Fiordland penguin	<i>Eudyptes pachyrhynchus</i>		V
little penguin	<i>Eudyptula minor</i>		C
common diving petrel	<i>Pelecanoides urinatrix</i>		UC
southern giant-petrel	<i>Macronectes giganteus</i>		V
fairy prion	<i>Pachyptila turtur</i>		UC
short-tailed shearwater	<i>Puffinus tenuirostris</i>		MC
fluttering shearwater	<i>Puffinus gavia</i>		V
wandering albatross	<i>Diomedea exulans</i>		V
black-browed albatross	<i>Diomedea melanophrys</i>		UC
shy albatross	<i>Diomedea cauta</i>		C
yellow-nosed albatross	<i>Diomedea chlororhynchus</i>		V
Australasian gannet	<i>Morus serrator</i>		C
little pied cormorant	<i>Phalacrocorax melanoleucos</i>		C
black-faced cormorant	<i>Phalacrocorax fuscescens</i>		C
great cormorant	<i>Phalacrocorax carbo</i>		C
Australian pelican	<i>Pelecanus conspicillatus</i>		UC
white-faced heron	<i>Egretta novaehollandiae</i>		C
little egret	<i>Egretta garzetta</i>		V
great egret	<i>Ardea alba</i>		V
cattle egret	<i>Ardea ibis</i>		V
Australian bittern	<i>Botaurus poiciloptilus</i>		UC
white-bellied sea-eagle	<i>Haliaeetus leucogaster</i>		C
swamp harrier	<i>Circus approximans</i>		UC
brown goshawk	<i>Accipiter fasciatus</i>		V
wedge-tailed eagle	<i>Aquila audax</i>		UC
brown falcon	<i>Falco berigora</i>		C
peregrine falcon	<i>Falco peregrinus</i>		UC
purple swamphen	<i>Porphyrio porphyrio</i>		V
Tasmanian native hen	<i>Gallinula mortierii</i>		CiE
Latham's snipe	<i>Gallinago hardwickii</i>		V
ruddy turnstone	<i>Arenaria interpres</i>		MUC
pied oystercatcher	<i>Haematopus longirostris</i>		C
sooty oystercatcher	<i>Haematopus fuliginosus</i>		C
red-capped plover	<i>Charadrius ruficapillus</i>		UC
double-banded plover	<i>Charadrius bicinctus</i>		MUC
hooded plover	<i>Thinornis rubricollis</i>		C
masked lapwing	<i>Vanellus miles</i>		C
Arctic jaeger	<i>Stercorarius parasiticus</i>		V
Pacific gull	<i>Larus pacificus</i>		C
kelp gull	<i>Larus dominicanus</i>		C
silver gull	<i>Larus novaehollandiae</i>		C
Caspian tern	<i>Sterna caspia</i>		UC
crested tern	<i>Sterna bergii</i>		C
fairy tern	<i>Sterna nereis</i>		UC
brush bronzewing	<i>Phaps chalcoptera</i>		C
yellow-tailed black cockatoo	<i>Calyptorhynchus funereus</i>		UC
green rosella	<i>Platycercus caledonicus</i>		CE
swift parrot	<i>Lathamus discolor</i>		MC
blue-winged parrot	<i>Neophema chrysostoma</i>		V
pallid cuckoo	<i>Cuculus pallidus</i>		MUC
fan-tailed cuckoo	<i>Cacomantis flabelliformis</i>		MC
Horsfields bronze-cuckoo	<i>Chrysococcyx basalus</i>		V
shining bronze-cuckoo	<i>Chrysococcyx lucidus</i>		MUC
southern boobook	<i>Ninox novaeseelandiae</i>		C
masked owl	<i>Tyto novaehollandiae</i>		UC
tawny frogmouth	<i>Podargus strigoides</i>		UC
fork-tailed swift	<i>Apus pacificus</i>		V
white-throated needletail	<i>Hirundapus caudacutus</i>		V

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laughing kookaburra	<i>Dacelo novaeguineae</i>		Ci
sacred kingfisher	<i>Todiramphus sanctus</i>		V
spotted pardalote	<i>Pardalotus punctatus</i>	C	
forty-spotted pardalote	<i>Pardalotus quadragintus</i>		CE
striated pardalote	<i>Pardalotus striatus</i>	C	
Tasmanian scrubwren	<i>Sericornis humilis</i>		CE
Tasmanian thornbill	<i>Acanthiza ewingii</i>	CE	
yellow-rumped thornbill	<i>Acanthiza chrysorrhoa</i>		C
yellow wattlebird	<i>Anthochaera paradoxa</i>		CE
strong-billed honeyeater	<i>Melithreptus validirostris</i>		CE
black-headed honeyeater	<i>Melithreptus affinus</i>		CE
crescent honeyeater	<i>Phylidonyros pyrrhoptera</i>	UC	
New Holland honeyeater	<i>Phylidonyros novaehollandiae</i>		C
white-fronted chat	<i>Epthianura albifrons</i>		C
scarlet robin	<i>Petroica multicolor</i>		C
flame robin	<i>Petroica phoenicea</i>		C
pink robin	<i>Petroica rodinogaster</i>		UC
dusky robin	<i>Melanodryas vittata</i>		CE
spotted quail-thrush	<i>Cinlosoma punctatum</i>		V
olive whistler	<i>Pachycephala olivacea</i>		C
golden whistler	<i>Pachycephala pectoralis</i>		UC
leaden flycatcher	<i>Myiagra rubecula</i>	V	
satin flycatcher	<i>Myiagra cyanoleuca</i>		MC
grey fantail	<i>Rhipidura fuliginosa</i>		C
black-faced cuckoo shrike	<i>Cocacina novaehollandiae</i>		MC
dusky wood swallow	<i>Artamus cyanopterus</i>		MC
Australian magpie	<i>Gymnorhina tibicen</i>		C
black currawong	<i>Strepera fuliginosa</i>		CE
grey currawong	<i>Strepera versicolor</i>		C
forest raven	<i>Corvus tasmanicus</i>		C
skylark	<i>Alauda arvensis</i>		UCi
Richard's pipit	<i>Anthus novaeseelandiae</i>		C
house sparrow	<i>Passer domesticus</i>	Ci	
beautiful firetail	<i>Stagonopleura bella</i>		C
European goldfinch	<i>Carduelis carduelis</i>		Ci
welcome swallow	<i>Hirundo neoxena</i>	MC	
tree martin	<i>Hirundo nigricans</i>		MC
little grassbird	<i>Megalurus gramineus</i>		C
silveryeye	<i>Zosterops lateralis</i>	C	
Bassian thrush	<i>Zoothera lunulata</i>	UC	
common blackbird	<i>Turdus merula</i>	Ci	
starling	<i>Sturnus vulgaris</i>		Ci

**Key:**

E	=	Endemic to Tasmania
M	=	Migratory, not likely to be present during winter
C	=	Common
UC	=	Uncommon
i	=	Introduced to Maria Island
V	=	Vagrant Species recorded on rare occasions

Other bird species are occasionally recorded on Maria Island

Note: Bird species names follow the taxonomy of Christidis & Boles (1994)

## Appendix 7

### Suggested Research Priorities

#### Environmental Research

- Priorities for environmental research could include:
  - monitoring of the interaction between fire and vegetation in heathlands and woodlands which are of importance for flora conservation to determine the role of active fire management;
  - monitoring of the regeneration of the rare plant *Cyphanthera tasmanica* at all known locations to formulate a management strategy for the species;
  - periodic sampling for *Phytophthora cinnamomi*;
  - methods of control of introduced plant species, especially canary broom, that are invading native vegetation;
  - inventory of the marine environment of the Park and monitoring of its conservation status;
  - determining the effectiveness of marine reserves in protecting marine biota;
  - methods of control of introduced marine species;
  - monitoring of the forty-spotted pardalote population every two years;
  - research into inter-specific competition and rate of colonisation for forty-spotted pardalote;
  - research on the distribution of swift parrot habitat and the foraging range of the parrot;
  - monitoring of fluctuations in swift parrot population levels and the effectiveness of habitat management initiatives;
  - survey and banding of Cape Barren geese;
  - monitoring and research on the populations of forester kangaroos, including an investigation of disease problems in the population and impact of kangaroos on the grassland and bush vegetation;
  - methods of control of introduced fauna species;
  - preparation of a small mammal inventory;
  - monitoring of visitor impacts of friable Triassic sandstone along the east coast (eg the Painted Cliffs);
  - research on soil erosion pressures associated with drought and heavy grazing;
  - investigation of impacts of visitors on the Fossil Cliffs, including illegal fossil collection;
  - assessment of rehabilitation options for drained areas;
  - investigation of coastal karst; and
  - assessment of coastal geomorphology, particularly soft sandy areas.

### **Heritage Research**

- **Priorities for Aboriginal and historic heritage research could include:**
  - conserving and interpreting cultural resources;
  - documentary research of the Long Point Probation Station;
  - complete documentary research of Convict period history on the island; and
  - a systematic survey of Aboriginal archaeological resources.

### **Visitor Research**

- **Priorities for research and monitoring of visitors could include:**
  - the impact of visitors on environmental, heritage and recreational values and facilities;
  - the levels and patterns of visitor use of the Park; and
  - visitor expectations, preferences and requirements.