

Southport Lagoon Conservation Area

George III Monument Historic Site
and Ida Bay State Reserve



Management Plan 2006



**Southport Lagoon Conservation Area,
George III Monument Historic Site and
Ida Bay State Reserve
Management Plan 2006**



**PARKS *and* WILDLIFE
SERVICE TASMANIA**

**DEPARTMENT *of*
TOURISM, ARTS
and the ENVIRONMENT**

Southport Lagoon Conservation Area, George III Monument Historic Site and Ida Bay State Reserve Management Plan 2006

This management plan has been prepared in accordance with the requirements of Part 3 of the *National Parks and Reserves Management Act 2002*.

Unless otherwise specified, this plan adopts the interpretation of terms given in the *National Parks and Reserves Management Act 2002*. The term 'PWS' refers to the Parks and Wildlife Service. Unless an alternate meaning is made clear in the text the term 'conservation area' refers to the Southport Lagoon Conservation Area, the term 'historic site' refers to the George III Monument Historic Site and the term 'State reserve' refers to the Ida Bay State Reserve. Unless an alternate meaning is made clear in the text the term 'reserves' refers to all three of these reserves collectively.

In accordance with Section 30(1) of the *National Parks and Reserves Management Act 2002*, the managing authority for the reserves, in this case the Director of National Parks and Wildlife, shall carry out his or her duties in relation to the reserves 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 Secretary of the Department of Tourism, Arts, and the Environment.

The plan is intended to apply for 10 years, at which time it will be reviewed — however, it may be reviewed and replaced at any time if circumstances warrant.

The appendices do not form part of the statutory plan, but are provided as additional information to assist in management.

Much of this plan was based on an unpublished report prepared by Dr. Philip J. Bell in July 1994 for the Parks and Wildlife Service, entitled 'Southport Lagoon Conservation Area - A Report on the Management of Recreational Activities'.

A draft of this plan was released for public comment in accordance with statutory requirements from 30 July to 30 September 2005. Fifty representations were received. This plan is a modified version of that draft, having been varied to take account of public representations, the views of the National Parks and Wildlife Advisory Council and the advice to the Minister provided by the Resource Planning and Development Commission report of May 2006.

ACKNOWLEDGEMENTS

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

Cover photo: Looking south over Southport Lagoon,
image courtesy Andrew D. Short.

APPROVAL

This management plan was approved by His Excellency, the Governor-in-Council, 4 September 2006 and took effect on 13 September 2006, being seven days after publication of that approval in the *Government Gazette*.

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Summary

Southport Lagoon Conservation Area

Lying approximately 80 kilometres south of Hobart the 4,280 hectare Southport Lagoon Conservation Area possesses a wide diversity of significant natural, cultural and recreational values. The area also presents significant land management issues, mostly associated with current use patterns. This plan has been prepared in response to growing concerns from land managers, the local community and recreational users for the long-term maintenance of values.

Values

Geoheritage values include good representations of two bay mouth spits and rare fossilised fern fragments of considerable scientific value.

The scenic beauty of landscapes within the reserves provides a significant recreational resource. For instance, from the spit on the eastern side of Southport Lagoon panoramic views may be had of the lagoon and opposite shore against the backdrop of the heavily forested and often snow capped Southern Ranges.

Flora values include:

- the status of the area for biological reference, being the collection site of a large number of flora and fauna type specimens;
- heaths rich in species that have been eliminated elsewhere; and
- several species of individual conservation significance.

Fauna values include:

- rich water bird habitat in the lagoons and fringing vegetation;
- fish nursery sites in the seagrass beds, wetlands and lagoon systems;
- many bird species of individual conservation significance.

Many Aboriginal people once lived in the area, as revealed in the observations of the earliest European expeditioners. While largely unrecorded, Aboriginal sites must still be present in the landscape. These are protected under the *Aboriginal Relics Act 1975*.

The history of the area is rich:

- the French National Assembly Expedition of 1792 & 1793 led by D'Entrecasteaux used this area as a base for the scientific exploration of Recherche, the Huon, Channel, Derwent region and Bruny Island;
- since then human occupation has been principally associated with resource extraction including mining, forestry and whaling.

While little physical evidence remains to mark these early European activities, those that do exist have heritage values at the local and state level, with national and international values still being considered. The historical and associational significance of the 1792 and 1793 French visits adds to the intangible values of the area.

Threats

The major threats to Southport Lagoon Conservation Area are inappropriate recreational vehicle use and wildfire.

Increasing recreational pressure, particularly from users of four-wheel drive and other recreational vehicles over the years has resulted in much physical damage, both deliberate and unintentional. Degradation issues are actually accelerating (see Appendix 1) despite a series of management interventions.

High wildfire frequencies have damaged the natural values of the reserve and adjacent private land.

Management Proposals

This plan is aimed at ensuring the long-term viability of the values for which the area was reserved.

In the conservation area the major initiative, aimed at placing access on a sustainable footing, is the closure of the Leprena Track to recreation vehicle access. This means the closure of all tracks in the conservation area with the exception of the Lagoon Track. At the same time the plan proposes opening a new four-wheel drive vehicle route, roughly following the Lagoon Track, to provide recreational access to the north west quadrant of the lagoon. This will involve construction of a new track, a new camping area and a dinghy launching area. This latter measure will ensure recreational access to favourite fishing and camping opportunities at the spit are maintained, albeit by boat.

This plan has been formulated on the basis of a long period of consultation and discussion, including the release of a previous draft of this plan in 1997.

George III Monument Historic Site

The 14.4 hectare historic site is the site of a memorial to the convict ship *George III* which was wrecked on nearby rocks on its way to Port Arthur in 1835 with the loss of 133 lives. The memorial was erected on this site in 1839 and burials remain near this place.

Southport Bluff, where the George III Historic Site and monument are located, is the only known locality for the endangered Tasmanian endemic heath species, *Epacris stuartii* (Keith 1996). This species is extremely vulnerable to *Phytophthora cinnamomi*, which is absent from the bluff. It is a component of coastal heathland, one of the most threatened plant communities in Australia.

The historic site is currently managed for the protection of the monument and the endangered *Epacris*. Under both this plan and the *Plant Quarantine Act 1997* this reserve remains closed to public access.

Ida Bay State Reserve

The 425 hectare Ida Bay State Reserve is managed for the protection of its historic, recreational and natural values. A narrow gauge railway, built around 1920, and extensively upgraded in the 1940s is located within the State reserve. It runs along the southern shore of the Lune River estuary and terminates at Deephole Bay. The railway was originally established to transport limestone from Ida Bay quarries to vessels berthed first within the Lune River estuary, and later at Deephole Bay. The railway has, discontinuously since 1981, been operated under a lease agreement as a tourist attraction, and it is due to reopen in late 2006. This plan fosters the further development of this commercial tourism operation, while protecting the values of the State reserve.

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Section 1 Overview

1.1 Location and Boundaries

The Southport Lagoon Conservation Area lies on the south-east coast of Tasmania between Southport and Recherche Bay (see Map 1). It is approximately 80km south of Hobart (104km by road).

The George III Monument Historic Site is located on Southport Bluff on the eastern side of Southport Lagoon Conservation Area. Except for its eastern, seaside flank, the George III Monument Historic Site is surrounded by the conservation area.

The Ida Bay State Reserve comprises a narrow strip of coastal land on the southern side of the Lune River estuary between the township of Ida Bay and Deephole Bay. The State reserve shares a boundary with the conservation area on its southern side.

The reserves, when considered as a block, are bounded to the north by private land and the Lune River Estuary, to the west by State forest, to the south by private freehold land, Recherche Bay and the Tasman Sea and to the east by the Tasman Sea (see Map 2).

1.2 Access

The reserves are generally accessed from Hobart, via the A6 highway through Huonville, Geeveston and Dover (see Map 1). The road is sealed as far as the Lune River township.

The Lune River Road (C636) continues south to Ida Bay, where the principal rail terminus of the Ida Bay Railway is found. Traditionally most visitors access the State reserve by the railway.

Continuing south on the Lune River Road the Leprena Track branches off on the east side about 2km south of Ida Bay. This is the principal vehicle access to the conservation area.

Currently there is no public access to the historic site. Traditionally access was had through the State reserve.

1.3 Climate

The reserves experience a mild, wet maritime climate, with an absence of extremes. Average maximum and minimum daily temperatures vary from around 10°C and 20°C respectively in mid summer to around 4°C and 12°C respectively in mid winter. Summer temperatures almost never exceed 30°C while winter frosts are reasonably common.

Average rainfall is about 985 mm per year. This rain is well scattered through the year but predominates in winter, with an average of almost 100 mm in July declining to about 55 mm in February. The humidity is generally quite high

*Southport Lagoon Conservation Area, George III Monument Historic Site and Ida Bay
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map 1 location

map 2 surrounding tenure

The reserves are generally protected from the strongest winds, which predominate from the north-west and west although through the summer months an afternoon easterly sea breeze is common. Winds in excess of 30 km/h are rare, and for about 80 percent of the time are between 0 and 20 km/h and for about 50 percent of the time are between 0 and 10 km/h.

1.4 History of Reservation

Southport Lagoon Conservation Area

Much of the area around Southport Lagoon was proclaimed State forest in 1928, and this tenure continued throughout until 1987. The Southport Lagoon Wildlife Sanctuary became effective on 7 July 1976 under the *National Parks and Wildlife Act 1970* (Statutory Rules 1976, No. 150). As both a wildlife sanctuary and a State forest, the area came under a dual management regime. It comprised an area of approximately 3,600 hectares (ha) surrounding and including Southport and Blackswan lagoons, and The Images island group as shown on Plan P4764, held in the Central Plan Office, Department of Primary Industries and Water.

In 1981, 16 hectares of private land, adjacent to Blackswan Lagoon, was purchased to add to the reserve. Also in December 1981 the gazettal of the Ida Bay State Reserve effectively removed a block from the northern part of the conservation area.

In 1987, the (then) Forestry Commission revoked 1250 hectares of State forest within the reserve, leaving the (then) Department of Lands, Parks and Wildlife as the sole manager of the reserve.

As a result of an amendment to the *National Parks and Wildlife Act 1970* under the *Regional Forest Agreement (Land Classification) Act 1998*, the reserve became a conservation area on 30 April 1999.

On 20 December 2000, 700 hectares of former State forest was added to the conservation area. The current area of the reserve is 4,280 hectares and extends to the low water mark.

George III Monument Historic Site

This small reserve of approximately 14.4 hectares, as recorded on CPR 4635, was proclaimed in April 1939 as a shipwreck memorial site. The reserve extends to low water mark.

Ida Bay State Reserve

Ida Bay State Reserve was proclaimed in December 1981 and covers an area of 425 hectares. The reserve extends to the low water mark. The land on which the railway house stands was revoked from the reserve in 1997. A small block (0.3 hectares) surrounded by the reserve was purchased in August 2002 to add to the reserve. This extension should be completed soon.

1.5 History and Purpose of Planning for the Reserves

Preparation of a draft management plan for the Southport Lagoon Wildlife Sanctuary commenced in July 1994. In February 1997 a draft plan was released for public comment. This plan was never finalised. Since 1997 much has changed, most particularly, damage to the area as a result of recreational vehicle use has continued to accelerate. This current document represents a substantial rewrite of the 1997 document, reflecting the many changes, as well as covering the two adjacent

reserves, being the historic site and the State reserve. These latter reserves have never had statutory management plans written for them.

This plan is intended to provide a broad strategic framework and direction for operational management, identify key actions and then to outline practices and processes to deal with day-to-day circumstances. In this respect the Reserve Management Code of Practice 2003 (PWS 2003) is a critical management tool. The document establishes appropriate management practices and standards for activities within reserved lands.

Prescriptions

- 1.5.1 Use the Tasmanian Reserve Management Code of Practice 2003 to establish appropriate day-to-day management practices and standards.

1.6 Legislative and Policy Context

Conservation areas, State reserves and historic sites are reserves proclaimed under the *Nature Conservation Act 2002*, managed under the *National Parks and Reserves Management Act 2002* and are also subject to the National Parks and Reserved Land Regulations 1999. Section 27(6) of the *National Parks and Reserves Management Act 2002* provides that a management plan for a conservation area may prohibit or restrict the exercise of a statutory power. Section 35(1) of the *National Parks and Reserves Management Act 2002* provides that a statutory power may not be exercised in a State reserve or historic site except where the exercise of the power is authorised by a management plan.

All items of Aboriginal heritage in the reserves are protected under the *Aboriginal Relics Act 1975*. Historic heritage listed places within the area are protected under the *Historic Cultural Heritage Act 1995*. The *Threatened Species Protection Act 1995* also applies to the reserves, as do aspects of the Australian Government *Environment Protection and Biodiversity Conservation Act 1999*.

This plan does not cover the management of marine animals within the reserves, most particularly those found in the lagoons of the conservation area. Marine animals are governed by the *Living Marine Resources Act 1995*.

The *National Parks and Reserves Management Act 2002* requires that, in managing development on reserved land, regard must be had to the objectives of the Tasmanian Resource Management and Planning System. The legislative framework for dealing with development continues to be refined and updated.

The Tasmanian State Coastal Policy 1996 applies to the reserves. The three main principles of this policy are:

- natural and cultural values of the coast shall be protected;
- the coast shall be used and developed in a sustainable manner; and
- integrated management and protection of the coastal zone is a shared responsibility.

The reserves are part of the Southern Natural Resource Management Region, as established under the *Natural Resource Management Act 2002*. The main task of the Southern Natural Resource Management (NRM) Regional Committee is to develop and implement a regional strategy, to be accredited by the State and the Commonwealth. The regional committee includes representation from the Parks and Wildlife Service, and reserved lands are to be taken into account when identifying the region's natural values and its NRM priorities. The regional committee's role in setting priorities and recommending funding merits it being informed of all significant management proposals for these reserves. The *Natural Resource Management Act 2002* does not, however, affect the statutory processes for establishing and managing the reserves.

1.7 Statement of Significance

The conservation area is historically and botanically significant as part of a larger type locality from which many of the type specimens of the Australian flora were collected by French and English scientists in the late 18th and early 19th century. The conservation area has important Aboriginal and European cultural heritage values. The conservation area is extremely significant for conserving endangered, vulnerable and rare plant and animal species - it contains the only known population of the Critically Endangered Tasmanian endemic swamp eyebright *Euphrasia gibbsiae* ssp. *psilantherea*. The conservation area is an important habitat for many bird and fish species. The conservation area contains large areas of relatively undisturbed coastal heathland, one of the most threatened plant communities in Australia. It has representative tall *Eucalyptus obliqua* stands extending to the ocean edge. The conservation area has high scenic values as well as important geoheritage values, including bay mouth spits and rare fossilised fern deposits. The conservation area is also a popular recreation area for camping, fishing, boating, recreational vehicle use, bushwalking, scientific/nature study and surfing.

The Southport Lagoon Conservation Area and extension (2000 boundary) is listed on the register of the National Estate on account of its natural, historic and geoheritage values. It was first listed in 1978.

The historic values of the George III Monument Historic Site led to listing of the reserve on the register of the National Estate in 1980. The historic site is listed on the Tasmanian Heritage Register. The site has high botanical significance in providing habitat for the only known wild population of the Critically Endangered Tasmanian endemic heath species, *Epacris stuartii*.

The State reserve was listed on the register of the National Estate in 1982 on account of providing habitat for the plant species *Caesia alpina* and *Caladenia vulgaris*, which have a restricted distribution in Tasmania. The Ida Bay Railway, which lies within and outside the boundaries of the State reserve, is on the Tasmanian Heritage Register.

1.8 A Vision for the Reserves

During the next ten years and into the future, a visitor to the conservation area will find high biodiversity as a result of thriving populations of indigenous plants, animals and their communities. Ecological processes will be continuing with minimum disturbance by inappropriate fire frequency and recreational use. The scars of the many vehicle tracks across both the adjacent private land and the conservation area will be diminishing as a result of active management of recreational use and active rehabilitation work by concerned land managers and volunteers. Visitors to the conservation area will understand, appreciate and respect the values of the conservation area based on information and educational materials provided by the land managers. Visitors will enjoy the quiet remoteness of the conservation area and its scenic landscapes. Access will be carefully controlled to prevent further damage from vehicles and enable past damage to be repaired. Recreational use will centre around minimal impact camping, fishing, nature study, surfing and bushwalking.

The sandstone monument at the historic site is in good condition, but is rarely seen by humans at close range. Tasmanians understand that the reserve is a critical refuge for *Epacris stuartii*, and are highly respectful of the need to care for the plant's survival by staying away. As a result of this and other management interventions the reserve continues to support a healthy *Epacris* population, which while it is still officially endangered, is now considered secure.

The historic railway in the State reserve continues to retain much of its heritage significance. The other values of the reserve continue to flourish, particularly now fire frequencies are more in tune with ecological needs. The railway assets continue to be managed under a commercial lease arrangement, and a business plan is being implemented that places the site on a solid, professional footing.

1.9 Values Purposes and Objectives of Reservation

Southport Lagoon Conservation Area

A conservation area is a category of reserve under the Tasmanian reserve system. This reserve category has values, purposes and objectives defined in legislation as follows.

Values

Under the *Nature Conservation Act 2002* a conservation area is an area of land predominantly in a natural state.

Purposes

The purposes of reservation of conservation areas, as set out in the *Nature Conservation Act 2002* are for the protection and maintenance of the natural and cultural values of the area of land and the sustainable use of the natural resources of that area of land. This purpose is confirmed.

Objectives

The management objectives of a conservation area are set out in the *National Parks and Reserves Act 2002*. The management objectives of conservation areas that apply to the Southport Lagoon Conservation Area are listed below.

Because of the complex interrelationship of factors to be considered in managing the conservation area, the reasons these objectives apply and the manner in which the objectives will be achieved are dealt with in a number of sections of the management plan. The sections of the management plan that primarily deal with each management objective in the Act are shown in brackets.

The management objectives are:

- to conserve natural biological diversity (see Sections 2.4, 2.5, 2.6);
- to conserve geological diversity (see Section 2.1);
- to preserve the quality of water and protect catchments (see Section 2.3);
- to conserve sites or areas of cultural significance (see Sections 2.7, 2.8);
- to provide for exploration activities and utilisation of mineral resources (see Section 4.2);
- to provide for the taking, on an ecologically sustainable basis, of designated game species for commercial or private purposes, or both (see Section 5.5);
- to encourage education based on the purposes of reservation and the natural or cultural values of the conservation area, or both (see Sections 5.8, 6.2);
- to encourage research, particularly that which furthers the purposes of reservation (see Section 6.3);
- to protect the conservation area against, and rehabilitate the conservation area following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the conservation area's natural and cultural values and on assets within and adjacent to the conservation area (see Sections 3.1, 3.2, 3.3);
- to encourage appropriate tourism, recreational use and enjoyment (including private uses) consistent with the conservation of the conservation area's natural and cultural values (see Section 5);
- to encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management objectives (see Section 2.7).

Not all of the management objectives for conservation areas set out in the Act will apply in every conservation area. In practice, the application of management objectives for specific reserves must not conflict with the purposes for which those reserves have been declared. Therefore, the degree to which an objective is implemented in practice in an individual reserve, and the areas in that reserve to

which it applies, will depend upon agreement between the objective and the purposes of reservation for that class of reserve. The purposes of reservation are set out under Schedule 1 of the *Nature Conservation Act 2002*. Because Southport Lagoon is of particular conservation significance any activities that are likely to threaten values are to be avoided. The PWS recognises that ORRV use falls within the management objectives for conservation areas and is a legitimate activity within the Southport Lagoon Conservation Area. However, for the PWS to meet its legal responsibilities regarding the purposes of reservation for the reserve, it will be necessary to confine such vehicle use to areas where that activity will not affect the values for which the reserve was declared. Therefore, the following management objectives for conservation areas set out in the Act will not apply in Southport Lagoon Conservation Area:

- to provide for the controlled use of natural resources, including as an adjunct to utilisation of marine resources (see Section 2.4);
- to provide for other commercial or industrial uses of coastal areas;

George III Monument Historic Site

An historic site is a category of reserve under the Tasmanian reserve system. This reserve category has values, purposes and objectives defined in legislation as follows.

Values

Under the *Nature Conservation Act 2002* an historic site is an area of land of significance for historic cultural heritage.

Purposes

The purposes of reservation of historic sites, as set out in the *Nature Conservation Act 2002* are for the conservation of the historic features of the area of land and the presentation of those features for public appreciation and education. This purpose is confirmed.

Objectives

The management objectives of an historic site are set out in the *National Parks and Reserves Act 2002*. All of the objectives for historic sites set out in the Act apply to the George III Monument Historic Site.

Because of the complex interrelationship of factors to be considered in managing the historic site, the reasons these objectives apply and the manner in which the objectives will be achieved are dealt with in a number of sections of the management plan. The sections of the management plan that primarily deal with each management objective in the Act are shown in brackets.

The management objectives are:

- to conserve sites or areas of historic cultural significance (see Section 2.8);
- to conserve natural biological diversity (see Sections 2.4, 2.5, 2.6);
- to conserve geological diversity (see Section 2.1);
- to preserve the quality of water and protect catchments (see Section 2.3);
- to encourage education based on the purposes of reservation and the natural or cultural values of the historic site, or both (see Sections 5.8, 6.2);
- to encourage research, particularly that which furthers the purposes of reservation (see Section 6.3);
- to protect the historic site against, and rehabilitate the historic site following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the historic site's natural and cultural values and on assets within and adjacent to the historic site (see Sections 3.1, 3.2, 3.3);
- to encourage tourism, recreational use and enjoyment consistent with the conservation of the historic site's natural and cultural values (see Section 5);
- to encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management objectives (see Section 2.7).

Ida Bay State Reserve

A State reserve is a category of reserve under the Tasmanian reserve system. This reserve category has values, purposes and objectives defined in legislation as follows.

Values

Under the *Nature Conservation Act 2002* a State reserve is an area of land containing any of the following:

- significant natural landscapes;
- natural features; and
- sites, objects or places of significance to Aboriginal people.

Purposes

The purposes of reservation of State reserves, as set out in the *Nature Conservation Act 2002* are for the protection and maintenance of any one or more of the following:

- (a) the natural and cultural values of the area of land;
- (b) sites, objects or places of significance to Aboriginal people contained in that area of land;
- (c) use of the area of land by Aboriginal people –

while providing for ecologically sustainable recreation consistent with conserving any of the things referred to in paragraphs (a), (b) and (c), as applicable.

This purpose is confirmed.

Objectives

The management objectives of a State reserve are set out in the *National Parks and Reserves Act 2002*. All of the objectives for State reserves set out in the Act apply to the Ida Bay State Reserve.

Because of the complex interrelationship of factors to be considered in managing the State reserve, the reasons these objectives apply and the manner in which the objectives will be achieved are dealt with in a number of sections of the management plan. The sections of the management plan that primarily deal with each management objective in the Act are shown in brackets.

The management objectives are:

- to conserve natural biological diversity (see Sections 2.4, 2.5, 2.6);
- to conserve geological diversity (see Section 2.1);
- to preserve the quality of water and protect catchments (see Section 2.3);
- to conserve sites or areas of cultural significance (see Sections 2.7, 2.8);
- to encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management objectives (see Section 2.7);
- to encourage education based on the purposes of reservation and the natural or cultural values of the State reserve, or both (see Sections 5.8, 6.2);
- to encourage research, particularly that which furthers the purposes of reservation (see Section 6.3);
- to protect the State reserve against, and rehabilitate the State reserve following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the State reserve's natural and cultural values and on assets within and adjacent to the State reserve (see Sections 3.1, 3.2, 3.3);
- to encourage tourism, recreational use and enjoyment consistent with the conservation of the State reserve's natural and cultural values (see Section 5).

Section 2 Conservation Assets

2.1 **Geoheritage**

Topography

For the most part, the three reserves comprise gently rolling hills interspersed with low lying and poorly drained plains (see Map 3).

Southport Lagoon is a large shallow expanse of water covering approximately 1,060 hectares. A spit encloses it with one narrow channel opening to the ocean on its eastern side. An extensive intertidal zone is exposed at low tide. Blackswan Lagoon, in the southern region of the conservation area, is a shallow sheet of water covering a further 50 hectares. A spit also encloses it, which has been closed to the ocean for the last several years.

The coastline of the three reserves extends for approximately 27 kilometres (excluding the perimeter of the two lagoons) and comprises a series of beaches separated by low rocky headlands. The Images island group, also included in the conservation area, lies off the southern extremity of that reserve and comprises a series of ocean-washed dolerite rocks with a central island approximately 100 metres in length.

Geology and Soils

The geology of the State reserve, the historic site and the northern portion of the conservation areas, including the spit and the area directly south of the spit is Jurassic dolerite. The remainder of the conservation area comprises sediments of sandstone, siltstone and mudstone of the Upper Parmeener Supergroup (Department of Mines 1983).

Sandy deposits some distance from the coast and at altitudes of 20 metres suggest that Southport Lagoon and Blackswan Lagoon hinterlands were larger inlets 120,000 years ago during the last interglacial period when sea levels were higher. The complex of low ridges leading out to Eliza Point would have separated the two palaeo inlets. It is highly likely that the area contains coastal deposits which could provide important information on coastal development over the last 120,000 years or so and how higher sea levels can impact on coastal processes.

Southport Lagoon is a shallow bay which has developed over the last 6,000 years or so with rising sea levels. It is separated from the Tasman Sea by a bay mouth spit. Another bay mouth spit occurs at Blackswan Lagoon. These spits occur along the east and north coast of the State, but they are relatively rare in the south-east. The closest bay mouth spit to Southport is Prion Beach on the south coast, which has formed under considerably different environmental conditions.

The Leprena Track lies on the edge of the Lune River Jurassic basalts and gemfield association. This area is a north-south orientated strip 1-2 kilometres wide and extends north towards the Esperance River and south past the D'Entrecasteaux River. Rock sequences, including volcanics and associated silicification (agates, petrified plants) were deposited at the surface during the period of sub-surface intrusion of the Jurassic dolerites (Sharples 1994). A fossicking area has been declared over a section of this association (see Section 5.7), on adjacent State forest on the western side of the Leprena Track (MRT 2004) in the vicinity of the junction of the Leprena Track and the South Cape Road.

map 3 topo and drainage

On dolerite, well-drained slopes and flats carry deep, often stony duplex soils with a clay loam to loam surface. Drainage flats also carry a deep soil composed of a black peat over a greyish brown to light grey clay (Davies 1988).

On sediments, forested slopes and flats carry a deep duplex soil with a fine sandy loam surface over a grey to light grey heavy clay. The open plains have a deep soil with a black peat surface over a light-medium clay. Open plains also contain deep duplex soils that consist of a clay loam surface over a medium clay (Davies 1988).

Conservation Significance

All peat soils have conservation significance owing to their slow rates of formation.

Sites of conservation significance are listed on the Tasmanian Geoconservation Database.

The database lists only one site for the reserves, being the Lune River Area Jurassic Basalts and Gemfield Association. This feature is found along the western extremity of both the conservation area and the State reserve. It is considered of outstanding significance at a State level.

The bay mouth spits of Southport Lagoon and Blackswan Lagoon are probably the most fragile terrestrial environments within the conservation area, and their integrity is essential to the ecology of the lagoon systems. Neither spits are listed on the Geoconservation Database. It is intended that the spit will be nominated for listing in the near future.

Management Issues

Gemfield Association. Scientifically important specimens are at risk of being lost if fossicking is not properly regulated. Outstanding features such as fossil trees are very vulnerable to theft and mechanical disturbance. It is reported that some unlawful fossicking is occurring within the conservation area.

The Spit. Unnatural erosion, which could lead to a breach of the spit, must be avoided in order to prevent profound changes in the hydrological conditions of the area.

Extensive but localised areas of soil and sand erosion are associated with vehicle tracks across the spit.

Considerable recent subsidence is evident on the lagoon/spit foreshore. A number of factors may be involved in the apparently recent acceleration of this process. These include global sea level rises undermining the bank, high fire frequencies (causing the death of trees and scrub vegetation, resulting in loss of root networks), the removal of dead fallen trees on the lagoon foreshore for firewood and improved vehicle access (resulting in the loss of the stabilising function of the trees and their root systems) and wash from vehicles travelling on the lagoon foreshore.

Peat Soils. Peat soils are highly vulnerable to disturbance, consisting of 90% water and held together only by fine root systems. Areas of altered drainage and consequential pooling are evident along all vehicle tracks, especially where vehicles have caused extensive braiding of tracks. Significant damage to soil substrates is associated with these areas. These locations regenerate very slowly, if at all. Once the underlying peat layer has been compressed by vehicle traffic the compacted peat loses its ability to promote new vegetation growth.

Aims

The aims of geoconservation in the three reserves are to:

- preserve and maintain sites of geoheritage significance and geodiversity; and
- maintain the natural rates and magnitudes of change in earth processes.

Prescriptions

- 2.1.1 Place signs on the Leprena Track to include interpretive material about paleobotany values along with information about where fossicking is allowed and not allowed, and the unlawfulness of collection of fossil fragments and gemstones from inside the conservation area.
- 2.1.2 Collection of fossils in any of the reserves and outside of the 'Lune River Fossicking Area' will only be considered for refereed scientific research purposes and will require appropriate written authorities.
- 2.1.3 Monitor illegal collection of fossil fragments and gemstones.
- 2.1.4 Assess the geomorphological stability of the spit and associated dunes, and depending upon the result of this survey, implement specific monitoring and/or management measures.
- 2.1.5 The bay mouth spits of Southport Lagoon and Blackswan Lagoon are recommended for listing on the Geoconservation Database.

2.2 Wilderness and Landscape Values

The scenic beauty of landscapes within the reserves provides a significant recreational resource.

Within the conservation area at the spit on the eastern side of Southport Lagoon panoramic views may be had of the lagoon and opposite shore against the backdrop of the heavily forested and often snow capped Southern Ranges. The lack of significant developments provides a feeling of remoteness and isolation. The natural setting of the area provides a compelling link to the landscape in existence at the time of the 1792 and 1793 French visits and their interaction with the local Aboriginal community.

A major feature of the tourist experience on the railway within the State reserve has been the scenic beauty of the area, particularly the views across the Lune River Estuary and Deephole Bay.

At the historic site the monument, set in a landscape that is otherwise natural in appearance, provides a compelling link to the landscapes in existence at the time of the shipwreck.

Management Issues

The March 1998 wildfires have, at least temporarily, severely compromised the scenic values of parts of the conservation area and the State reserve.

Quagmires and track braiding caused by recreational vehicle use degrade the scenic values of the conservation area.

Forest harvesting operations on hill faces forming a backdrop to panoramic views across the lagoon have the potential to impact on the scenic values of the area. Under the *Forest Practices Code 2000* landscape issues are addressed during the development of Forest Practices Plans (see Section 4.5) - however issues arising at specific visitor sites can sometimes be overlooked.

Aims

The aims of natural and cultural landscape conservation in the three reserves are to reverse the processes of recent human disturbance and restore where possible, naturalness and landscape values.

Prescriptions

Many prescriptions of relevance are found in other sections (see sections 2.8, 4.5 and 5.2)

- 2.2.1 Carefully consider the visual impact of all developments within the reserves (also see Section 4.3).
- 2.2.2 Liaise with Forestry Tasmania (see prescription 4.5.2), the Forest Practices Authority and individual landholders regarding the development of Forest Practices Plans in the vicinity, with respect to the maintenance of the visual landscape values as seen from the reserves.

2.3 Water Quality

The protection of the quality of Tasmania's terrestrial water resources is important to securing the State's future. To ensure adequate levels of protection, the *State Policy on Water Quality Management 1997* now requires that protected environmental values (PEVs) and water quality objectives are set for all surface water-bodies around the State. PEVs have been set for the three reserves.

Aims

The aims of water quality management are to:

- maintain or enhance aquatic ecosystems; and
- maintain or enhance recreational water quality.

Prescriptions

- 2.3.1 Manage surface waters in the three reserves to protect water quality. At minimum, water quality will conform with the PEVs established for the reserves.
- 2.3.2 Liaise with other relevant agencies and lease/license holders to ensure integrated management of the catchments of the three reserves. Liaison with Forestry Tasmania will occur through the mechanism established under prescription 4.5.2.

2.4 Wetlands

A recent study (Edgar et al 1998) considers Southport Lagoon to be one of 11 estuaries in Tasmania of critical conservation significance because it is the only relatively pristine estuary remaining in the Huon/Derwent region. The report recommends including Southport Lagoon in an integrated system of estuarine protected areas.

While the lagoon system has not been extensively studied, it should be noted that this is one of the few 'natural' estuarine systems existing in South East Australia, remaining relatively free of human impact within its entire catchment (Edgar et al

1998). The lagoon is due to be reassessed for inclusion in Environment Australia's Directory of the Important Wetlands of Australia, as well as for listing on the Convention on Wetlands of International Importance, commonly known as the Ramsar Convention.

Conservation Significance

Currently Southport Lagoon is provided no separate recognition for its wetlands.

Management Issues

It has been accepted that Southport Lagoon should be afforded greater recognition. At present it cannot be placed on Environment Australia's Directory of Important Wetlands in Australia as a process for nominating sites is still being negotiated with the Australian Government.

As indicated (see Section 1.6) the Parks and Wildlife Service does not manage the marine animals within the reserves, most particularly those found in the lagoons of the conservation area. Marine animals are governed by the *Living Marine Resources Act 1995*. The management prescriptions in this plan may result in some increase in recreational fishing of Southport Lagoon, and some concerns for the continued health of the fishery have been expressed.

A recent assessment of the impacts on the lagoon as a result of the proposed change in management of the lagoon waters and the surrounding conservation area (Mount and Ewing 2006) found that the proposed boat launching site on the western side of the lagoon may lead to a five to ten fold increase in boat traffic on the lagoon; and an increase in recreational fishing. An increase in power boat traffic is likely to increase the risk of scouring and scaring of seagrass, possible damage to the main channel and vulnerable shorelines, and possible damage to the habitat of the endangered live bearing seastar, *Patiriella vivipara*. An increase in fishing may result in reduction in conservation values of the lagoon through removal of key marine species, potential introduction of marine pests, habitat damage from larger vessels and an increase in catch of ecologically significant species such as gummy sharks.

An expert panel consisting of representatives from Department of Primary Industries and Water (DPIW), Tasmanian Aquaculture and Fisheries Institute (TAFI), Marine and Safety Tasmania (MAST) and Parks and Wildlife Service (PWS) has considered the protection of natural values and the issue of safe boating in the lagoon and has made ten recommendations:

- a maximum speed limit within the lagoon of 5 knots;
- channel markers be installed;
- a boat size limit of 14 foot and 15 horsepower;
- trailer access not to be provided;
- personal watercraft to be banned;
- further consideration of fishing restrictions;
- consideration of restricted areas within the lagoon;
- provision of signs that include maps and air photos to indicate the location of restricted areas, speed limits and channel markers;
- posting the GPS coordinates of relevant restricted areas, speed limits and channel markers on an appropriate web site; and
- a monitoring regime to detect environmental change consisting of air photo and soft shell sediment core analysis.

Prescriptions

- 2.4.1 Support a nomination for listing Southport Lagoon on Environment Australia's Directory of Important Wetlands in Australia.
- 2.4.2 Support an assessment of Southport Lagoon for possible nomination to the Convention on Wetlands of International Importance, commonly known as the Ramsar Convention.

- 2.4.3 As a matter of urgency, liaise with relevant branches within DPIW, TAFI, Birds Tasmania, Tasmanian Fishing Industry Council, Tasmanian Association for Recreational Fishing and other relevant stakeholders. Undertake discussions regarding further consideration of fishing restrictions and restricted areas with respect to appropriate management of the marine resources of the lagoons within the conservation area.
- 2.4.4 Implement a monitoring regime to detect environmental change consisting of air photo and soft shell sediment core analysis.

2.5 Flora

The three reserves collectively exhibit an unusual complex of forest, heath and sedgeland communities that, aside from the influence of recreation vehicle driving (see Section 5.2) and frequent wildfires (see Section 3.1), remain in a relatively undisturbed state. As a type locality (see Section 2.8) for botanical specimens, the vegetation of the conservation area has been reasonably well documented and studied. It is the site of the first botanical collecting in Tasmania (then Van Diemens Land) by Bruni D'Entrecasteaux's 1792 expedition, and all the plants described then are still to be found in the Southport area.

Well-drained slopes and flats on Triassic sediments support forests of stringy bark *Eucalyptus obliqua* with low shrub understoreys that include melaleuca *Melaleuca squarrosa*, prickly beauty *Pultenaea juniperina*, parrots food *Goodenia ovata* and native daphne *P. daphnoides*. Open plains support closed heath, or sedgeland dominated by buttongrass *Gymnoschoenus sphaerocephalus*, or low open woodland dominated by black peppermint *E. amygdalina* and swamp gum *E. ovata*, with a closed heath understorey.

On dolerite, well drained slopes and flats also carry stringy bark forests with a wet forest understorey including dogwood *Pomaderris apetala*, blackwood *Acacia melanoxylon*, lancewood *Phebalium squameum*, woolly tea-tree *Leptospermum lanigerum*) and melaleuca. Open plains and drainage flats support a closed heath to low open woodland dominated by melaleuca, black peppermint and occasionally Smithton peppermint *E. nitida* and swamp gum. Other poorly drained areas support closed heath and buttongrass sedgeland.

The variety of vegetation types is reflected in the diversity of species recorded within the conservation area. To date, over 190 vascular plant species have been recorded in the conservation area; 16 of these are endemic to Tasmania.

Southport Lagoon supports extensive areas of seagrass communities, particularly the northern end of the lagoon.

The vegetation of the State reserve is largely composed of buttongrass, moorland and dry open forest.

The vegetation of the historic site includes large areas of bracken, coastal scrub and heath, and a small area of dry forest.

There are many threatened species in the three reserves.

Conservation Significance

There are many individual species of legislated conservation significance in the reserves and these are presented in Table 1.

Table 1: Flora species recorded in the Reserves and listed on the Schedule under State legislation (*Threatened Species Protection Act 1995*) or under Commonwealth legislation (*Environment Protection and Biodiversity Conservation Act 1999*)

Key:	e	endangered in Tasmania
	v	vulnerable in Tasmania
	r	rare in Tasmania
	CR	Critically Endangered nationally
	EN	Endangered nationally
	VU	Vulnerable nationally

Common name	Name	Status
Conservation Area		
drooping sedge	<i>Carex longebrachiata</i>	r
shy eyebright	<i>Euphrasia fragosa</i>	e, CR
swamp eyebright	<i>Euphrasia gibbsiae ssp psilantherea</i>	e, CR
bearded midge orchid	<i>Corunastylis morrisii</i>	e
sky-blue sun orchid	<i>Thelymitra jonesii</i>	e, CR
native rosemary	<i>Westringia brevifolia var. raleighii</i>	r
State Reserve		
pretty leek orchid	<i>Prasophyllum pulchellum</i>	e, CR
Historic Site		
leafless milkwort	<i>Comesperma defoliatum</i>	r
Stuart's heath	<i>Epacris stuartii</i>	e, CR

Swamp eyebright *Euphrasia gibbsiae ssp. psilantherea*, was thought to be extinct until a very small population (only 25 plants) was discovered in the conservation area in 1985. It was found near the Blackswan Lagoon track to the north-east of Blackswan Lagoon on a small, 0.25 hectare, patch of flat swampy sedgeland (Collier 1990). Currently the population is thought to consist of about 20 juvenile, and only 30 adult plants having the capacity to flower and reproduce. It remains the only known population of this species.

A very small population (less than 20 plants in 1996) of the endemic shy eyebright *Euphrasia fragosa* (formerly known as *E. sp. 'Southport'*) is thought to still occur near the Ida Bay Track just inside the conservation area in open grassy woodland. No sightings have been recorded since 1999. Only two other larger, but still small, populations of this species are known and these occur on the Labillardiere Peninsula on Bruny Island and on private property north of Southport.

The historic site population of the endemic heath *Epacris stuartii* is the only known population of this species. It is confined to a narrow zone at the top of dolerite cliffs and ledges. There is currently a 10 year recovery plan in place for the species (Keith 1996), which expired at the end of 2005. In 1998, in response to the recovery plan and continued decline in numbers a decision was reached to declare the general area where the plants occur a Protected Area under Section 35 of the *Plant Quarantine Act 1997*. Visiting this area is now restricted to permit holders only. To give effect to this management regime an exclusion fence has been built along the approximate line of the terrestrial boundary of the historic site. Further, the walking track that used to terminate at the monument (see Section 2.8) has now been re-routed and signs and interpretation erected to provide information for visitors. A fire-break has also been cut adjacent the exclusion fence.

Three threatened orchids have been collected from the reserves. A population of the bearded midge orchid *Corunastylis morrisii* is one of the two largest populations recorded for the species, containing approximately 25 plants. This species is close to extinction in Tasmania with only one of the species being seen since 2000. The critically endangered Tasmanian endemic pretty leek orchid *Prasophyllum pulchellum* requires fire to stimulate emergence and flowering, it is only known from 5 other small populations. The critically endangered Tasmanian endemic sky-blue sun orchid *Thelymitra jonesii* is known only from 6 other small populations.

Tasmanian bluegum *Eucalyptus globulus*, the floral emblem of Tasmania, was first collected in Tasmania by scientist La Billardiere of the D'Entrecasteaux expedition.

Management Issues

The only known site for *Euphrasia gibbsiae* ssp. *psilantherea*, is next to a vehicle track in the southern part of the conservation area. There is evidence of increased vehicular traffic through this part of the reserve and the resulting track braiding is threatening the extinction of the species. In autumn of 2004 fencing was placed adjacent the vehicle track in an attempt to discourage people driving through the site. The eyebright is also at risk from *Phytophthora* invasion (see Section 3.2).

Euphrasia fragosa is threatened by the high frequency of fires in this area. Spring survey effort is required to relocate the species in the reserve.

Through to the last census in 2003, the *E stuartii* population in the historic site still continues to evidence population decline. Active management will probably be required at some point in the near future (probably fire). The major management threat to the survival of this species is invasion by *Phytophthora* (see Section 3.2). A secondary threat is posed by the imposition of an inappropriate fire frequency, particularly too frequent burning (see Section 3.1). The continuation of access restrictions, at least for the next few years, is seen as essential to the continued survival of the species.

Direct damage to the vegetation in the conservation area is caused by cutting of trees for the construction of shelters and other structures, unauthorised cording and, bridgeworks, for winching, and for other unauthorised works to aid bogged vehicles. Localised areas of vegetation loss and damage is associated with camping sites (see Section 5.4). This is particularly evident at the spit.

The recent estuarine and marine habitat mapping report by Mount *et al.* (2005) describes the general distribution of seagrasses in Southport Lagoon. The Lagoon shows some special features including a lack of seagrass in the large shallow main basin and its concentration at the mouth of the lagoon. A more detailed investigation of the seagrass and management implications for its monitoring and maintenance is proposed in the near future.

Ecological burning may be required to ensure persistence of the three threatened orchids in the reserves. Surveys of suitable habitat will be required following fire.

Aims

The aims of flora conservation in the three reserves are to:

- conserve and maintain natural diversity and natural ecosystems;
- conserve and protect threatened flora species;
- conserve and protect plant communities of high conservation value; and
- minimise harmful impacts on vegetation.

Prescriptions

- 2.5.1 Implement the management requirements established in listing statements for all *Threatened Species Protection Act 1995* scheduled species.
- 2.5.2 Comply with any approved recovery plans for the above listed species.
- 2.5.3 In accordance with Section 37 of the *National Parks and Reserves Management Act 2002* the George III Monument Historic Site is hereby declared a restricted area, that is, land where visitors may not enter or remain without:
 - the written authority of the Director; or

- being accompanied by a Ranger or person authorised by the Director.
- 2.5.4 Continue to enforce prohibition of entry into the historic site through the maintenance of appropriate fencing, the appropriate routing of tracks and the provision of appropriate signs and interpretation.
- 2.5.5 Give priority to the preparation of an appropriately scaled vegetation map to identify communities and plants of high conservation value and to be used as a tool for fire management.
- 2.5.6 Undertake, following wildfires, flora surveys particularly for *Euphrasia* species, orchid and other fire dependent species.
- 2.5.7 Undertake comprehensive and repeatable flora surveys of the reserves, particularly following wildfires and particularly for *Euphrasia* species, orchid and other fire-dependent species.
- 2.5.8 Flora surveys and research studies by volunteers will be encouraged and assisted where possible by the Parks and Wildlife Service.
- 2.5.9 Achieve conservation of endangered *Euphrasia* species through the implementation of measures outlined in Section 5.2 and through, as far as possible, the appropriate management of fire frequency in the conservation area (see Section 3.1.8).
- 2.5.10 Undertake further assessment of the seagrass beds of Southport Lagoon and develop appropriate management strategies, based upon the research results, to ensure their long-term viability.

2.6 Fauna

The reserves are important sites for birds, with a range of bird communities being associated with different habitats. No systematic surveys of the avifauna of the conservation area have been undertaken, but several ad hoc lists have been prepared over the last decade which reveal the presence of a wide diversity of species.

Shore and water birds concentrate around the seaward beaches and outer edges of the lagoon. Typically, species includes silver gull *Larus novaehollandiae* and Pacific gull *L. pacificus*; Caspian tern *Sterna caspia* and crested tern *S. bergii*; pied oystercatcher *Haematopus ostralegus* and sooty oystercatcher *H. fuliginosus*; hooded plover *Charadrius rubricollis* and black cormorant *Phalacrocorax carbo*, little pied cormorant *P. melanoleucos*, little black cormorant *P. sulcirostris* and black-faced cormorant *P. fuscescens*. The little penguin *Eudyptula minor* is also found here. The terns breed only on the small island near the lagoon outlet.

On the landward side of the lagoon with its associated estuarine coves and wetlands, ducks are found, including chestnut teal *Anas castanea*, black duck *A. superciliosa* and musk duck *Biziura lobata* as well as black swan *Cygnus atratus*, hoary-headed grebe *Poliiocephalus poliocephalus*, Lewins rail *Rallus pectoralis brachipes* and white-faced heron *Ardea novaehollandiae*. The azure kingfisher *Alcedo azurea* has also been reported in the area (Cameron & Cameron 2005).

The ground parrot *Pezoporus wallicus wallicus* is found in the heathland areas around Southport Lagoon. Other heath birds include the southern emu-wren *Stipiturus malachurus littlerli* and the striated field wren *Sericornis fuliginosus*.

Inhabiting the forest portions of the conservation area is the swift parrot *Lathamus discolor*, the grey goshawk *Accipiter novaehollandiae novaehollandiae*, and the white bellied sea-eagle *Haliaeetus leucogaster*. A pair of breeding wedge-tailed eagles *Aquila audax fleayi* has been reported to use the reserves for foraging (Cameron & Cameron 2005).

Seasonal use of the lagoon is evident for many species. Black ducks, black swans and crested terns tend to be numerous in the summer months while pacific gulls and hoary-headed grebes use the lagoon more frequently during the winter months. Other shore and water birds, including oystercatchers, herons and cormorants are usually present throughout the year.

The area was a traditional shooting site for Japanese (Lathams) snipe *Gallinago hardwickii*, and in the 1970s special permits were issued for shooting within the conservation area. The snipe season has been closed for many years in Tasmania.

No systematic surveys of mammals in the conservation area have been undertaken. Leopard seals *Hydrurga leptonyx*, elephant seals *Mirounga leonina macquariensis*, and Australian fur seals *Arctocephalus pusillus doriferus* are all known to occasionally haul out on Big Lagoon Beach and Little Lagoon Beach.

The Orange-bellied parrot *Neophema chrysogaster* is historically known from the Actaeon Islands Game Reserve. The nearest potential habitat is within the conservation area and/or State reserve and the reserves have been identified as potential reintroduction sites (Draft National Orange-Bellied Parrot Recovery Plan 2005).

Little is known of the invertebrate fauna of the conservation area.

Conservation Significance

Several fauna species are of legislated conservation significance and these are presented in Table 2.

The Japanese snipe is now a protected species under the Japan/Australia Migratory Bird Agreement (JAMBA).

Southport Lagoon is an important south-easterly fringe site for the ground parrot, likely serving as a dispersal and translocation area for Bruny Island (Bryant 1991).

Blackswan Lagoon is considered to be an important site for black swan, hoary-headed grebe and ducks.

Table 2: Fauna species recorded in the Reserves and listed on the Schedule under State legislation (*Threatened Species Protection Act 1995*) or under Commonwealth legislation (*Environment Protection and Biodiversity Conservation Act 1999*)

Key:	e	endangered in Tasmania
	v	vulnerable in Tasmania
	r	rare in Tasmania
	CR	Critically Endangered nationally
	E	Endangered nationally
	V	Vulnerable nationally

Common name	Name	Status
Conservation Area and State Reserve		
white-bellied sea-eagle	<i>Haliaeetus leucogaster</i>	v
grey goshawk	<i>Accipiter novaehollandiae novaehollandiae</i>	e
swift parrot	<i>Lathamus discolor</i>	e, E
live-bearing seastar	<i>Patriella vivipara</i>	e

The saltmarshes are largely undisturbed though faunal species diversity is considered to be low in comparison to other sites in Tasmania (Wong, Richardson & Swain 1993).

Invertebrate species include an undescribed endemic burrowing crayfish *Parastacoidea* species with a limited distributional range. The species is present in the wetter heathland, making quite deep burrows in peat and clay in waterlogged soils or near watercourses. The species is tolerant of fire, but susceptible to changes in drainage regime. Within the lagoon waters, aggregations of the giant spider crab are an impressive sight resting on the lagoon substrate.

Management Issues

The hooded plover is recorded in the conservation area and nests on the ocean beaches between September and February. The bird is very vulnerable to nest disturbance during the breeding season, particularly from recreational vehicles traversing beaches, as evidenced in the annual surveys around Tasmania's coast (Holdsworth & Park 1993). Recent surveys indicate that the species population in Tasmania is declining (Woehler & Park 1997).

Roading and tracks through vegetation cause significant habitat fragmentation which potentially has a major impact on aspects such as gene flow, species diversity and movement of feral pests (Saunders, Arnold, Burbridge & Hopkins 1987). While at the Southport Lagoon Conservation Area the volume and speed of traffic is usually low, the increasing width of many tracks may be a contributor to habitat fragmentation. Feral cats are a problem in the area, particularly for ground parrots, but also likely for shore birds during the breeding season (S. Bryant, pers com). The profusion of tracks enables greater access of feral pests through the area.

As indicated in Section 3.1, wildfire has a major impact on the fauna of the conservation area.

Aims

The aims for fauna conservation are to:

- ensure maximum protection of threatened fauna species;
- maintain viable populations of indigenous fauna; and
- maintain the diversity of natural habitats of indigenous fauna.

Prescriptions

- 2.6.1 Implement the management requirements established in listing statements for all *Threatened Species Protection Act 1995* scheduled species.
- 2.6.2 Comply with any approved recovery plans for the above listed species.
- 2.6.3 Undertake a comprehensive and repeatable survey of the fauna of the conservation area and State reserve.
- 2.6.4 Encourage and assist fauna surveys and research studies where possible.
- 2.6.5 Survey the area for the presence of Chytrid frog fungus.
- 2.6.6 Remind visitors through such measures as signs and notesheets (see Section 5.8) that under the National Parks and Reserved Land Regulations 1999 horses and dogs are not permitted in the reserves.

2.7 Aboriginal Heritage

The area around Recherche Bay was the territory of the South Eastern Tribe which occupied an area covering over 3,000 square kilometres and over 550 km of Tasmania's coastline (Brown 1986). The South Eastern Tribe was considered to be the most maritime and sedentary of the Tasmanian tribes.

Accounts of the D'Entrecasteaux expedition in 1792 and 1793 and the Baudin Expedition in 1802 from the Channel and Huon area provide some of the most complete descriptions of the lifestyle of the Tasmanian Aborigines prior to the devastation caused by European occupation of the island (Kostoglou 1993b). The band that controlled the Recherche area were the Lyluequonny. Other bands from within the tribe and from as far as Port Davey were also reported to come to Recherche Bay. The presence of a large seal colony allowed Aboriginal people to spend a significant portion of the summer in this area. D'Entrecasteaux located one camp near Blackswan Lagoon that was inhabited by 42 Aboriginal people.

While systematic studies of the Aboriginal archaeological resources of the reserves have been limited in nature, the area is known to have a rich assemblage of sites particularly around the lagoon edges and on the spit. The reserves are also rich in present-day cultural resources. Members of the Aboriginal community are regular visitors to the area, and in recent years have registered great concern over the impacts recreational vehicle use are having on their sites (S. Everett, pers comm).

Conservation Significance

All Aboriginal sites are of significance in being the last remaining physical links providing a record of past existence, resource use and culture.

Management Issues

The major threat to Aboriginal values is disturbance, whether intentional or accidental.

Although some survey work has been undertaken in recent years, suggesting the reserves are richly endowed with heritage sites, there is a fundamental lack of knowledge of Aboriginal heritage values and of the impact of current management and user activities upon these values. The uncontrolled use of recreation vehicles in the conservation area, which leads to widespread mechanical disturbance of the ground (see Section 5.2), must without doubt damage these values.

All Aboriginal sites are protected under the *Aboriginal Relics Act 1975*.

Aims

The aims of management of Aboriginal heritage, in cooperation with the Aboriginal community, are to:

- identify and record places of Aboriginal heritage;
- protect and conserve Aboriginal heritage;
- interpret Aboriginal heritage; and
- provide for special management conditions as necessary.

Prescriptions

- 2.7.1 Seek funding for a survey and significance assessment by the Aboriginal community of Aboriginal resources in the three reserves.
- 2.7.2 Assess and protect Aboriginal heritage values in accordance with both the aims and prescriptions of this management plan and any agreed national or State charter or guidelines for Aboriginal places.

- 2.7.3 Aboriginal places will not be publicised unless the place has been assessed, in cooperation with the Aboriginal community, for educational or interpretative use. Where applicable, any agreed Aboriginal interpretation strategy will be implemented.
- 2.7.4 Consult the Aboriginal community on any undertaking or development which may impinge upon Aboriginal places.
- 2.7.5 All proposed landscape modification, development, or maintenance will be subject to the prescriptions of this management plan.
- 2.7.6 Locate, as far as possible, development away from areas of Aboriginal heritage.
- 2.7.7 Aboriginal heritage will not be deliberately disturbed for management, development or research purposes unless the Director determines there is no practicable alternative and a written authority has been issued under the *Aboriginal Relics Act 1975*.
- 2.7.8 Report all Aboriginal places discovered to the Director, in accordance with the *Aboriginal Relics Act 1975*.
- 2.7.9 Monitor Aboriginal places for, and protect from, damage.

2.8 European Heritage

Conservation Area

On the 21 April 1792 two 500 ton ships, the 'Recherche' captained by Bruni D'Entrecasteaux and the 'Esperance' captained by Huon deKermandec, made landfall off the south-west coast of Van Diemens Land. The next day they took anchorage in the northern arm of Recherche Bay, behind what is now known as North East Peninsula. D'Entrecasteaux as leader of this expedition, sponsored by the French National Assembly, had twin goals of finding the missing navigator La Perouse and advancing scientific study of the Pacific. He promptly established this location as a base for repairs, maintenance and scientific exploration spanning 22 days.

Their anchorage was next to what is now a large private block at the southern end of the conservation area. The immediate area became the focus for scientific endeavour including exploration of Recherche, the Huon, Channel, Derwent region and Bruny Island, establishment of a geophysical observatory and an experimental garden. The flora around Blackswan and Southport Lagoons were very thoroughly collected by expedition scientists La Billardiere and Riche and many type specimens came from these localities. Recent investigations have revealed sites on the private land that may date from this expedition.

On 21 January 1793 the two ships of the D'Entrecasteaux expedition re-entered Recherche Bay to take on fresh water and timber to repair their vessels. Of great importance during the second visit were the friendly meetings between the French and local Aboriginal people. According to the French records, on 8 February 1793 the botanists and their assistants were working near Southport Lagoon when they noticed the approach of a large group of Aboriginal persons. The Frenchmen laid down their weapons and approached the group of about 40 men, women and children. A number of items were exchanged and apparently a good humoured rapport was established between the two groups.

On 13 February 1793, the ships sailed out of Recherche Bay and made their way north charting new areas as they went.

In 1838, further collections were made by Ronald Gunn when an expedition arranged by Lady Franklin to Port Davey and Macquarie Harbour was weatherbound at Recherche Bay for a period. As a result of this and the previous expedition the area between Southport and Recherche Bay is the type locality for a large number of Tasmania's native plants. It is considered to rank with sites such as Botany Bay as a type locality from which a large proportion of the Australian flora was collected, described and named. Apart from botanical type specimens, the Southport-Recherche area was also the type locality for a large number of zoological, geological and anthropological specimens.

During the 1800s and early 1900s, the European history of the area around Southport Lagoon was associated with the timber, whaling coal mining industries and grazing (see Map 4). The regions' European historic and archaeological sites associated with the timber, whaling and coal mining industries have been surveyed by Kostoglou (1993a & 1993b).

Nash (2003) reports that between the late 1830s and early 1840s four shore-based whaling stations operated in the bays immediately to the north of Southport Bluff. The remains of three of these stations have been identified. A major wildfire in 1997 (see Section 3.1) revealed one site, lying across the boundary with the adjacent historic site. Typically these sites consist of cobbled areas for flensing, cobbled or brick-floored areas for try-works and hut-sites, often with associated brick chimney remains. The remains of another bay whaling station are located on Sullivan Point at the southern most tip of the conservation area. Little is known of its history though it was probably operated at Quiet Cove during the 1850s (Kostoglou 1993b).

The Leprena Track was initially cut and corded in the late 1890s and served as the road between settlements in Recherche Bay and Lune River. The track was metalled in the 1930s and has not been maintained since the abandonment of Leprena about 1950. The track now ends at the D'Entrecasteaux River following the collapse of the Pigsty Bridge in the early 1980's.

Coal seams have long been known to exist in the south of the State. It is suggested that D'Entrecasteaux was the first European to report their existence. As early as 1840 the colonial government prospected seams at Southport as did the Southport Coal Company. Several small coal-mines operated in the vicinity of Southport Lagoon (Bacon 1991). A coal-mine, probably the first in the Recherche Bay area, was operated on the D'Entrecasteaux River Estuary (Kostoglou 1993b).

Forestry operations in the area involved several sawmills and associated tramways (see Map 4). Messrs Jaeger and Tyler established a mill around 1914 in the north of the present conservation area. It closed in 1928. Kemsley's Crescent Mill was established on the eastern side of D'Entrecasteaux River estuary in 1898-99. A tramline linking Kemsley's Crescent Mill to a 5,000 ha timber lease west of the present conservation area was constructed in 1904. A further tramline ran from a locality on the Leprena Track just north of the D'Entrecasteaux River estuary, to a jetty at Deephole Bay. Construction of a mill was begun by Jones and Co. on the eastern shore of the D'Entrecasteaux River Estuary. A small wharf was constructed to service the mill, but the mill was never completed. Another spot mill was operated just north of Blackswan Lagoon (Kostoglou 1993a).

A cattle run was established by Mr Michael Brodribb (also known as Broadribb) just south of Frog Flat in the 1950s but was unsuccessful. Fires destroyed fences and wild stock were gradually killed. Remains of Brodribb's house and the timber fence line can be seen adjacent to the Leprena Track (Kostoglou 1993a). According to Strong (2005) the area has had a much longer history of cattle grazing that resulted in areas including the spit being cleared and sown to grass.

State Reserve

The earliest history of the State reserve was heavily associated with timber getting, milling and coal mining and has a shared history with the larger conservation area to

the south. In 1915 the jetty at Deephole was reported to have been used to load 8,000 ton steamers with hardwood for direct export to foreign ports (Twelvetrees 1915).

A coal-mine was worked during the 1890s until the early 1900s near Ida Bay. An existing timber tramway was extended and used by the Ida Bay Coal Mine.

Around 1915 the Tasmanian Portland Cement, Lime, Brick, and Coal Company Limited, Ida Bay took up holdings in the area to produce portland cement (Twelvetrees 1915). The raw materials, lime and clay were both found on site, as was coal to fire the kilns, while a tramway had already been built from the Lune Settlement to the vicinity of the limestone source at Lune Sugarloaf. There was also already a large, well-constructed jetty capable of loading deep displacement vessels at Deephole Bay. Twelvetrees considered the future of the company looked bright as the demand for cement across the colonies increased. However failure of the project occurred with the failure of the colliery. The coal seams proved of great narrowness, and this together with de-watering problems precluded cost-effective recovery.

The Electrona Carbide Company took over the limestone quarries as a raw material source for the manufacture of calcium carbide. The company, during the 1940s built a two-foot gauge steel track tramway to transport quarried limestone to a jetty at Ida Bay within the Lune River Estuary. Around this time a new workshop, office and workman's quarters were also built and Malcolm Moore locomotives were commissioned for use on the line. With siltation of the estuary and the use of bigger vessels, in the late 1940s (Fell undated) the track was extended to Deephole Bay. The limestone was shipped to the company's processing plant at Electrona.

With the demise of the Australian Commonwealth Carbide Company (formerly Electrona Carbide Company) in the 1970s the quarry and associated railway changed hands. Construction of a good quality road to Hastings rendered the railway/seaway transport mode obsolete and in the late 1970s the government purchased the railway, consisting of infrastructure, a series of blocks of land, and a further series of registered caveats over separately owned titles. In 1979 the Minister approved the Parks and Wildlife Service negotiating with the separate owners for the purchase of these other titles. In 1981 the railway was in turn leased to the Ida Bay Railway Company as a sightseeing tourist venture.

The railway continues to exist within the State reserve, now in working condition after some years of disrepair, running for approximately seven kilometres along the southern shore of the Lune River estuary terminating at Deephole Bay. The railway is currently subject to a lease agreement with a private operator (see Section 4.1), which enables the operator to carry tourists and walkers along the scenic and historic coastal route, departing from Lune River.

Railway assets within the State reserve include four Malcolm Moore locomotives, the workshop, office and workman's quarters, rolling stock and associated equipment. Only a handful of Malcolm Moore locomotives survive outside of this railway.

Aside from the railway assets the State reserve has a wealth of surviving, but largely unsurveyed, historic fabric including an old town site, cemetery and mining era remains.

Historic Site

Some time after 10pm on the evening of 12 March 1835 the *George III*, a convict transportation vessel, enroute from Great Britain to the colony, struck a reef directly offshore from the spit in what is now the conservation area. The ship quickly began to break up. Convicts were confined to the hold at gunpoint until the ship's longboat was launched and taking its first load of occupants to the safety of the nearby shore. A heavy swell was running and it was only at Southport (perhaps at Deephole in the State reserve) that a safe landing could be effected. The longboat returned to the scene of the wreck twice more during the course of the night and next morning to transfer survivors.

map 4 history

The resultant loss of life from this shipwreck means it still stands as Tasmania's third worst maritime accident (Broxam & Nash 1998). According to Norman (1938) 81 convicts were saved out of a total of 222 onboard. While most drowned, Hobart papers reported that during the incident that two convicts, William Yates and Robert Luker, were accidentally killed by 'warning shots' designed to stop the convicts breaking out of the hold (Mercury 19 December 1872). Of the others 77 were saved out of a total of 85 (Norman). None of the ship's officers lost their lives, nor any soldiers. However 128 convicts, three children, the wife of a soldier and two crewmembers were drowned.

Anti-transportation sentiment was already gathering amongst many in the colony, and the loss of the *George III* contributed fuel to what was to become a fiery debate. From the emancipists viewpoint the ship's voyage was symptomatic of their issues. Scurvy swept through the convicts during the voyage, resulting in the death of twelve – yet no others on board were affected by the disease. At landfall in Tasmania 60 convicts were confined to beds in a makeshift ship's hospital, with 50 so sick they were incapable of helping themselves. Upon the ship striking the reef, the continued confinement of the prisoners and failure to yield assistance to the sick, culminating in shots being fired, all clearly pointed at the colonial administration's failures to accord humane treatment to its charges.

A coronial inquiry conducted shortly after found no evidence to corroborate the death by shooting allegations.

In 1839 a monument, in the form of an inscribed tomb, was placed on Southport Bluff to record the event. The inscription on the tomb indicates Lieutenant-Governor George Arthur 'desired' the tombs placement, although his role in the works is unclear. The Mercury (28 December 1871) records that the monument was paid for entirely by Major Thomas Ryan. By 1836 Arthur's autocratic and authoritarian rule had resulted in his recall and it was during John Franklin's term of office that the tomb was erected. Archive records indicate that Ryan had considerable correspondence with the Colonial Secretary's Office during the year of 1839, and that the government of the day had at very least heavily subsidised the tomb's placement.

Ryan's role in the tragedy is noteworthy. It was he who had commanded the military guard of the ship on the night of its loss. Ryan is described by Mawer (1997) to be, even at the time of *George III's* departure from England, an "old and distinguished soldier, having served with the 50th [regiment] throughout the Peninsular War." According to Mawer, Ryan, holding his six year old son was among the one hundred or so persons left clinging to the wreck during the long hours of darkness between the first departure of the long-boat and its return around 6 am the following morning.

The monument still stands and its existence is the chief reason for the proclamation of the surrounding historic site. The structure consists of a simple sandstone vault with classical detailing. Its predominant architectural style is old colonial Georgian. The main inscription on the tomb reads:

*Near this place are interred the Remains of Many of the Sufferers
who perished by the Wreck of the George the III, convict ship,
which Vessel struck on a sunken rock near the Actaeon reef
On the night of the 12th April 1835
upon which melancholy occasion 134 human beings were drowned
This Tomb is Erected by the desire of His Excellency
Colonel GEORGE ARTHUR, Lieut.-Governor
to mark that sad event,
and is placed on this spot by the Major THOMAS RYAN, 50th Regiment
One of the Survivors on this Occasion*

On the southern side of the monument is inscribed the single word 'RESURGAM' (Latin: 'I shall rise again'). An unknown number of burials associated with the George III shipwreck are also expected to be located nearby.

A major management challenge to management of the historic site occurred with the discovery of an endangered plant *Epacris stuartii* (see Section 2.5). With the consequent decision, reached in 1998, to exclude public access a key issue was how

to continue to provide some level of appreciation of the monument and associated meanings of the surrounding landscape. The development of a simple lookout on a knoll just outside but overlooking the historic site, enhanced by the presence of quality interpretation, has provided a good compromise.

The monument is now over 150 years old and by 2003 its condition had deteriorated to the extent that a major work of restoration was undertaken. The works took place in March of that year and consisted of relaying the free-stone footing in lime mortar and relaying and re-pointing the carved stones of the monument.

Following a major wildfire in 1997 a shore based whaling station was found across the boundary of the historic site (see historical background for the conservation area above).

Conservation Significance

Sites relating to the French National Assembly expedition within any of the reserves, would have significance at the state national and international level.

Sites of early European exploration and settlement, principally associated with resource extraction (ie. mining, forestry and whaling), all have heritage value at the local and state level.

The Ida Bay Railway, within the State reserve has been placed upon the Tasmanian Heritage Register. The statement of significance held on the Register says:

“The Ida Bay Railway is the last original bush tram in Australia with the outer terminus being the southernmost railway station in the country.”

The historic site has been placed upon the Tasmanian Heritage Register. The statement of significance held on the Register says:

This site is of cultural heritage significance for its ability to demonstrate the system (and its inherent dangers) of convict transportation to Colonial Tasmania.

George III Monument Historic Site is of cultural heritage significance for its associations with people important in Tasmanian history, notably Governor Arthur, who ordered its construction.

The whaling station that sits across the boundary between the conservation area and the historic site is considered the best preserved such site in the State (Nash, pers com).

Tasmanian blue gum *Eucalyptus globulus*, the floral emblem of Tasmania, was first collected in Tasmania by the scientist La Billardiere of the d'Entrecasteaux expedition.

Management Issues

While some survey work has been undertaken in the conservation area in recent years, the fundamental lack of knowledge of historic heritage sites and of the impact of current management and user activities upon any surviving sites is an issue.

The Ida Bay State Reserve has, for a long-time suffered from an under appreciation of its historic heritage significance. Listing on the Tasmanian Heritage Register is an important step in reversing this management issue. However despite listing no systematic inventory or significance assessment has yet been undertaken for the reserve. Continuing conservation of the heritage significance of the Ida Bay railway is highly dependent upon the railway continuing to be functional and used, and this in turn is highly dependent upon the maintenance/rejuvenation of the commercial viability of the site (see Section 4.1).

For the historical site care should continue to be taken to ensure its historical significance remains accessible, even though, for the foreseeable future, this must continue to be from a distance.

Aims

The aims of historic heritage management are to:

- conserve the heritage assets of known significance, with controlled adaptation to encourage tenancy and viability;
- identify, record and assess other historic heritage sites;
- protect and conserve all remaining significant heritage fabric and features;
- consult with the community on management changes;
- present and interpret historic heritage.

Prescriptions

- 2.8.1 Any vehicle track route changes, rehabilitation works, or other developments in the conservation area will require individual cultural heritage assessment prior to work commencing.
- 2.8.2 Facilitate, where possible, the continuation of the Ida Bay Railway as a working railway.
- 2.8.3 Prepare a strategic asset management plan for the Ida Bay Railway (see prescription 4.1.3).
- 2.8.4 Attempt, as possible, to ensure catch-up and cyclic maintenance works necessary to maintain the essential integrity of the railway assets is undertaken.
- 2.8.5 Continue to ensure the George III Monument is adequately maintained and conserved.
- 2.8.6 Continue to ensure the significance of the history of the historic site is interpreted for the public, particularly on the knoll just outside of the historic site and within the conservation area.
- 2.8.7 Undertake surveys and significance assessments in the three reserves as resources and circumstances permit in order to provide conservation and management direction.
- 2.8.8 Adhere to the Burra Charter, its associated guidelines and the commentary on the charter in Kerr (2000) in all conservation and management works.
- 2.8.9 Prepare a conservation policy statement or conservation plan, including specific assessment of significance, before any decisions about major works, use, removal or interpretation of individual elements of State heritage significance is undertaken.
- 2.8.10 Ensure fire management provides appropriate levels of protection to historic assets (see Section 3.1).
- 2.8.11 Consult identifiable community groups that may have a stake in management changes, as far as practicable, on major cultural heritage driven undertakings or developments.
- 2.8.12 Future developments and uses in any heritage site will benefit its conservation as an historic place or, at least, not detract from this.

Section 3 Protection

3.1 Fire

The reserves contain a mosaic of vegetation types (and associated wildlife communities) including forest, heathland and sedgeland, all of which have specific fire regime requirements for conservation.

Many areas of the three reserves have been very frequently burnt over the past few decades, almost certainly more frequently than in Aboriginal times. It also seems certain that most of the fires are deliberate. Implementing appropriate fire response is often difficult because of the difficulty of access, remoteness and reporting problems.

Major fires occurred in the historic site in February 1981 and again April 1994. The 1981 fire was of high intensity and is believed to have burnt the entire population of *Epacris stuartii*. About 3000 ha of the conservation area and adjacent State forest was burned in March 1998, mostly north of Brodribb's Track. Most of the Ida Bay Railway track was saved, as well as the vegetation of the historic site, where the endangered *E. stuartii* is located. There have been many other smaller fires during this timeframe.

Management Issues

In the forested areas, high intensity fires have killed large numbers of stringy barks *Eucalyptus obliqua*. High fire frequencies have reduced plant species diversity and in some areas, diversity of habitat for animals.

Frequent and high intensity fires are responsible for the degradation/destruction of heathland. This is a particular issue with respect to the maintenance of *E stuartii* in the historic site. Frequent fires are thought to be responsible for the small size of the *Euphrasia fragosa* population in the conservation area. Heathland degradation is in turn responsible for restricting heathland dependent wildlife such as the ground parrot, Latham's snipe, southern emu-wren, and striated field wren.

The sedgeland communities are associated with the development of organic soils and peats, which are very vulnerable to fire.

Aims

The aims of fire management are to:

- protect visitors and staff;
- protect historic and other assets; and
- maintain or improve nature conservation values.

Prescriptions

- 3.1.1 Aim, through appropriate fire management, to reduce the frequency of deliberate and accidental wildfires in the three reserves.
- 3.1.2 Employ, if resources permit, a ranger stationed in the reserves during the summer months to, among other things, speed up wildfire response and deter arson (see prescription 5.8.6).

- 3.1.3 Give priority to fire management, fuel reduction and suppression works using the *Inter-Agency Fire Management Protocol* agreed between Forestry Tasmania and Parks and Wildlife Service.
- 3.1.4 Review the fire detection and reporting procedures for the three reserves as a matter of priority.
- 3.1.5 Liaise with the Ida Bay Railway leaseholder to minimise ignitions from the vicinity of the railway and to facilitate rapid reporting and response should they occur.
- 3.1.6 Encourage visitors to use fuel stoves at all campsites.
- 3.1.7 Provide visitors guidance on fire safety and risk minimisation through signs and information note-sheets.
- 3.1.8 Prepare a fire management plan in consultation with local land-holders, including Forestry Tasmania, taking into account the following:
- protection of people, buildings, facilities and property from wildfire;
 - prevention of wildfires from burning into neighbouring land;
 - prevention of wildfires from neighbouring land burning into the three reserves;
 - the conservation of *Epacris stuartii*; *Euphrasia gibbsiae* ssp. *psilantherea*, *Euphrasia fragosa*, *Corunastylis morrisii*, *Prasophyllum pulchellum* and *Thelymitra jonesii*;
 - the healthy maintenance of the coastal heathland communities using ecological burning regimes;
 - protection of habitat for the swift parrot, grey goshawk, ground parrot and Latham's snipe;
 - the protection of peat soils; and
 - the healthy maintenance of the present mix of vegetation types.
- 3.1.9 As part of the fire management plan compile a fire history for the area.

3.2 Weeds and Diseases

Phytophthora cinnamomi root rot fungus is a potential threat to the vegetation of the three reserves, particularly in remaining heath communities. Coastal heath is an optimal habitat for the fungus and in such environments it can cause severe impact with long lasting effects. *P. cinnamomi* is spread to some degree by native animals and natural water movement, but is most often introduced into new areas by the transport of infected mud, particularly on the tread pattern of motor vehicle tyres and boots. From new infection sites it spreads downhill by water transport.

The disease is known from a number of locations in the conservation area and the State reserve, yet is absent from the historic site.

Chytrid frog fungus is an infectious disease that attacks the frog's skin and eventually kills it. Although it is absent from the nearby World Heritage Area (WHA), it may be in the conservation area because of the heavy vehicular use.

The conservation area is currently free of significant weed species apart from marram grass *Ammophila arenaria*. Marram grass heavily infests the northern tip of the spit while light infestations are found further south. Canary broom *Genista monspessula* is found at various locations in the northern part of the conservation area and some eradication works have been undertaken.

In the State reserve weed species which can be invasive (including blackberry and lupin) are common in disturbed areas. Canary broom has also been reported along the railway line near Deephole (Hamilton & Taylor, 2005).

Management Issues

A comprehensive survey of the extent of *P. cinnamomi* in the reserves has not been undertaken.

The distribution of *P. cinnamomi* is important in choosing the new alignment of the Lagoon Track as vehicles are a major carrier of the spores.

Epacris species are particularly susceptible to this disease (Lawrence 1993, Keith 1996) and the long term viability of *E. stuartii* within the historic site may well be dependent upon its exclusion. Under the *Plant Quarantine Act 1997*, special management measures are required. *P. cinnamomi* may also pose a significant risk for small semi parasitic *Euphrasia* populations as many host species are susceptible to infection - their death will result in the death of attached *Euphrasia*.

Marram grass is a 'transforming' weed, capable of totally displacing existing native coastal vegetation as well as profoundly altering dune geomorphology. It is a major conservation issue.

Surveys for Chytrid frog fungus have not yet been undertaken in the reserves. However, if the disease is not yet present, precautionary measures and user education could prevent the spread. If the disease is present, management will be required to prevent the spread to other areas.

Aims

The aims of weed and disease management are to:

- prevent as possible, the arrival of new weed and disease species;
- eradicate weeds and diseases where practical; and
- control and manage weeds and diseases where eradication is not practical.

Prescriptions

- 3.2.1 Undertake a thorough survey for *P. cinnamomi* along the proposed Lagoon Track corridor as an initial step in determining the best route for the track. Consider the recommendations of authorities in *P. cinnamomi* control when determining the final track alignment.
- 3.2.2 Weed eradication, control, and containment actions and priorities will be based on clear, well documented contemporary knowledge and procedures as set out in a locality wide weed management plan and supporting documents.
- 3.2.3 Remove light infestations of marram grass from the southern portions of the spit and other locations as found.
- 3.2.4 Undertake further survey work to determine the best possible approach for dealing with areas of heavy infestation.
- 3.2.5 Continue broom eradication works in the reserves in accordance with the relevant PWS weed plan.
- 3.2.6 Undertake further assessment of the extent of *P. cinnamomi* infection within the three reserves where threatened plant species occur or are discovered, and adopt management strategies to protect those species.

- 3.2.7 Survey the area for the presence of Chytrid frog fungus. Take appropriate management steps regarding quarantine and cleaning measures to prevent introduction or spread of the disease as necessary.

3.3 Rehabilitation

Many areas of the conservation area damaged by vehicle activity and camping require rehabilitation works.

Aims

The objective of soil conservation and erosion control is to prevent unnatural rates of erosion and rehabilitate badly damaged areas.

Prescriptions

- 3.3.1 Give priority to assessing necessary rehabilitation works for all closed tracks and campsites.
- 3.3.2 Where rehabilitation is unlikely to occur naturally, undertake a rehabilitation program, including at sites adjacent to the *Euphrasia gibbsiae* ssp. *psilantherea* population (see Section 2.5).
- 3.3.3 Encourage and assist volunteer track stabilisation and rehabilitation programs where possible.

3.4 Reserve Boundaries

The present boundaries of the reserves are largely a result of historical patterns of land use that have sought to exploit the economic potential of the area. In consequence, the boundaries poorly reflect ecological or biophysical demarcations. The land tenure map (see Map 2) illustrates the fragmented nature of the boundaries of the State reserve and the conservation area.

Management Issues

The present boundaries of the State reserve and conservation area effectively surround several large blocks of private land, providing difficulties for delivering effective land management to these reserves. Some of these blocks effectively cut the conservation area in half and severely limit the ability of the Parks and Wildlife Service to manage public access and recreational use in areas south of these blocks. Problems also confront their owners (see Section 5.2).

Although this plan proposes to close all tracks through private land, walkers may inadvertently enter private blocks, particularly those adjacent to the southwestern corner of the conservation area.

Aims

The aim of considering reserve boundaries is to obtain more secure reserve boundaries and ensure, where possible, protection of the Southport Lagoon catchment.

Prescriptions

- 3.4.1 Investigate, in consultation with adjacent landowners and Forestry Tasmania, mechanisms for redefinition of the boundaries of the conservation area and State reserve to reflect biophysical conditions and processes and to facilitate management of the reserve.
- 3.4.2 Seek to ensure the complimentary management of surrounding private land through such mechanisms as the entering into of protective covenants and agreements with adjacent private landowners and by taking up any opportunities for Crown purchase.

3.5 Reserve Status

The current status of the conservation area requires the Parks and Wildlife Service under the *National Parks and Reserves Management Act 2002* to consider, within the context of management planning, management objectives such as the controlled use of natural resources, exploration and utilisation of mineral resources, and commercial and industrial activities (see Section 1.9).

Management Issues

In view of the broad range of values identified in Section 2 the current reserve status of the conservation area may not adequately safeguard values and State Reserve may be a more appropriate reserve status to adequately safeguard values. Any future proposal to change the class of the reserve for the conservation area will be considered on its own merit by the Tasmanian Government at the time.

Section 4 Use and Development

4.1 Leases, Licences and Written Authorities

Conservation Area/State Reserve Access Licences

At present several private blocks 'landlocked' within the conservation area and/or State reserve are not accessible by conventional road vehicles on maintained roads and, in several cases, are not even serviced by road reservations. To get to them owners must cross either the State reserve or the conservation area. Owners of these 'landlocked' blocks may approach the State to obtain formal access rights. An access licence for landowners of a private block in the southwestern corner of the conservation area, to obtain access across Crown land and the conservation area, was granted in January 2005. This licence has now been terminated, following the transfer of title to the Tasmanian Land Conservancy in March 2006.

State Reserve Railway Lease

Within the State reserve there is currently a 40-year lease agreement in place with a private operator 'for the purposes of conducting a tourist railway'. The lease also allows for the conduct of overnight accommodation. This lease commenced on the 12 December 1981 and includes a lease over the permanent way (track) and parcels at either end. The lease also covers the buildings at the Ida Bay end including workshops a pump house, toilets and showers, accommodation quarters, a store shed, several Malcolm Moore locomotives and a number of carriages. The lease requires all buildings, equipment and track to be kept in good repair.

Management Issues

Providing private rights for access to landlocked blocks across the conservation area and/or State reserve is highly problematic. The management authority of a reserve has the power to permit a person to use the reserved land to gain access to other land, such as a private landlocked block. However, there is no automatic right for a person to obtain an access licence and any granting of an access licence would be expected to be on conditions which protect the values for which the land was reserved. The major conservation issue, particularly for the conservation area, is degradation as a result of vehicle access (see Section 5.2). Allowing access, for even low numbers of authorised vehicle drivers, is likely to cause damage to the fragile peat soils, vegetation and cultural heritage values along any proposed track alignment. In addition, once tracks are created, the best efforts at barring access to all except authority holders often fails. With unauthorised vehicle drivers gaining access, the rate of degradation rapidly increases.

Maintaining viable commercial operation of tourist railways is often problematic. They are labour and capital intensive and, because they can potentially carry relatively high levels of public risk, must strictly maintain safety standards and increasingly expensive public liability insurance coverage. Accordingly tourism railways are reliant on high volume, high value ticket sales and are also often reliant on extensive volunteer input. The Ida Bay Railway, from the outset, has been plagued by viability problems. Being well off the beaten track it has always had difficulty attracting visitors and volunteers and complying with lease conditions in respect to safety, insurance and regularity of service. Successive leaseholders have also lacked the substantial capital requirements required to bring the train-ride experience in line with contemporary expectations.

Recently the chances for creating a viable tourism enterprise have improved. The commercial success of the Tahune Airwalk attraction has attracted large numbers of tourists to the south coast. The opening of the Peppermint Bay Resort, redevelopment of the Hastings Caves experience and the possibility of other major developments coming on-line in the area are serving to produce an increasing market and the possibility of linkages. As well, recently the lease of the railway was transferred to a new owner and is expected to recommence operation in late 2006.

Aims

The aims with respect to leases, licences and written authorities is:

- in the conservation area and/or State reserve, to avoid where possible entering into agreements that are likely to foster damage to reserve values as a result of vehicle access;
- in the State reserve, to provide the appropriate circumstances to allow a leaseholder to place the Ida Bay Railway on a solid commercial footing, providing the circumstances for its continuing conservation.

Prescriptions

- 4.1.1 Generally the Crown will only enter into private agreements to allow access across landlocked blocks if there are compelling legal or natural justice reasons to do so. All such applications will be considered on a case by case basis.
- 4.1.2 Any new licence granted to construct/operate an access road through either the Ida Bay State Reserve or the Southport Lagoon Conservation Area will be subject to the provisions of Section 4.3. The licence will only be for private purposes, not public access, and will require the licence holder to maintain the access, including the control of weeds and *Phytophthora*.
- 4.1.3 While recognising the heritage significance of the Ida Bay Railway the PWS also recognises and supports proposals for controlled adaptation and development of the site that promotes development of a more viable tourist product.

Also see Sections 2.8, 4.3 and 4.4 for related prescriptions.

4.2 Mining in the Conservation Area

As indicated in Section 1.9, the reservation status of the conservation area provides for the sustainable use of the area's natural resources, including mining activity. This is not the case in either the State reserve or the historic site.

At present there are no mining leases or retention licences within the conservation area. There is one exploration licence current over the conservation area, for the exploration of hydrocarbons, however this licence extends across half the State.

As a general statement the mineralisation and prospectivity of the conservation area is not considered high. Coal has historically been mined in the area, but these mining operations failed to be economically sustainable (see Section 2.8). Coal deposits continue to exist, but the Ida Bay coal-field is mainly to the west of the Leprena Track and outside the conservation area. It is unlikely coal mining in the conservation area would ever be commercially viable.

All exploration activity undertaken within the conservation area requires the approval of the Mineral Exploration Working Group which has Parks and Wildlife Service representation and must accord with the Mineral Exploration Code of Practice.

Should mineralisation warrant bulk sampling, a mining lease would normally be required. Dependent on the scale of the proposal, the Environment Division of DTAE will make an assessment of the proposal under the *Environmental Management and Pollution Control Act 1994* and set conditions to be incorporated in the permit. Environmental conditions, performance and rehabilitation bonds will normally apply.

Should a mining operation be proposed, a change in scale of the former approvals would trigger re-assessment of the performance bond and the permit. The proponent's environmental management plan, normally drafted by consultants, provides the basis for assessment, public comment, approval and permit conditions.

Management Issues

Any mining activity within the conservation area has the potential to have major impact on reserve values (see Section 3.5). The ocean edge, spits, lagoons and other estuarine areas of the reserves have special conservation significance (see Section 2) and would be greatly impacted by mining development.

Aims

To ensure that exploration, or any subsequent extraction and rehabilitation are undertaken in accordance with best practice to provide maximum environmental protection.

Prescriptions

- 4.2.1 Conduct mineral exploration in accordance with conditions laid out in the Mineral Exploration Code of Practice.
- 4.2.2 Extraction will be subject to The Quarry Code of Practice and environmental assessment as required by State legislation including the *Environmental Management and Pollution Control Act 1994*, the *Mineral Resources Development Act 1995* and the *Mining Act 1993*.
- 4.2.3 Carry out rehabilitation on all activities associated with mineral exploration and mining activity.
- 4.2.4 Exclude the lagoons, spits and a terrestrial strip of 100 metres back from high water along the coast and all estuarine areas of the reserves from all future exploration and mining activities.

4.3 Other Development within the Reserves

From time to time new uses and/or developments may be proposed for the reserves. Such initiatives can range from manipulative research, construction of a track or toilet, through to constructing or renovating buildings, and installing or repairing services. Development works can also refer to commercial or State infrastructure uses.

This section outlines the processes for assessing and approving new use and development proposals that are consistent with this management plan. To assist this process the reserves have been zoned to provide guidance on the location of development (see next section).

The historic site and the Ida Bay Railway within the State reserve are both listed on the Tasmanian Heritage Register and are therefore subject to provisions of the *Historic Cultural Heritage Act 1995*.

The *Land Use Planning and Approvals Act 1993* is expected to be amended so it will apply to proposals for use and development in reserved land managed under the *National Parks and Reserves Management Act 2002*. Until the *Land Use Planning and Approvals Act 1993* is amended, or the Planning Scheme is amended to establish the management plan as the primary means of assessing the merit of applications for use and development, all assessment will be completed in accordance with the PWS planning processes, the LUPA Act and the Planning Scheme.

Aims

The aims of managing development works are to:

- ensure that decisions related to proposed developments or activities reflect the management objectives of this plan;
- ensure that sound processes exist for the assessment of potential impacts of proposed developments and activities (including scientific and management activities);
- ensure particularly sensitive areas are not disturbed.

Prescriptions

- 4.3.1 All use and development will accord with the Esperance Planning Scheme 1989 and this management plan.
- 4.3.2 All 'works' as defined under the *Historic Cultural Heritage Act 1995* at the historic site or on the Ida Bay Railway require the approval of the Tasmanian Heritage Council.
- 4.3.3 The prescriptions in this plan relating to use and development have effect until, and unless, replaced by any requirements under the *Land Use Planning and Approvals Act 1993*.
- 4.3.4 The Director of National Parks and Wildlife will determine what constitutes a minor or major development in accordance with the criteria established below.
- Major use and developments are those which are large in scale, or have high public interest, or have the potential for substantial impacts on the values of the reserves, or have significant impact on the provision of facilities or services outside the reserves.
 - Minor use and developments are considerably smaller in scale, have low public interest and low potential for impact on values.
- 4.3.5 Cooperate with the Tasmanian Aboriginal Land Council about any determination on development proposals that may have potential impacts on Aboriginal cultural heritage or values.
- 4.3.6 All commercial tourism use and development proposals will be required to demonstrate economic viability while according with this management plan. Demonstration will be assessed through an independent audit of a detailed business and financial plan showing at least a three-year projection of operations.
- 4.3.7 Providers of tourism and recreational facilities or services will:
- base their operations on features and values of the reserves;

- operate in a manner compatible with protection of features and values;
 - explain the principles of minimal impact on natural and cultural values to clients;
 - avoid impact on the legitimate enjoyment and experience of other visitors;
 - contribute to the external costs resulting from the proposal.
- 4.3.8 All development will adopt environmental “best practice” methods.
- 4.3.9 Clean all construction machinery and materials destined for use in the reserves, using appropriate hygiene measures.
- 4.3.10 Ensure that any lease, license or written authority to operate in the reserves contains adequate provisions to cover the costs of foreseeable environmental protection or remedial measures.

Prescriptions - Minor Use and Development Proposals

- 4.3.11 Assess all proposals for minor developments, works, research or maintenance involving any ground breaking, disturbance or environmental manipulation of any kind in accordance with internal procedures approved by the Director. Undertake such works in accordance with the *Reserve Management Code of Practice*.

Prescriptions - Major Use and Development Proposals

- 4.3.12 Cooperate with the Huon Valley Council in the consideration of all major development and resource use proposals. Such proposals will require:
- preparation of an environmental impact assessment in accordance with guide lines and principles established by PWS, the Huon Valley Council and section 74 of the *Environmental Management and Pollution Control Act 1994*;
 - a site plan detailing how impacts will be managed;
 - demonstration of compliance with all other relevant statutory and State policy requirements; and
 - the approval of the Minister prior to the lodgement of a development application.
- 4.3.13 Site plans will define planning and design objectives, environmental performance standards and the extent and nature of visitor and management facilities and services.
- 4.3.14 Environmental impact assessments and site plans will be available for public comment for a period of not less than 30 days prior to approval and, subsequently, whenever modifications of a more than trivial nature are proposed.

4.4 Zoning

The reserves have been zoned to ensure appropriate management and use in their different parts.

Aims

The aims of zoning are to:

- take account of localised features, conditions, and values;
- ensure substantial areas of the reserve are undisturbed;
- protect and enhance reserve values by concentrating and directing tourism and recreation development to designated locations; and
- provide a range of recreational and tourism opportunities consistent with the values of the reserve.

Prescriptions

4.4.1 Apply three management zones to the reserves: the Visitor Services Zone, the Recreation Zone and the Conservation Zone. Table 3 establishes the aim of each zone. Map 5 shows the locations of these zones in the reserve.

Table 3 Management Zones (see Map 5)

ZONE /LOCATION	VALUES	GENERAL AIM
<p>Visitor Services Zone</p> <p>There are two such zones in the State reserve associated with the start and end point of the Ida Bay Railway.</p>	<p>High use areas with visitor services and facilities provided according to level of use. Management inputs and presence is high to protect natural and cultural values, recreation and tourism.</p>	<p>To provide visitor services and facilities where visitation is highest and accessible, consistent with reserve objectives.</p> <p>To maintain as far as possible, a natural setting and cultural integrity and to minimise impacts of facilities and visitor use.</p>
<p>Recreation Zone</p> <p>This is the principle zoning associated with:</p> <ul style="list-style-type: none"> • camping (see prescription 5.4.1), • recreation vehicle use – incorporating a corridor 250 metres either side of a proposed realignment of the Lagoon Track (see prescription 5.2.5), and • walking – incorporating a possible new track around and south east of Deephole Bay, plus a corridor 50 metres either side of the current alignment (see prescription 5.6.30). <p>The zoning is also applicable to the Ida Bay Railway track and a corridor of 25 metres width, either side of the centreline of this track.</p>	<p>Important natural and cultural values and scope for recreational use by suitably equipped people. They are areas which are suitable for relatively high levels of day and overnight use due to their location and proximity to road, water and walking track access.</p>	<p>To provide for sustainable dispersed recreational activities and small-scale recreational facilities without significant impact on natural processes and cultural features.</p>

ZONE /LOCATION	VALUES	GENERAL AIM
<p>Conservation Zone</p> <p>The zoning applies to the balance of the conservation area, all of the historic site and the balance of the State reserve.</p>	<p>Important natural and cultural values are found in this zone. Wetlands of special significance have been identified. Key habitat areas have been identified.</p>	<p>To conserve natural integrity and protect, maintain and monitor the diversity of plant and animal species and communities.</p> <p>To conserve heritage values.</p> <p>To maintain the character of naturalness, tranquility and isolation.</p>

Prescriptions for the Visitor Services Zone

- 4.4.2 Provide infrastructure to facilitate recreational and tourism use which harmonises with the natural and/or cultural environment.
- 4.4.3 These zones, both located within the State reserve, are intended to provide the principal focus for any further commercial development of the Ida Bay Railway. Access to the Deephole Visitor Service Zone is limited to rail, boat or foot access. Public vehicular access is specifically ruled out (see management issues Section 4.1). Development within this zone may include hostel type accommodation, bunk house and self-contained accommodation, staff housing, restaurant facilities, development of infrastructure services such as sewage, water supply and power, interpretation facilities, public landing facilities, toilets, showers, public shelters, public picnic and camping facilities, nature walks, gas barbecues, licensed camps, and equipment caches.
- 4.4.4 Proposals to develop any of the above facilities must comply with the requirements of Section 4.3.
- 4.4.5 Concessions for providing recreational or tourism opportunities will be considered if consistent with the zone's natural and cultural values.
- 4.4.6 Fuel loads may be managed to reduce wildfire risks, or to maintain a low risk environment for the public.
- 4.4.7 This zone will be the main location for provision of education and interpretation facilities and activities.
- 4.4.8 Limit the number of signs.
- 4.4.9 Encourage minimal impact strategies by visitors, including encouragement to take their rubbish home.

Prescriptions for the Recreation Zones

- 4.4.10 Development within this zone may include the construction or upgrading of designated camping areas (see Section 5.4), a maximum of two licensed camps, equipment caches, a new substantially re-routed Lagoon Track (but no other vehicle tracks), walking tracks and the construction of toilets.

The width of the corridor for the Lagoon Track is only for zoning purposes. This allows for the best final track route, based upon a full environment assessment. Lawful access will be limited to one narrow track, not the entire corridor, when construction is complete.

- 4.4.11 Proposals to develop any of the above facilities must comply with the requirements of Section 4.3.
- 4.4.12 Concessions for guided tour operations may be allowed if consistent with the zone's natural and cultural values.
- 4.4.13 Limit the number of signs.
- 4.4.14 Rubbish bins will not be provided.
- 4.4.15 Maintain tracks to ensure protection of the environment and the reasonable safety of users.
- 4.4.16 Clearly mark tracks.

Prescriptions for the Conservation Zones

- 4.4.17 New structures or any other type of development (including new tracks) will not be allowed, apart from the following:
 - within the historic site, maintenance work on the monument, the fence, or required to support further recovery of the *E stuartii* population (see Section 2.5);
 - signs necessary to promote public safety;
 - works required for the maintenance of existing management infrastructure, including tracks; and
 - works required in circumstances of safety, environmental or heritage protection, and for fire management.
- 4.4.18 Remove existing structures and development in these Zones not required for management in accord with processes established in Section 4.3.

4.5 Development Around the Reserves

The main land holdings surrounding and surrounded by the reserves are State forest and private land.

State Forest

In line with the *Forest Practices Act 1985*, planning for specific forest harvesting operations occurs through the preparation of forest practices plans. Forestry Tasmania consults with land managers or owners who share common boundaries with, or are in the immediate vicinity of, forestry operations during the planning and implementation of forest harvesting operations. Operations conducted under such plans must apply the *Forest Practices Code 2000* which seeks to protect environmental values. State forest adjacent to the three reserves is managed by Forestry Tasmania under the *Huon District Forest Management Plan 1996*. This document outlines broad management zones for the district, while much more detailed 1:25 000 maps define the finer detail of management prescriptions for specific areas.

map 5 zoning

Private Land

Several privately owned blocks are entirely surrounded by the conservation area and the State reserve (see Map 2). Currently there is no significant development on these blocks and for the most part they remain in a 'natural' condition.

Development on this land is regulated by the *Esperance Planning Scheme 1989* and currently the land is zoned as *Rural B*, the intent of which is:

- (a) to ensure the retention of the prevailing rural character and to protect rural land...;
- (b) to protect rural land from premature use or development...; and
- (c) to recognise that rural lands are significant....

The minimum lot size for this zoning is 40 hectares and a variety of uses are discretionary including holiday flats, motels, and various industrial uses. In view of the current access difficulties to the subject land parcels, their present development potential is limited. Agriculture and forestry are permitted uses.

The title to the large southwestern landlocked private block was transferred to the Tasmanian Land Conservancy in March 2006. Although the previous owners had proposed to harvest its timber, the Conservancy intends to manage it for conservation purposes to complement the adjacent conservation area. The access licence for the partially constructed road to the block through the conservation area was terminated in March 2006 and the Parks and Wildlife Service has now blocked public vehicular access and begun to rehabilitate the road.

Management Issues

Developments on the State forest and private blocks within and surrounding the reserves, and in more distant view-fields (see Section 2.2), has the potential to impact on a range of conservation values within the three reserves.

Prescriptions

- 4.5.1 Liaise with the Huon Valley Council during the review of the Esperance Planning Scheme, particularly with respect to ensuring the zoning of adjacent private properties is compatible with neighbouring reserve values.
- 4.5.2 Establish regular (at least annual) meetings between Forestry Tasmania and the Parks and Wildlife Service to discuss issues of cross-tenure management.
- 4.5.3 Liaise with the Forest Practices Authority and individual private landholders with respect to proposed new uses and developments and the maintenance of reserve environmental values.

Section 5 Visitor Services

5.1 Visitors to the Reserves

In the conservation area the most obvious and damaging recreation use is recreational vehicle driving although other important uses include fishing, camping, surfing, bushwalking, bird watching and botanical field exploration. The historic site has no recreation use, being closed to the public since 1998. Within the State reserve recreation use focuses on the Ida Bay Railway which, since 1981, has operated under a concession agreement as a tourist railway. While currently closed it is expected this attraction will soon reopen. Railway visitors also picnic and walk in the reserve. Many of these uses are discussed in more detail in the following sub-sections.

Reserves Standards Framework

The Reserves Standards Framework (RSF) is an in-house management tool designed to assist the land manager to strategically provide and maintain visitor services and infrastructure across the reserve system (PWS 2003). The RSF provides a mechanism for ensuring that context appropriate standards are established for the provision of services, such as toilets, camping areas and tracks. The framework employs an explicit assumption that the safety and comfort standards applicable to, say, facilities provided to walkers in remote wilderness areas, are different from those applicable to a busy visitor centre. Implementation of the RSF is intended to provide reliable outcomes with respect to visitor management, risk management and financial management.

Management plans identify the type of recreation setting a visitor might expect at different locations, as well as proposing future levels of service. Having identified, with community assistance, the type of experience opportunities presently offered and, where applicable, future aspirational recreation opportunities, the PWS (or delegated authority) can then apply suitable standards in the provision and maintenance of infrastructure. The site classification system employed under the RSF is outlined in Appendix 3.

Prescriptions – RSF

- 5.1.1 The initial recreational settings for the reserves are set out in Table 4. These settings can be changed by a development proposal that is approved via the Major Use and Development pathway (see Section 4.3).

Table 4 Recreation Settings for the Reserves (refer also to Map 5 and Appendix 3 for an explanation of the designated levels of service)

Zone	Existing level of service (RSF)	Aspirational level of service (RSF)
the undeveloped parts of all reserves		
Conservation	Not Managed for Visitor Services and Day Use Get Away (basic)	Not Managed for Visitor Services
proposed Lagoon Track realignment within the conservation area		
Recreation	Easy Access Camping (basic) and Not Managed for Visitor Services	Easy Access Camping (basic 4WD)
camping area on northern end of Spit within the conservation area		
Recreation	Not Managed for Visitor Services, and Easy Access Camping (basic)	Bushcamping Remote
camping, walking track corridor and new walking track area within the northern part of the conservation area		
Recreation	Not Managed for Visitor Services, and Day Use Get Away (basic)	Bushcamping Backcountry (basic)
walking track corridor around Deephole Bay with the State reserve		
Recreation	Day Use Get Away (basic)	Day Use Get Away (basic)
railway track corridor within the State reserve		
Recreation	Day Use Get Away (basic)	Day Use Get Away (basic)
railway Deephole terminus within the State reserve		
Visitor Services	Not Managed for Visitor Services and Day Use Get Away (basic)	Day Use Comfort (mid)
railway main terminus within the State reserve		
Visitor Services	Not Managed for Visitor Services	Day Use Comfort (visitor centre)

5.2 Recreational Vehicle Access

Most of this section concerns the conservation area, although there is limited applicability for the State reserve.

In recent years there has been a significant increase in the popularity of the conservation area and adjacent private land as a destination for recreational vehicle use (see Appendix 1). Recreational vehicles include high clearance two wheel drive vehicles and buggies, four-wheel drive vehicles, all-terrain vehicles (quad bikes), trail bikes and mountain bikes.

Publicly Accessible Vehicular Tracks

The following are the main tracks used by the public to access the conservation area (see Map 6). Currently there are no publicly accessible vehicle tracks into the State reserve.

map 6 vehicular tracks

The Leprena Track: The Leprena Track is an unmaintained public road (now a high clearance 4WD vehicle track) which, for much of its length forms the western boundary of the conservation area. Forestry Tasmania uses the Leprena Track to access State forest. Private landowners and the public use it to access private land and the conservation area.

Lagoon Track: Beginning on the Lune River Road this track runs through the conservation area in a south-easterly direction to the western shore of Southport Lagoon. Boats are occasionally launched from the shore at the end of this track.

Brodribbs Track: Commencing from the Leprena Track approximately 4.5 km south of the Lune River Road/Leprena Track junction, this track runs in a north-easterly direction across private land to Southport Lagoon. The track crosses the conservation area for only the last 300 metres. It also provides access for boat launching.

Spit Track: Once identifiable as a single track departing the Leprena Track near the former Pigsty Bridge leading to the southern end of the spit, this track has deteriorated into a family of tracks and routes generally crossing private land for about three kilometres before traversing about 1 kilometre of the conservation area leading to the spit. Upon reaching the spit most vehicles continue northwards along Big Lagoon Beach, crossing the spit midway to the foreshore of Southport Lagoon and continuing on to the mouth of the lagoon. Boats are launched from the foreshore of the lagoon, mostly near its mouth.

Blackswan Lagoon Track: Once also a single track it is now a family of tracks departing from the Spit Track and running by various routes to Blackswan Lagoon.

A new private logging road has been recently built through the conservation area to access a private block for logging purposes (see Section 4.5), however this road is not open to the public and has several locked boom gates across it.

Most of the publicly accessible tracks, particularly the Spit and Blackswan Lagoon tracks are in very bad condition with deep ruts, pot holes, and sections that are very wide (100 metres and more) and extremely muddy. They are only negotiable by those visitors with high clearance vehicles and adequate skills.

Current Use levels and Users

A vehicle counter placed on the Leprena Track from early November 2003 until the end of April 2004 recorded 881 vehicles entering the area (1762 passes). The peak visitor period was during the summer months, especially Christmas through to the end of February, though it has been suggested that high visitor levels may extend into April and May depending on weather and track conditions.

Its popularity is now not only a regional phenomenon but recreational vehicle users travel from throughout Tasmania and also mainland states to Southport Lagoon. Anecdotal evidence indicates there are at least three distinct recreational vehicle user sub-groups:

- Summer campers who come to the area, often annually, not principally to drive, but to fish, relax, and socialise with friends in a near wilderness setting.
- Day visitors who come to the area as individuals, or in groups as part of organised club events to responsibly enjoy the challenging driving and the natural values of the area.
- Day visitors who come as individuals or small groups, particularly in the wetter months, to enjoy the challenge of 'mudrunning' in really wet, muddy, and boggy driving conditions.

These groups to some extent have conflicting needs. The first and second group wants a track system that reinforces the remoteness of the area, but that preserves the area's unique values. The third group are more interested in a challenging, muddy, off-track driving experience, largely at the expense of natural values.

It is estimated that between 15 and 20% of the recreational vehicle users in the conservation area are members of a club that is affiliated with Four Wheel Drive Tasmania (previously known as the Tasmanian Recreational Vehicles Association).

Existing Controls

Direct: Since 2000 the Leprena Track has been closed south of Donnellys Creek from 15 May to 1 September each year, local landowners excepted. Currently this is the only direct management of vehicle use in the conservation area

By Private Land Owners: The private landowners on the northern boundary of the conservation area do not permit public vehicle access to their land.

Advisory: Various documents such as the *Cruisin' Without Bruisin' - Track Guide and Code of Practice for Recreational Vehicle Users* and the *Policy for Recreational Vehicles on State-Owned Lands in Tasmania* provide guidance to drivers on how to minimise their damage. Four Wheel Drive Tasmania also conduct driver training courses and have developed a minimal impact code for recreational vehicle users.

Some of these vehicles are only able to have conditional registration, but may be permitted for use in the conservation area. Conditional registration is issued to vehicles which do not comply with relevant vehicle standards or for any other reason. In this case, such vehicles may include dune buggies, off-road recreational motorcycles and quad bikes. Conditions imposed may relate to the use of the vehicles, areas in which the vehicles are used and any other conditions. Permits are required from the PWS to use such vehicles on reserved land. Information on these vehicles can be found on the Department of Infrastructure, Energy and Resources' website, under "Conditional registration" at www.transport.tas.gov.au/registration.

Management Issues

The primary destinations for vehicular visitors are the spit and Blackswan Lagoon. Branching off from the Leprena Track the network of tracks to and between these two locations forms a 'triangle of damage' (see Map 7).

All of the existing tracks leave the Leprena Track and cross private land for much of their lengths. There are no formal agreements between the PWS and any of the landowners for the PWS to be able to use, maintain or close the tracks on private land. Apart from the issues of physical damage, there are unclear liability issues for landowners. There are no available funds in the foreseeable future for the Crown to purchase these blocks to add to the conservation area and landowner agreement to sell their blocks would not necessarily be assured.

Physical damage caused by the use of recreational vehicles is by far the single biggest management issue in the conservation area. The nature of the terrain, consisting largely of low lying plains dominated by low heath and sedgeland communities, has enabled new vehicle tracks to be created at will. In some places tracks are up to 500 metres wide where drivers have tried to avoid previously created mud-holes and bogs, or have deliberately used the area for "mud play".

Damage to natural and cultural heritage values includes:

- soil and peat erosion, dune destabilisation and alteration of drainage patterns (see Section 2.1);
- vegetation loss including a significant threat to the threatened species *Euphrasia gibbsiae* ssp. *psilantherea* (see Section 2.5);
- damage to Aboriginal cultural heritage sites (see Section 2.7);
- the spread of weeds and disease including *Phytophthora cinnamomi* (see Section 3.2).

The current management regime of seasonal closures has proven completely inadequate in aiding recovery.

In the past factors such as inadequate signposting, marking and routing of tracks and the absence of ongoing maintenance of these tracks has been blamed for the damage

to the natural and cultural heritage values. However the most important issue underlying all of the direct impacts is the difficulty of providing an appropriate management presence. The terrain is hazardous to move through and requires specialised vehicles and trained, skilled staff. To date, established priorities, resourcing levels and risk management issues have together presented a fundamental barrier to better management.

To make matters worse many tracks cross private blocks and much of the damage has occurred on this land, causing alarming concerns for owners. Most vehicle drivers are even unaware that many of the tracks cross private land. The PWS, while lacking direct jurisdiction, has attempted to work cooperatively with users and private landowners to find solutions to these issues, but so far little has been achieved.

An analysis of aerial photography for the area, dating back to 1948, has revealed that the extent and severity of track formation and damage is continuing to rapidly increase (see Appendix 1).

Four Wheel Drive Tasmania has agreed that there is an urgent need to address the issues surrounding recreational vehicle use within the Southport Lagoon Conservation Area.

Aims

The aims of management of recreational vehicle access are to:

- place access on a sustainable footing with respect to the conservation of natural and cultural values;
- ensure access is entirely confined to public land to relieve private landowners of the burden of providing access through their properties to reserved land; and
- continue, within the limits of the other aims, to continue to provide some level of vehicle access within the conservation area.

Prescriptions - Access Management

The prescriptions of this section are based on a comprehensive options analysis carried out by the PWS (see Appendix 2). The management approach is based on an analysis of:

- the reserve's values and legislated management objectives;
- the PWS's management capabilities and financial resources; and
- an assessment of community support.

5.2.1 Close all public use of vehicles down the Leprena Track into the southern end of the conservation area. Essentially this means the closure of all tracks in the conservation area with the exception of the Lagoon Track.

5.2.2 The new alignment of the Lagoon Track and the Leprena Track from the South Cape Road to Donnelly's Creek are the only vehicular tracks/roads which may be made available for public use within the reserves.

5.2.3 Off-road/track operation of any motor vehicle by the public within the reserves is unlawful.

5.2.4 Maintain vehicle access for gem fossickers as far south as Donnelly's Creek, either through gating of the Leprena Track at this point (or at a suitable point further south), or if the track is gated north of the creek, by providing suitably authorised fossickers with keyed access.

5.2.5 Continue to provide access to Southport Lagoon through the conservation area on the basis of a substantial upgrade/reroute of the Lagoon Track (see Map 6). This track is to be maintained as a high clearance 4WD track.

map 7 triangle of damage

- 5.2.6 Establish the Lagoon Track initially as an un-gated access point. Monitor use and, for the first five years, formally review it at the end of each summer. If vehicle use is not substantially confined to the track and campground then management options will be considered based on the useage and associated impacts. Consideration should also be given to introducing seasonal closures.
- 5.2.7 When appropriate, issue permits authorising holders to operate conditional registration vehicles on the Lagoon Track. Monitor use and if, after two years, it is not confined to the track and campground then re-consider the issuing of such authorities.
- 5.2.8 Establish boat launching and camping facilities on the edge of Southport Lagoon at the end of the Lagoon Track (see Sections 5.3 and 5.4). This measure will ensure boaters and campers still have access to favourite fishing and camping locations such as the spit.
- 5.2.9 Assess and implement necessary rehabilitation measures on the tracks closed under this plan (see Section 3.3).
- 5.2.10 Work closely with Forestry Tasmania (see prescription 4.5.2) and private landowners to ensure the vehicle restriction measures set out in this plan are implemented and that the needs for management access, particularly for fire management purposes, are integrated with the proposed public closures.
- 5.2.11 Work with Four Wheel Drive Tasmania and other interested organisations to attempt to find an alternate 'mud running' experience.

5.3 Boating

Most boating around the reserves is associated with fishing. Southport Lagoon, particularly the western and northern sectors, has long been known for flounder fishing. Other fish species caught within the lagoon and the lagoon mouth include flathead, salmon and garfish. Several locations around the lagoon are currently used for launching of dinghies, brought in by off-road vehicle users, either by trailer or on top of their vehicles. The northern end of the spit near the lagoon mouth is favoured because it provides immediate access to deeper water, although the tidal current can be very dangerous during tide changes.

The towns of Southport and Recherche Bay are used for boat access to ocean beaches on the coast of the three reserves. There is some danger in navigating the mouth of Southport Lagoon due to strong tidal sea flows and heavy seas. As a result, only a few boats gain access to the lagoon from the seaward side.

Some visitors to the Ida Bay State Reserve arrive by dinghy from pleasure boats anchored at Deephole Bay, or within the Lune River estuary.

Management Issues

Vehicle use restrictions in the southern end of the conservation area (see Section 5.2) raise the need to consider new arrangements to launch a dinghy on to the lagoon and go fishing.

The proposed 'launching facility' will consist of a suitably graded and hardened vehicle standing area near the lagoon edge to facilitate lifting a 'car-topper' dinghy off a vehicle top or tray and carrying it to the water. A formed ramp is not planned.

The Lagoon Track is to be made and maintained as a high clearance 4WD track, not designed or suitable for bringing in boats on trailers.

Boat speeds in parts of Southport Lagoon are regulated under the Marine and Safety (Motor Boats and Licences) By-Laws 1998. However, speeds across the whole lagoon should match the requirements of user safety as well as the protection of wetlands environments, particularly the waterfowl, shorelines and other values. An expert panel consisting of representatives from DPIW, TAFI, MAST and PWS has considered the protection of natural values and issue of safe boating in the lagoon and has made ten recommendations (see section 2.4) including: a boat speed limit of five knots, a boat size limit of 14 foot and 15 horsepower, and a ban on personal watercraft.

There may be a need to implement further boat speed restrictions if speeds are shown to be adversely affecting waterfowl in the future.

Prescriptions

- 5.3.1 Subject to an environmental impact assessment provide a single, vehicle based dinghy-launching point onto Southport Lagoon at the end of the Lagoon Track (see Map 6).
- 5.3.2 Consult with, and act upon the advice of, Marine and Safety Tasmania about appropriate risk mitigation measures with respect to the dangers of operating small boats on Southport Lagoon and their impacts on the environment. Consider personal water craft, boats that enter the lagoon from the sea as well as those launched from the Lagoon Track camping area. Develop a strategy and mechanisms for the program's successful introduction and effectiveness, based on the recommendations of the initial investigation.
- 5.3.3 Encourage boat users to observe boat safety, protection of fauna (especially waterfowl) and shorelines in determining boat speeds, to observe the maximum speed of 5 knots, a boat size limit of 14 foot and 15 horsepower, and to comply with appropriate boating regulations.
- 5.3.4 Install channel markers in appropriate locations for the protection of vulnerable habitats from boating activities.
- 5.3.5 Implement an awareness program for boat operators that consists of signs that include maps and air photos to indicate the location of restricted areas, speed limits and channel markers and post the GPS coordinates of the above features on an appropriate web site.
- 5.3.6 Encourage visitors landing in the State reserve from pleasure boats to be responsible with respect to fire lighting, alcohol consumption and litter removal.

5.4 Camping

There are several destinations for camping within the conservation area. Currently the most popular sites are the northern end of the spit and just south of Blackswan Lagoon, although a series of less-frequented campsites are scattered chiefly around the edge of Southport Lagoon. While most sites are accessed by vehicle some visitors use boats to camp on the islands of the lagoon and also the beaches on the northern side of the lagoon mouth.

A number of structures have been constructed in the conservation area at some of these camping locations.

Management Issues

Vehicle use restrictions in the southern end of the conservation area (see Section 5.2) raise a need to consider new arrangements for facilitating camping activities.

Localised areas of vegetation loss and damage is associated with camping sites. This is particularly evident on the fragile sand landscapes of the spit. The bulk of the impact is caused by vehicle and trail bike use, firewood collecting and camp-site clearing.

The construction of shelters in the conservation area is unlawful. Such structures usually fail to meet minimum construction standards and may pose safety risks. They also tend to exclude other visitors from using the sites. It is however evident that the hut known as Half Way Creek Hut on the eastern edge of Southport Lagoon (at the end of Bodribb Track – see Map 6) is the focus of strong social linkages from within the local community.

Prescriptions

5.4.1 The designated camping areas within the conservation area are as follows:

- at the northern end of the spit for those who reach the area by boat or foot. Note, this campsite will only be established subject to an appropriate risk analysis undertaken by the PWS;
- on the shore of the lagoon immediately north of the sea entrance to Southport Lagoon for those who reach the area by boat or foot;
- at and around the site of the Half Way Creek Hut for those who reach the area by boat or foot. Note, this campsite will only be established subject to an appropriate risk analysis undertaken by the PWS; and
- at the end of the Lagoon Track for vehicle based camping.

No camping is permitted in the conservation area outside of these designated areas.

5.4.2 Develop a new camping area at the designated area at the end of the Lagoon Track, including the provision of toilets and designated dinghy launching area (see prescription 5.3.1).

5.4.3 Camping is generally not permitted in the State reserve unless, on the basis of a clearly documented demand, an application is approved to develop specific camping facilities within either the Visitor Service or the Recreation zones.

5.4.4 No camping is permitted in the historic site.

5.4.5 Fires may only be lit at designated campsites using wood brought in from outside the reserves. Encourage campers to use fuel stoves rather than fires (see prescription 3.1.6).

5.4.6 Firewood collection will not be permitted in the conservation area.

5.4.7 Remove all illegal structures with the exception of the Half Way Creek Hut. Undertake an assessment prior to reaching a decision on this hut's retention. If the hut fails to meet minimum acceptable standards under the Esperance Planning Scheme, the Building Code of Australia, and the Australian Standards for Waste Water, or, alternatively an upgrade

pathway to meet them cannot be identified, then the hut will be removed.

- 5.4.8 If the Half Way Creek Hut is retained then investigate the need for, and possibility of, developing a partnership with a community group to manage the Half Way Creek Hut.

5.5 Hunting

Since the proclamation of Southport Lagoon Conservation Area in 1976, duck and wallaby shooting has continued under permit. Over the last five years, very few permits have been issued. Recreational hunting and crop protection activities are permitted on Crown tenures adjacent to the conservation area and State reserve.

Hunting has been allowed by permit only in the conservation area since its proclamation in 1976. Very few permits have been issued over the last five years.

Prescriptions

- 5.5.1 Subject to sustainability and safety criteria, the hunting of duck under written authority and appropriate licence is a permitted activity within the conservation area only.
- 5.5.2 Any future limitations placed upon hunting because of sustainability issues or associated disturbance to non-target species will be based on the best available scientific knowledge.
- 5.5.3 Except for approved management purposes, the taking of ducks will only be authorised during daylight hours.
- 5.5.4 Hides may not be constructed in the conservation area.

5.6 Bushwalking

Bushwalking is undertaken primarily in the State reserve and on the northern end of the conservation area. Walking tracks provide an opportunity to appreciate the scenic values of the coastal and lagoon environments as well as the flora and abundant bird life. Most tracks were originally vehicle tracks and their condition, routing, and marking may not necessarily be best designed for walking.

In the past visitors have usually taken the Ida Bay Railway to Deephole Bay to commence walks. From Deephole Bay they have skirted the coast within a narrow sliver of State reserve or across a road reservation passing through the private block south of Deephole Bay to reach tracks and beaches in the northern part of the conservation area. This latter route remains the most important, traversing open eucalypt forests, tea-tree thickets, heathlands and sedgelands, and provides access to highly scenic coastal views. The track provides access to the viewing area overlooking the historic site (see Section 2.8). With closure of the railway the walk is currently little used.

Management Issues

There may be conflicts between bushwalkers and vehicles using the upgraded Lagoon Track in the future, since this will be the only track open to vehicles. It is not expected to be a substantial problem because of the low numbers of vehicles

expected to be using the track and because they will only be able to travel at low speeds. However, the monitoring of this track proposed in Prescription 5.2.6 will include data on walkers using the track, to determine if there are any problems to be addressed in the future.

Prescriptions

- 5.6.1 Walking track routes and standards will be determined and constructed in accordance with the *Walking Track Management Manual: Environmental and Planning Issues 2004*.
- 5.6.2 Monitor walker usage of the new Lagoon Track, as part of the monitoring program proposed for vehicle usage in Prescription 5.2.6.
- 5.6.3 On the basis of consultation with stakeholders the walking track from the Ida Bay Railway Deephole terminus to the historic site lookout (see Section 2.8) may be partially re-routed to follow the coast from Deephole Bay or alternatively may be marked and upgraded on its present route should the railway reopen and sufficient demand be established.

5.7 Gem Stone Fossicking

Areas adjacent to Leprena Track are very popular with gem stone fossickers (see Section 2.1). Consequently, an area extending west of the Leprena Track south of its junction with South Cape Road has been declared the Lune River Fossicking Area under the Mineral Resources Development (Fossicking Areas) Order 1996. This area is outside the boundary of the reserves. The Lune River area is considered by lapidarists to be one of the best sources of colourful agate and petrifications in Tasmania (Sharples 1994). Those with high clearance vehicles travel down the Leprena Track to access digging sites. Other gem stone fossickers park their vehicles on the northern side of Donnelly's Creek on Leprena Track and access digging sites by foot.

It has been suggested that prior to the declaration of the conservation area, areas within it were quite heavily dug over by fossickers.

Management Issues

Anecdotal evidence indicates that unauthorised collection of gem stones and fossilised fern fragments is still continuing within the conservation area. This activity is destroying a deposit of fossilised fern fragments of scientific value that is currently believed to be poorly reserved elsewhere in the State. The activity is occurring unlawfully and is also causing physical disturbance to the conservation area with visual and environmental implications.

Prescriptions

See applicable prescriptions in Section 2.1.

5.8 Information and Interpretation

With the exception of the knoll overlooking the historic site (see Section 2.8) there are currently few appropriate information and interpretation signs in the reserves.

Aims

The aims for information and interpretation are to:

- identify boundaries;
- inform visitors of conservation status and conservation values; and
- identify the recreational pursuits and activities that are appropriate and any restrictions to ensure visitor safety and/or to protect the natural and cultural values.

Prescriptions

- 5.8.1 Use public notices in newspapers and other media, information signs and notesheets to indicate and explain closure of vehicle tracks, camping sites and other specific management strategies. Explanations will focus strongly on the natural and cultural values of the reserves.
- 5.8.2 Place signs at the northern end of the Leprena Track, at the Lagoon Track turn-off, at Southport boat ramp and the boat ramp at Catamaran in Recherche Bay providing visitors with relevant information about the new management arrangements.
- 5.8.3 Use a minimum number of signs in keeping with the self-reliant nature of current recreational activities.
- 5.8.4 Use signs or totems at designated camping sites to indicate that camping is permitted and any strategies or restrictions which apply.
- 5.8.5 Prepare a new information note sheet for the three reserves explaining natural and cultural values, access, campsites and appropriate recreational use.
- 5.8.6 Employ, if resources permit, a summer ranger for the two summer seasons following approval of this plan to focus on these reserves. The role of this officer will be to provide community liaison and education. This ranger, with the support of permanent ranger staff, will also have more general responsibilities for the implementation of the prescriptions of this plan.

Section 6 Field Operations

6.1 Management Resources

Day to day management of the Southport Lagoon Conservation Area is the responsibility of the Southern Region Manager and field staff, stationed at Huonville. Limited funds and resources continue to challenge the staff's ability to adequately respond to reserve management responsibilities. Management prescriptions for the three reserves must be responsive to these resource constraints.

Prescriptions

- 6.1.1 The prescriptions of this management plan are subject to the provision of funding and other resources sufficient to meet them and may be given priority at the Director's discretion according to resource availability.
- 6.1.2 Prepare a five year works program based on this management plan. It will be reviewed and revised annually based on monitoring and evaluation.
- 6.1.3 Encourage the community, in partnership with Parks and Wildlife Service, to apply for funding for rehabilitation and other projects from external sources such as the Coastcare program.

6.2 Community Support and Liaison

By building the level of community support and liaison the PWS can help ensure the protection of the reserves, particularly the control of recreational vehicle use within the conservation area.

One way of involving the community in management of the reserves is to establish a community based management group to meet several times a year with the PWS. The purpose of meetings would be to discuss management priorities and programs, to discuss problems or conflicts, and to encourage community participation in projects.

Aims

The aims of fostering community support are to:

- develop community appreciation of and support for values;
- achieve community ownership through involvement in policy development, planning and on ground management; and
- increase the efficiency of management by encouraging community groups to take responsibility for managing particular activities.

Prescriptions

- 6.2.1 Establish a two tier approach to the management of the reserves, recognising that:
 - there are values of State, national and international significance that need to be managed on behalf of this broad audience; and

- the local community has a stake, and that working closely with the community can reap significant advantages of local knowledge, goodwill and on-ground stewardship.
- 6.2.2 At the first tier the Director of National Parks and Wildlife is the responsible managing authority. The managing authority is responsible for:
- overall management of the reserves and their suite of natural and cultural values;
 - overseeing implementation of the management plan; and
 - coordinating, liaising with and supporting the Management Committee.
- 6.2.3 At the second tier establish a non-statutory Management Committee to undertake the management of functions under this plan as agreed between the Director and the Committee and as approved by the Minister. The Management Committee will be responsible for:
- engaging community users in supporting the overall management strategy;
 - advising the PWS on the management of recreation and commercial uses; and
 - contributing to development and implementation of works programs.
- 6.2.4 Management Committee members will be appointed by the Minister. In selecting members the Minister will consult with the range of stakeholder and community interest groups to ensure broad representation on the Committee.
- 6.2.5 The Management Committee will be made up of seven members selected to provide a balanced range of expertise. The members will be selected to cover the following skills and knowledge:
- a chairperson, skilled in facilitation, mediation and having an appreciation of the significance of the reserve for its users;
 - a person with skills and knowledge of nature conservation issues;
 - a person with skills and knowledge in local government;
 - a person with skills and knowledge in off-road recreational vehicle use;
 - a person with skills and knowledge in other recreational uses of the reserves;
 - a person with business skills and an appreciation of the economic uses of the reserves; and
 - a person with skills in cultural heritage and an appreciation of the cultural heritage of the reserves.
- In addition a Parks and Wildlife Service representative will be nominated by the Director to assist the committee in discharging its functions.
- 6.2.6 The Management Committee's mode of decision making is to be based, where possible, on consensus seeking rather than on an adversarial model. A dispute resolution process will only be employed when it becomes clear consensus is unreachable.

6.3 Monitoring and Research

Aims

The aims of monitoring and research are to:

- improve the inventory and understanding of natural and cultural features and processes;
- assess rates and magnitudes of change;
- improve knowledge and understanding of visitor attitudes and behaviour; and
- assess the effectiveness of this plan and improve management.

Prescriptions

- 6.3.1 Apply the performance indicators set out in Table 6 to test the success of future management. Where necessary, and at the earliest opportunity, initiate baseline surveys to allow appropriate measurement.

Table 6: Key Aims and Performance Indicators

Notes in square brackets indicate the section of the plan containing details on the subject value.

Aim 1	[Section 2.1 Geodiversity] Preserve and maintain sites of geoheritage significance and geodiversity. Performance Indicator <ul style="list-style-type: none">• The spit is intact and generally free of threatening disturbances as a result of human activity. Campsites are not increasing in size, evidence of vegetation damage is acceptably low.
Aim 2	[Section 2.2 Wilderness and Landscape Values] Restore, where possible, natural and landscape values. Performance Indicator <ul style="list-style-type: none">• Visitors to the reserves increasingly appreciate the scenic values of the reserves.
Aim 3	[Section 2.4 Wetlands] Ensure the wetland values of the conservation area are appropriately recognised and protected. Performance Indicator <ul style="list-style-type: none">• Southport Lagoon is nominated for entry on to Environment Australia's Directory of Important Wetlands in Australia.
Aim 4	[Section 2.5 Flora] Conserve and maintain natural diversity and natural ecosystems. Performance Indicators <ul style="list-style-type: none">• Healthy populations of <i>Epacris stuartii</i> and <i>Euphrasia gibbsiae psilantherea</i> are present in the reserves.• All other listed species are free from major threatening processes as a result of human activity.
Aim 5	[Section 2.6 Fauna] Protect threatened fauna species and their habitat. Performance Indicators <ul style="list-style-type: none">• The ground parrot <i>Pezoporus wallicus wallicu</i> and the swift parrot <i>Lathamus discolor</i> are still commonly found inhabiting the reserves.

- Aim 6** [Section 2.7 Aboriginal Heritage] In cooperation with the Aboriginal community, protect and conserve Aboriginal heritage.
- Performance Indicator
- Known Aboriginal sites are free of threats arising from human activity.
- Aim 7** [Section 2.8 Historic Heritage] Protect, conserve and interpret the significant historic heritage of the reserves.
- Performance Indicators
- The Ida Bay Railway remains a substantially intact working railway.
 - The George III monument is in good condition and continues to be appreciated while not actually being directly visited.
 - The visual setting within the reserves of the 1792 and 1793 French visits to the area remains intact.
- Aim 8** [Section 3.1 Fire Management] Protect the reserves assets and maintain or improve nature conservation values.
- Performance Indicator
- Fire management strategies, designed to sensitively maximise protection to historic assets and maximise the survival of *Epacris stuartii* and *Euphrasia gibbsiae psilantherea* are being implemented
- Aim 9** [Section 3.5 Reserve Status] Provide a suitable conservation status for the conservation area.
- Performance Indicators
- The conservation area has been reclassified as a State reserve.
- Aim 10** [Section 5.2 Recreational Vehicle Use] The use of recreational vehicles within the reserve has been placed on a sustainable footing.
- Performance Indicators
- Recreation vehicle use in the southern part of the conservation area has halted.
 - The Lagoon Track has been redeveloped to provide sustainable access and camping on the Lagoon edge.
 - Visitors to the reserve appreciate the new access arrangements and are satisfied with the facilities.
- Aim 11** [Section 6.2 Community Support and Liaison] Community ownership has been fostered through involvement in policy development, planning and on ground management
- Performance Indicators
- An active Management Committee of key stakeholder and community interests is working cooperatively with PWS.
- Aim 12** [Section 6.3 Monitoring & Research] Improve the inventory and understanding of natural and cultural features and processes.
- Performance Indicators
- The reserves have been resurveyed for fauna using a repeatable technique.
 - The reserves have been resurveyed for flora using a repeatable technique.

- 6.3.2 All research requires appropriate authorities.
- 6.3.3 Researchers will submit to the PWS not less than three copies of all work produced during the period of the research. Submissions must be made within six months of completing fieldwork unless another period is specifically agreed to.
- 6.3.4 Authorities for the collection of material within the reserves will not be issued where it is possible and appropriate to collect the material outside.
- 6.3.5 Permit only research that does not have significant adverse effects on the natural, cultural, or aesthetic values of the reserves.
- 6.3.6 Obtain the agreement of the Tasmanian Aboriginal community for any research involving Aboriginal heritage.

6.4 Plan Review

Prescriptions

- 6.4.1 This management plan may only be varied in accordance with the procedures set out in the *National Parks and Reserves Management Act 2002*.
- 6.4.2 Review this plan ten 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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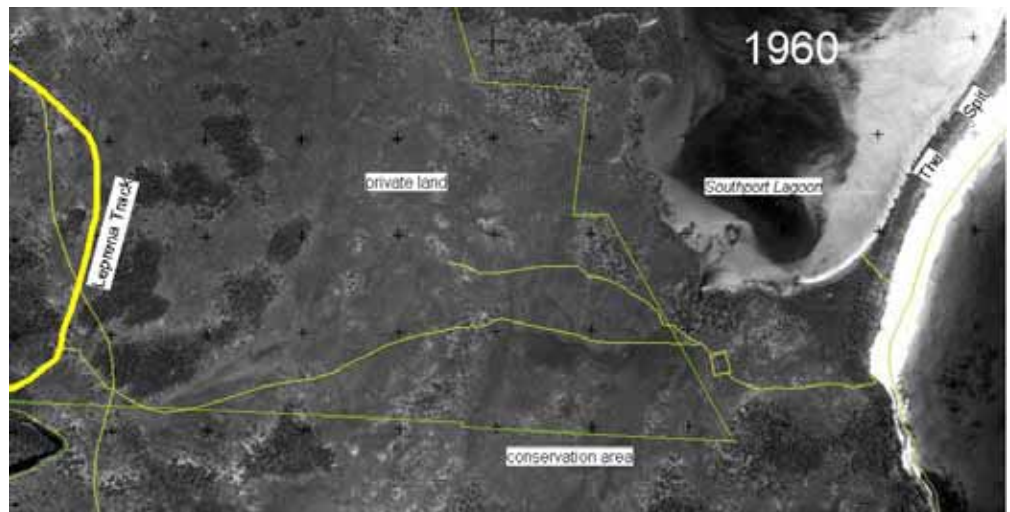
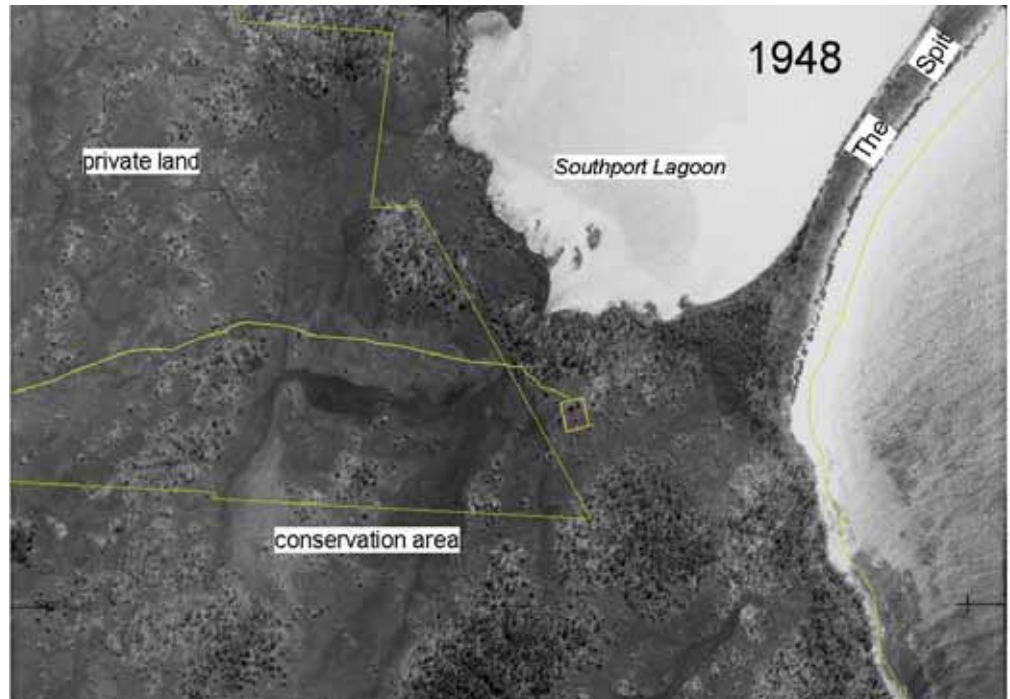
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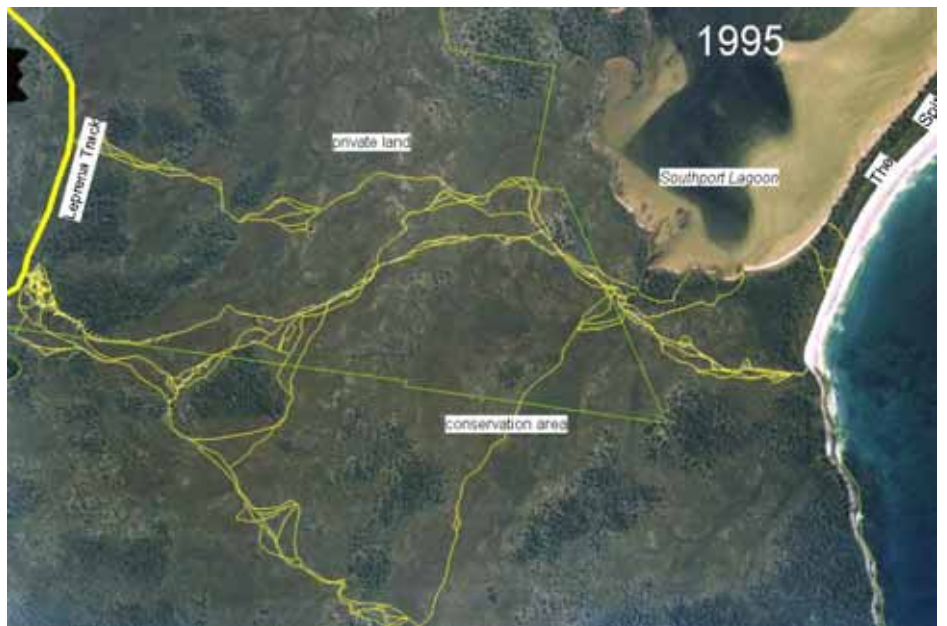
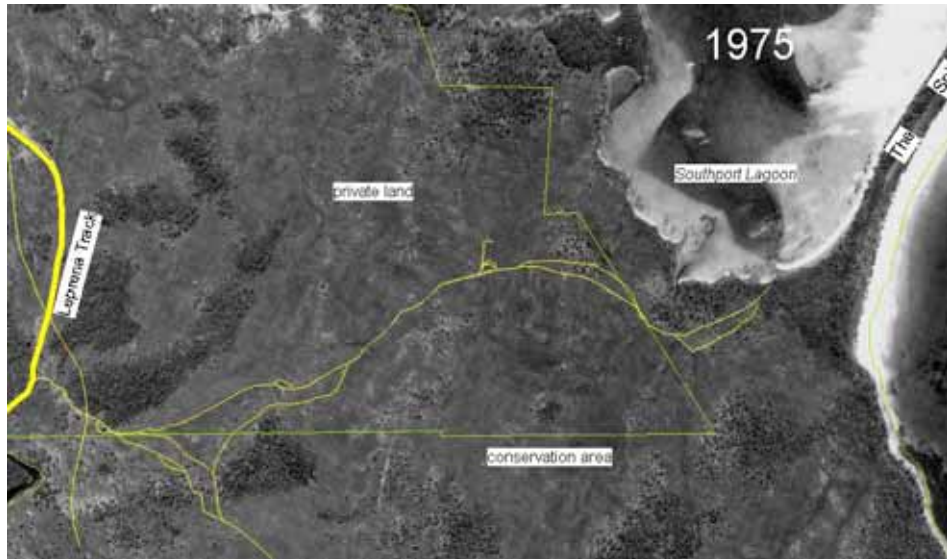
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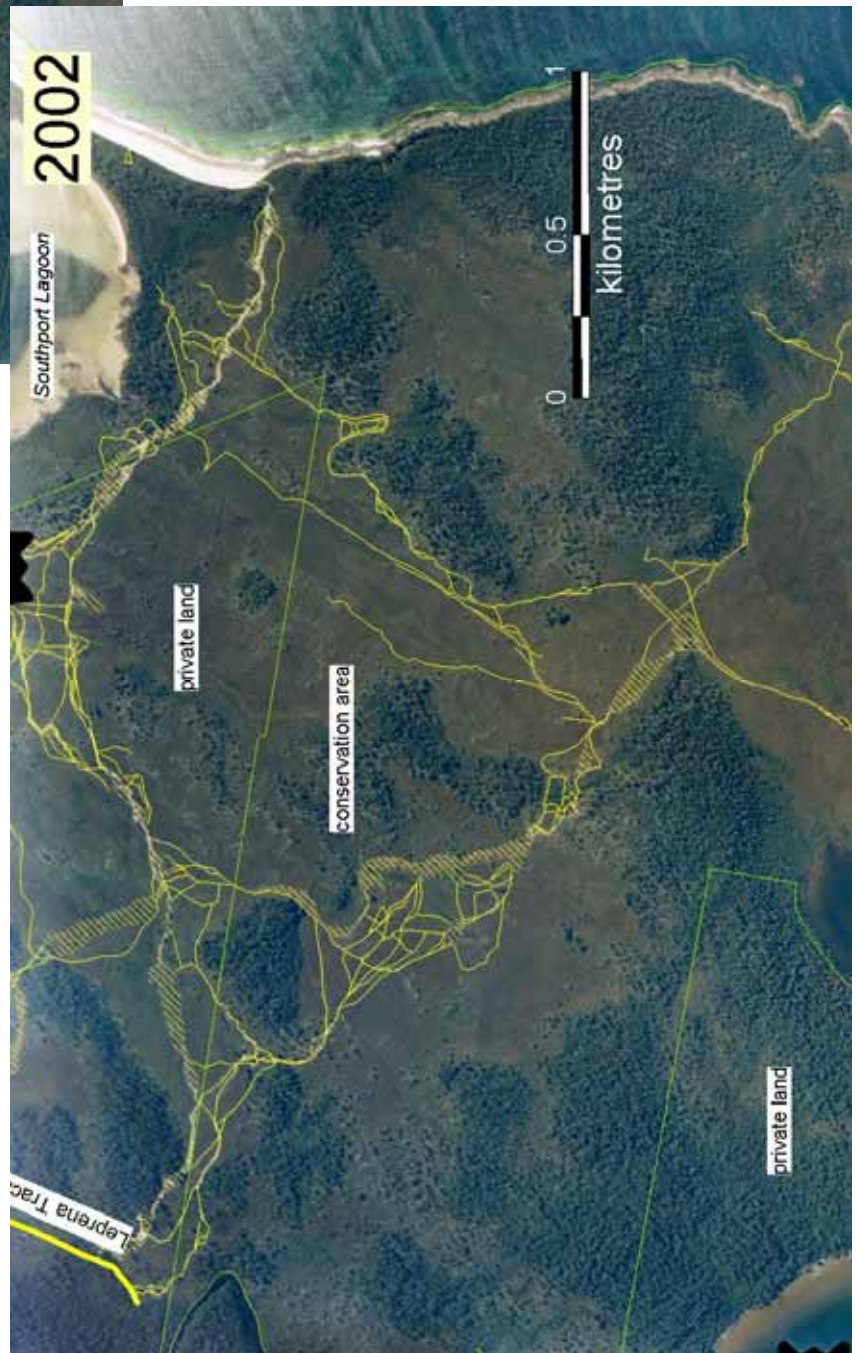
Appendix 1 Aerial Photography

The following series of aerial photos illustrates the extent of proliferation of tracks in the 'triangle of damage' (see Section 5.2). The visible tracks have been digitally enhanced so they can be more easily seen, but the final photo is also shown without digital enhancement.



Southport Lagoon Conservation Area, George III Monument Historic Site and Ida Bay State Reserve Management Plan 2006





Appendix 2 Options Analysis

A range of approaches to managing the Southport Lagoon Conservation Area can be identified. While the list is not intended to be exhaustive, it is intended to capture the major possibilities. The list includes:

1. no change to vehicle management,
2. better manage vehicle access along existing access lines,
3. restrict vehicle access to an alternate track to the spit,
4. restrict vehicle access to an alternate track to the lagoon, and
5. close vehicle access to the entire area.

Each of these options is considered in detail below, including an estimated cost analysis. The costs are indicative estimates only.



1. No Change to Vehicle Management

This is the minimalist option. Some people consider that, given the size of Tasmania's reserve system, it is appropriate that certain areas be 'sacrificed' to user groups such as recreation vehicle drivers for intensive use. While the resulting damage is not embraced, it is recognised that if it meets a social need, and provides a location and outlet for activities, then the case is made stronger for taking a tougher line in other parts of the reserve system. The problem is deciding which are the appropriate areas to sacrifice. All areas of the reserve system have special and unique values – just as this area does. The management objectives for the reserves system, defined in statute, acknowledge this fact.

The vehicle driving experience available at Southport is also unique and truly challenging – some would even say treacherous. Except in mid-summer in a dry year visitors normally venture into the area in convoys of two or three vehicles at a

minimum. As one vehicle becomes trapped in the mud the other vehicles are used to assist winch it free. The extreme challenge of this experience is what makes it popular. It is a challenge that is not easily replicated in another location on the Crown estate.

Advantages

- This is the cheapest option for the PWS, requiring no additional level of funding.
- It satisfies a demand for a location for challenging 4WD driving.

Disadvantages

- To ignore the many natural and cultural heritage degradation issues is to ignore both State and Commonwealth statutory management obligations.
- The option lacks environmental sustainability.
- The option also lacks community social sustainability — values are changing and the acceptability of some recreational activities is declining.
- The option is incapable of legal endorsement in a management plan, particularly because of the unresolved private land-holder issues.

2 Better Manage Vehicle Access along Existing Access Lines

This option embraces the ‘sacrificial area’ notion, but approaches it with greater environmental, social and legal responsibility. This approach was advocated in the 1997 draft plan. In the past a wide-range of factors such as inadequate signposting, marking and routing of tracks and the absence of ongoing maintenance of these tracks has been blamed for the extent of damage to the natural environment. A possible way forward is to build upon established successes to keep damage within acceptable limits. There are at least three approaches that have demonstrated success within the conservation area, being seasonal closure, the establishment of formed creek crossings and the formation of working partnerships with recreational vehicle associations.

Since 2000 the conservation area has been closed through the winter months from 15 May to 1 September. This closure has been implemented by public notice and placement of a locked gate on the Leprena Track at Donnellys Creek. The measure has enjoyed a high level of respect and the gate has not been vandalised, nor have alternate routes into the conservation area been widely established. At present, with the track opening on 1 September, the area is still very wet and damage from vehicle movements is still high. A simple, inexpensive management improvement would involve extending the seasonal closure. Opening could be delayed through to the weekend following the Show Day holiday or even to just before Christmas and closure could be brought forward to the end of Easter. Also the introduction of short-term closures during the summer months immediately following major rain events could be considered.

A formed crossing has been built on a major (but un-named) creek on the spit Track (see Figure 1). A simple structure, consisting of parallel logs laid over the surface decked with rough sawn timber, the crossing has resulted in extensive natural rehabilitation of extensive areas of braiding. The crossing has been in place for several years and is now in poor condition, however it continues to be used by most visitors. Maintaining this structure and building several more may address the most severe degradation issues by allowing vehicles movements to concentrate on specific narrow corridors.



Figure 1: Formed Creek Crossing

RV clubs, particularly the peak body, Four Wheel Drive Tasmania, have for some time recognised the severe degradation problems within the conservation area. Four Wheel Drive Tasmania has repeatedly offered to develop a partnership approach with the PWS to place use on a more sustainable footing. This approach has already been successfully used in the conservation area. The formed creek crossing alluded to in the previous paragraph was largely built using volunteer labour provided by RV clubs. A more all-embracing partnership approach may take a variety of directions and could be overlain over several of the other options presented in this paper. However a mainstay of a good working relationship would have to be a high level of retention of the existing driving experience.

Other approaches that have proven effective in the Arthur-Pieman Conservation Area (APCA) include selective fencing and the introduction of an authority (permit) system. Selective fencing of Aboriginal heritage sites and specific dune formations has enjoyed a high level of respect in the APCA, with the level of fence vandalism being low provided it remains obvious they are not intended to deny access to destinations. Recently at Southport a trial fencing of a small area with special values has been undertaken. The authority system within the APCA ensures users maintain regular contact with the management authority, providing the opportunity to provide seasonally or visit specific advice on such matters as route availability, special precautions and special prohibitions. The authority forms a 'contract' between the holder and the management authority, and provides a clear basis for enforcement.

The major legal underpinning necessary to make this option viable would be the resolution of the private land-holder issues. It is likely the Crown can only solve these issues through purchase of land.

Advantages

- The major advantage of this option is that, if done well, satisfying the requirements of responsible users will largely counterbalance the disenfranchisement of the irresponsible users.
- Depending upon how successful a partnership can be forged with RV groups the option may achieve good value for money in terms of on-ground works.

Disadvantages

- This option, like the first, is not a real option unless the PWS squarely confronts the issue of crossing the private land. If the option were to be seriously pursued it likely requires the Crown to purchase at minimum one, but preferably, three blocks of land. This catapults the option from a reasonably low cost one to a high cost one.
- To keep environmental damage within limits the option is dependent upon regular maintenance, involving a significant recurrent budget expenditure.
- To create and maintain a strong partnership the option is heavily reliant on ongoing staff effort, with further significant recurrent budget implications.
- Clear limits on numbers are also likely to be necessary, which will mandate a permit system, requiring much further staff time to implement.
- Building structures such as bridges inevitably raises duty of care issues, which would need to be carefully assessed. These issues may be able to be largely dealt with by introduction of an authority system.

Costs

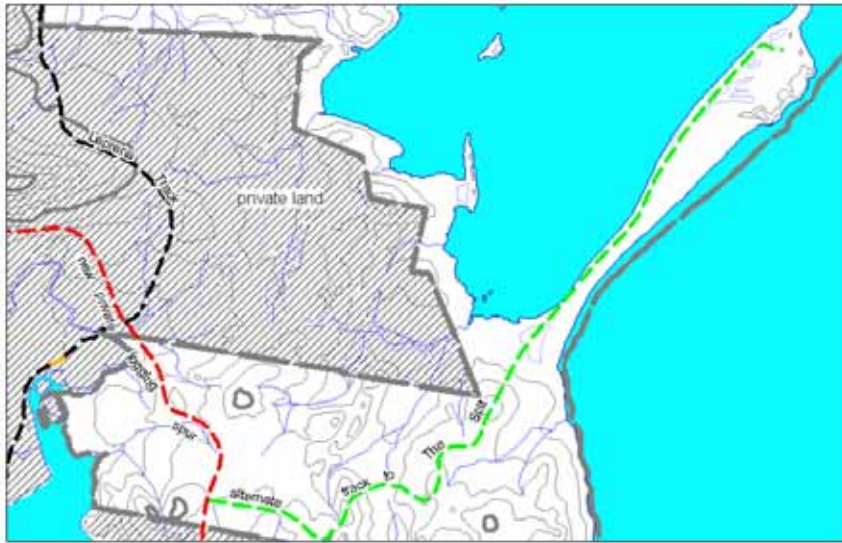
Capital Costs	
Purchase of land	150,000 to 450,000
Vehicle purchase (ATVs)	30,000
Track improvements	100,000
Total Capital Costs	\$280,000 to \$580,000
Recurrent Costs	
Vehicles replacement (ATVs)	4,000
Recurrent track maintenance costs	16,000
Staff time (1/3 FTE with on costs)	22,000
Total Recurrent	\$42,000

3. Restrict Vehicle Access to an Alternate Track/Route to the Spit

In the 1997 draft management plan a principle prescription had been the relocation of the spit Track further south so that it no longer passed across the private land and was instead within the conservation area. However, this option was rejected following inspection of a proposed route by specialist geoheritage, flora, and Aboriginal officers who determined that the long sections of deep peat soils and vegetation between the dolerite knolls on the proposed route could not cope physically with vehicle use. It was considered any new track development on the route proposed would only increase the environmental degradation problems in and around the conservation area.

Development of the new logging spur through the southern portion of the conservation area may have presented a new opportunity for development of an alternate track. An alternate route to the spit could enter the conservation area via this track, passing through the conservation area to a point just short of the boundary to the freehold block, before heading easterly across a ridge, saddle and second ridge to the base of the spit. A route can be identified keeping exclusively to higher ground and not intersecting a single drainage line – a critical factor in this terrain for minimising maintenance and maximising long-term sustainability (see Map 1).

Once vehicles are on the spit it is difficult to conceive of a simple way to put the transit to the mouth on a more sustainable footing. Sand landscapes are always fragile and prone to major environmental damage as a result of human use. They also usually contain many Aboriginal heritage values. The ocean side is almost certainly the more robust, being under constant high-energy assault from wave action. However at high tide vehicles are forced to the top of the beach, and are likely to be contributing to vegetation and bird breeding habitat damage. As well it is not possible to transit more than half the length of the spit on the ocean side (see Figure 2). The resultant damage to the lagoon side (see Figure 2) is severe in places. The only acceptable solution would be to harden a track along the entire length of the lagoon edge (see Map 1). This would result in the direct destruction of areas of salt marsh habitat. The increased use of the area would require the construction of toilets and hardening of camp-sites but the environmental and Aboriginal heritage impacts of such a major construction exercise are likely to be constraints.



Map 1: Potential New Track to The Spit



Figure 2: The Lagoon and Ocean Sides (respectively) of the Spit

Advantages

- If successful the option promises the removal of existing issues with visitors crossing private land.
- The route is almost certain to be superior to the existing one in terms of long-term sustainability, suffering less problems with braiding, particularly through the elimination of creek crossings.

Disadvantages

- The major disadvantage of this option relates to the long-term environmental consequences for the destination area. If this option was implemented the spit would become a major camping destination, requiring progressively more supporting infrastructure development. The area is not suited to this purpose, being a fragile physical environment of limited extent.
- To re-route the track requires new environmental and cultural heritage damage before environmental repair can occur in the broader landscape.
- The capital cost to build an environmentally sustainable track will be high as the route is mainly across areas covered with peat soils.
- This option is heavily reliant on a determined staff effort to ensure it is the only route used, with significant recurrent budget implications.
- The existing forestry spur, before it enters the conservation area, passes through another private block, although Forestry Tasmania currently owns it.

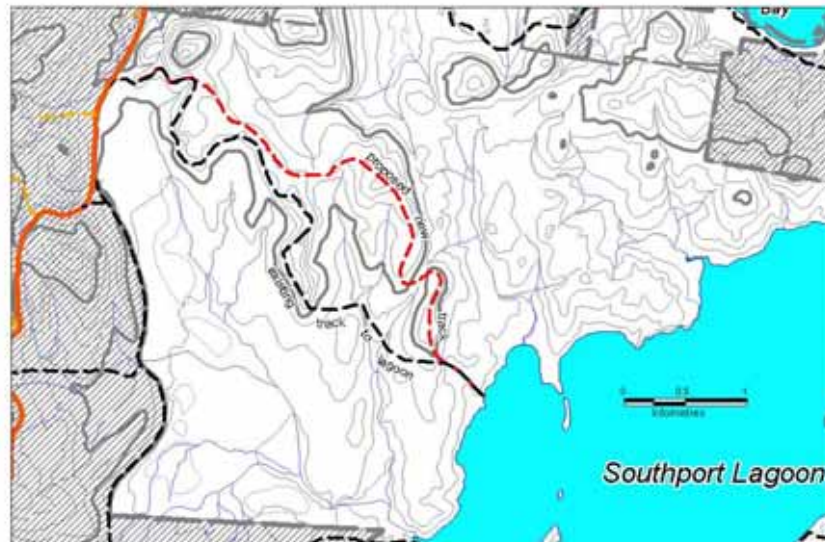
Costs

Capital Costs	
Track Construction Costs (7 km)	210,000
Toilets and camp area hardening	70,000
Vehicle purchase (ATVs)	30,000
Total Capital Costs	\$310,000
Recurrent Costs	
Vehicles replacement (ATVs)	4,000
Recurrent track maintenance costs	16,000
Staff time (1/3 FTE with on costs)	22,000
Total Recurrent	\$42,000

4. Restrict Vehicle Access to an Alternate Track to the Lagoon

A track known as the Lagoon Track runs from the Lune River Road through the conservation area in a south-easterly direction to the western shore of Southport Lagoon. The track is thought to have been originally created to facilitate mineral exploration activity. Currently it runs through several poorly drained areas with overlying peat soils, and has several creek crossings – as a result it is in poor condition. An alternate 5 km re-route for this track is possible, extending across a series of ridge-lines (see Map 2). This alternate route is almost entirely located across areas with shallow mineral soils over a hard shale base. No creeks are crossed for its entire length.

The terminus of this track on the edge of the lagoon could be developed as the principal locus of visitor activity in the reserve. All other access points to the conservation area could be closed to the driving public. The chosen location is supportive of this activity. A combined desktop and field based examination has revealed no conflicting values. Construction of a high-clearance four-wheel drive track would present no major technical difficulties. While Aboriginal heritage values are found along the dry ridge-tops in this vicinity, field examinations have revealed no major conflicts. The location enjoys high scenic amenity with excellent views across the water. The area is flat enough for the development of a camping area.



Map 2: Proposed New Track to Lagoon Edge

Dinghies can be easily launched at most states of the tide. There is a channel with good water depth that comes through the mouth and swings around the perimeter of the lagoon in an anti-clockwise direction, going past this proposed location not far offshore. Because the way to the spit, just inside of which are the best fishing spots, is not a straight line there may be some navigation issues. Navigation markers may be required.

If campers still wish to camp at the spit they may, with relative safety, use a dinghy to move themselves and their camping equipment across to the other side of the lagoon.

Advantages

- This option provides a high level of access to the lagoon, and if the track is built to a 'high clearance 4WD' standard, continues to preserve a 4WD driving experience.
- The capital cost of this option could be spread over several years, with progressive development of the camping area – although this approach is not recommended if at all possible.
- The route is almost certain to be far superior to all other existing ones in terms of long-term sustainability, having mostly a hard natural base and a total absence of creek crossings. Both construction and maintenance costs are expected to be much lower than for the proposed new track to the spit.
- Once the site has become properly established, and access to the southern parts of the reserve has been effectively stopped, the area can be patrolled using existing vehicles. ATV's may still be required initially.
- All the very sensitive areas of the conservation area are protected from vehicle access.
- The option is likely to garner reasonable community support since it provides for responsible access and use.

Disadvantages

- To re-route the track requires new environmental damage before environmental repair can occur in the broader landscape.
- The option fails to provide direct access to the most desirable destinations, and preserves only a 'shadow' of the driving experience offered by the southern end of the conservation area.
- This option requires not only the capital cost involved to construct the track, but is heavily reliant on a determined staff effort to ensure it is the only route used. It is however almost certain this effort can taper off fairly quickly.

- Increased cross-lagoon boat traffic may have flow on environmental impacts because of propeller damage to bottom structure. Keeping boats within the existing channel, which has good depth, would likely mitigate this.

Costs

Capital Costs	
First year - Track Construction Costs (4.5 km)	70,000
First year - Vehicle purchase	30,000
Subsequent years - Camping area establishment	70,000
Total Capital Costs	1st year \$100,000 subsequent yr \$70,000
Recurrent Costs	
Recurrent maintenance costs	5,000
Staff time (1/3 FTE with on costs)	22,000, scaling back to 10,000
Total Recurrent	\$27,000 scaling back to \$15,000

5. Close Vehicle Access to the Area

Closure of the area to recreation vehicle access is one way of dealing with all the problems associated with the current patterns of use. This approach would be likely unpopular with recreational vehicle associations, as well as with many four-wheel drivers in the wider community. Negative response to closure of the area must be balanced against other groupings in the community who would applaud such an approach to management.

From a practical point of view this option is probably quite achievable in the long-term, given that there are only a few places where you can get a vehicle in. At present the chief access point is the Leprena Track, which can be blocked off reasonably effectively. The other established route in is on the new private forestry road through the southern end of the conservation area. Public access is denied by two locked boom gates, both of which are difficult to get around. Considerable pressure, particularly initially, would exist to develop new routes in. The intensive forestry activity between the South Cape Road and the Leprena track is probably making such avenues of access easier.

Advantages

- All issues associated with the current patterns of recreation vehicle use are removed.

Disadvantages

- Significant community antagonism may result.
- This option is totally reliant on a determined staff effort to ensure it is effective. While the degree of effort will be capable of fairly rapid tapering, the need for an ongoing component is anticipated.
- Responsible users who wish to recreate in the area will be disenfranchised.

Costs

Capital Costs	
Vehicle purchase	30,000
Total Capital Costs	\$30,000
Recurrent Costs	
Maintenance costs	10,000, scaling back to 2,000
Staff time (1/3 FTE with on costs)	22,000, scaling back to 10,000
Total Recurrent	\$32,000 scaling back to \$12,000

Comparative Analysis of Options

As indicated, option 1 – the no change option, is not a real option. The Crown has no basis within its environmental, social and legal responsibilities to continue to ignore the current issues associated with this use. On the basis of this analysis four options remain as follows:

2. better manage vehicle access along existing access lines,
3. restrict vehicle access to an alternate track to the spit,
4. restrict vehicle access to an alternate track to the lagoon, and
5. close vehicle access to the area.

While an initial assessment of the advantages and disadvantages of each option has been undertaken, this section attempts further analysis of their relative merits, based on a test of consistency with statutory management objectives, a further cost comparison, based on a triple bottom-line approach and a test of practicability.

Statutory Management Objectives

The statutory management objectives for a conservation area with specific significance for this options analysis are as follows:

- to conserve natural biological diversity;
- to conserve geological diversity;
- to preserve the quality of water and protect catchments;
- to conserve sites or areas of cultural significance;
- to protect the conservation area against, and rehabilitate the conservation area following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the conservation area’s natural and cultural values and on assets within and adjacent to the conservation area; and
- to encourage appropriate tourism, recreational use and enjoyment (including private uses) consistent with the conservation of the conservation area’s natural and cultural values.

These objectives have been built into a simple matrix in Table 1 below.

Option	2. better manage existing	3. alternate track to Spit	4. alternate track to lagoon	5. close vehicle access
biology	medium	low/medium	medium/high	high
geology	medium	low	high	high
water	low/medium	high	high	high
cultural sig	medium	low	medium/high	high
protect/rehab	medium	medium	high	high
approp tourism/rec	medium	medium	high	medium
OVERALL	medium	medium/low	medium/high	high

Table 1 - Consistency with Statutory Management Objectives

key: low = low consistency, high = high consistency

As can be seen from this analysis, option 5 has the highest consistency with the statutory management objectives. Options 4 ranks next, while option 3 ranks as the least consistent with the statutory objectives – largely on the basis of the predicted future damage that would occur to the fragile landscape of the spit.

Cost Comparison

The estimates for the five options are summarised in Table 2 below. It must be stressed that the cost estimates are indicative only. A triple bottom line approach has been adopted which includes economic, social and environmental dimensions.

Option #	2. better manage existing	3. alternate track to Spit	4. alternate track to lagoon	5. close vehicle access
Start-up Capital \$:	280,000	310,000	100,000	30,000
Additional Capital \$:	300,00		70,000	
Recurrent \$:	42,000	42,000	27,000	32,000
Reducing to \$:	42,000	42,000	15,000	12,000
Social Cost	low	medium	medium	high
Environmental Cost	medium	medium/ high	low/ medium	low

Table 2 – Triple Bottom Line Cost Comparison

As can be seen option 5 is by far the cheapest in dollar terms and in environmental cost. The option’s high social cost means pursuing it is dependent upon political support, and a successful outcome is far from assured.

The capital dollar costs of options 2 and 3 are comparable and are high, as are their recurrent costs. In many ways the recurrent costs of project work is equally or more important than the capital costs, since it is recurrent budgets that have seen the biggest squeeze in recent years. Even modest recurrent cost increases such as these have major implications for the field centre budgets. Project money for capital works is often easier to source. These options all have medium to high environmental cost.

Option 4 has some clear advantages. Apart from option 5 it has the lowest capital and recurrent costs. The social cost is medium – while there will be some losers there will also be some big winners, particularly for regional tourism. The environment cost is likely to be in the low to medium range.

On the basis of this analysis it appears that option 4 or option 5 emerge as the front runners. It is however likely that option 4 will result in a much higher level of community support.

Practicability

While cost, particularly recurrent cost, is a central plank of practicability, and has been considered above, there are many other aspects to a practicable solution. Some of these are listed in Table 3 below. Again in this analysis options 4 and 5 emerge well ahead, with option 4 looking best.

Option #	2. better manage existing	3. alternate track to Spit	4. alternate track to lagoon	5. close vehicle access
meets duty of care obligations	problematic	problematic	good	good
alignment with current staff skills	problematic	problematic	good	good
ability, in the long-term, to manage without special equipment	problematic	problematic	good	good
alignment with regional tourism image and product	problematic	problematic	good	reasonable
simplicity	problematic	problematic	good	good
level of community support (\$s aside)	good	good	reasonable	problematic

Table 3 – Practicability Analysis

Conclusion

It is believed that option 4, the restriction of vehicle access to an alternate track to the lagoon, emerges as the most appropriate fit with Parks and Wildlife Service responsibilities and aspirations, reserve values and legislated management objectives, the likely level of community support and the Parks and Wildlife Service's financial capabilities.

Appendix 3 RSF Site Classification System

Day Use – Comfort (mid, complex or visitor centre)

Day Use – Comfort visitor sites cater to visitors who stopover for up to two hours to look at features usually on the way to another destination. Such visits often incorporate a drink/meal break, a stretch of the legs or a short walk and viewing natural and/or cultural features that may be accompanied by interpretive signs. Such sites also provide the opportunity for day-long visits and are often associated with family or other social group outing. Activities may include barbeques/picnics, as well as group recreation such as ball games. These sites may also provide a base for beach activities, boating and fishing in adjacent areas. These sites provide a natural (or rural) setting that foster a sense of space and freedom. Visitors to such sites can enjoy for low risk experiences associated with high standard facilities. Hazards are managed to a neutral or moderate level depending on the characteristics of the site and the level of service provided.

Day Use – Get Away (mid or basic)

Day Use – Get away sites provide visitors with the opportunity to undertake one or more nature-based activities in a natural setting. The typical get-away visitor seeks to go beyond the security and comfort of facilities such as toilets, barbeques, picnic benches and shelters, and often undertake walks of two hours or more in duration. Such sites provide experiences in natural settings that foster a sense of space and freedom. Visitors must be prepared to encounter hazards of a moderate to severe nature depending on the site's characteristics and the level of service provided.

Easy Access Camping (4wd basic, 2WD basic, mid or complex)

These campsites are easily accessed and allow visitors to camp with a family group and or with friends. Varying levels of service (basic, mid or complex) are provided in these predominantly natural settings and facilities are managed to ensure they are well kept. The hazard environment is variable. At the basic end hazards may be substantial or severe, while mid or complex sites are maintained at either a moderate level or neutral. The easy access camping experience can be described as social or solitary. For social campers, the social aspect of the camping experience (eg. parties, group games and activities) is as important as the natural setting. In contrast, solitary campers favour small groups and little or no contact with other people. Campsites predominantly serve as a base-camp with activities pursued off site.

Bushcamping Backcountry (basic, mid or complex)

Bushcamper backcountry sites provide visitors with the opportunity to travel and camp in semi-remote bush areas with some facilities provided. Degrees of comfort vary depending on the level of service (basic, mid or complex) and vary from commercial hut-based experiences to those where accommodation is tent-based. The major activity is bushwalking, but may also include rafting, kayaking, fishing and hunting (where permitted). Visitors are expected to be self-reliant and, depending on the site's characteristics and the level of service provided, must be prepared to encounter hazards of a moderate to severe nature.

Bushcamping Remote (basic)

Bushcamping remote sites provide visitors with the opportunity to venture into areas with few, if any, facilities. In these locations, facilities are provided for environmental purposes only. Access is usually on foot but may also be by boat or air and visitors are expected to be self-reliant. Visitors are expected to be self-reliant and must be capable of coping with severe hazards associated with remote areas.

Not Managed for Visitor Services

In these locations, facilities are provided for environmental purposes only. Visitors are expected to be self-reliant and must be capable of coping with severe hazards associated with remote areas.