

Department for Environment and Heritage

Management Plan



Parks of the Coffin Bay Area

Incorporating Coffin Bay National Park, Kellidie Bay Conservation Park,
Avoid Bay Islands Conservation Park, Whidbey Isles Conservation Park and
Mt Dutton Bay Conservation Park

2004



Government
of South Australia

Our Parks, Our Heritage, Our Legacy

Cultural richness and diversity are the hallmarks of a great society. It is these qualities that are basic to our humanity. They are the foundation of our value systems and drive our quest for purpose and contentment.

Cultural richness embodies morality, spiritual well-being, the rule of law, reverence for life, human achievement, creativity and talent, options for choice, a sense of belonging, personal worth and an acceptance of responsibility for the future.

Biological richness and diversity are, in turn, important to cultural richness and communities of people. When a community ceases to value and protect its natural landscapes, it erodes the richness and wholeness of its cultural foundation.

In South Australia, we are privileged to have a network of parks, reserves and protected areas that continue to serve as benchmarks against which we can measure progress and change brought about by our society. They are storehouses of nature's rich diversity, standing as precious biological and cultural treasures. It is important to realise that survival of species in 'island' reserves surrounded by agriculture or urban areas is uncertain, and that habitat links between reserves are essential for their long-term value as storehouses.

As a result of more than a century of conserving nature and cultural items, we possess a "legacy" which is worth passing on to future generations.

There are twelve essentials for the protection of our park environments:

- Recognition that a primary purpose of our national parks system is to conserve the wide diversity of South Australia's native plants and animals and to improve their chances of survival through active wildlife management.
- Recognition that all our parks also protect cultural legacy of relevance to both Indigenous and Non-indigenous people, and that Indigenous people have had cultural association with this land over many thousands of years.
- Freedom to improve our legacy by making additions to the park system -- enhancing existing protected areas and including landscapes and environments containing native plant and animal communities not already protected.
- Realisation that the continuance of our native species cannot be dependent upon island reserves alone but should be provided for in a regional landscape with linkages between natural areas to enhance the prospect of long-term survival.
- Recognition that there is potential for new and useful substances or genetic material to be found in native plant and animals.
- Recognition of economic and social benefits for local communities, which arise from the presence of national parks in their region and the consequent opportunities to offer service for visitors.
- Development of close relationships with the community, so that there is an understanding of the role of parks in conserving native wildlife, cultural items and in providing recreational opportunities.
- Promotion of community participation in making decisions on the management of parks, so that a sense of community ownership of the reserve system may be fostered, and so that parks and surrounding landscapes are managed in harmony.
- Appreciation that those qualities presented to visitors for their use and enjoyment in parks, should be the diversity of plants, animals and landscapes for which the parks were set aside.
- Understanding that development in a park should proceed where it:
 - contributes to the conservation of the environment;
 - provides for better appreciation of the need to conserve the diversity of plants and animals;
 - protects wildlife habitats and landscape (especially vulnerable and threatened species or communities); and
 - is necessary for management of the park.
- Reassurance, in support of our cultural character, that natural areas can survive even though those who care deeply for their survival may never visit them.

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Dutton Bay Conservation Park, Whidbey Isles Conservation Park and Avoid
Bay Islands Conservation Park

2004



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This plan of management has been prepared and adopted in pursuance of Section 38 of the *National Parks and Wildlife Act 1972*.



Government of South Australia

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FOREWORD

The parks of the Coffin Bay area protect coastal and near-coastal areas at the western tip of southern Eyre Peninsula. They range from rocky islands and cliffs exposed to the Southern Ocean to the relatively quiet waters and shores of Coffin Bay. Spectacular dunefields and extensive coastal heathlands give way to dense mallee and remnant sheoak woodland on the mainland, once the domain of Glossy-black Cockatoos.

Although historic landuse, principally livestock grazing, has modified some environments, the parks conserve more than 250 native plant species and over 100 native birds, reptiles and mammals. The islands that make up Avoid Bay Islands Conservation Park, Whidbey Isles Conservation Park and Mount Dutton Bay Conservation Park, and much of the mainland peninsula within Coffin Bay National Park either have no tracks or are regenerating from tracks that have been closed for more than 15 years. As a consequence, the parks preserve valuable coastal wilderness that is rare throughout the entire southern coastline of Australia.

These wilderness values will be retained in the Point Whidbey Wilderness Zone adopted in this plan. Only limited access will be permitted to all islands in order to protect breeding colonies of birds.

The remainder of the park offers a wide range of opportunities for visitors to enjoy wildlife, natural environments and spectacular beaches, both from conventional or four-wheel drive vehicles. Many secluded camping areas, which this plan proposes to improve and upgrade, allow self-reliant visitors to explore the natural wonders of the parks.

Proposals to improve visitor facilities have been developed in this plan with the help of numerous enthusiastic park users, especially those who live locally. Their input to the plan has been invaluable and it is hoped that their continued interest will guide implementation of the planned developments.

The help of volunteers and community groups is acknowledged, especially with regard to the restoration of native vegetation and wildlife habitat in remnant Drooping Sheoak woodland and assistance with walking trail maintenance, habitat monitoring and pest plant and animal control programs.

This plan is now formally adopted under the provisions of section 38 of the *National Parks and Wildlife Act, 1972*.



JOHN HILL

MINISTER FOR ENVIRONMENT AND CONSERVATION



SYNOPSIS

This document is the first adopted management plan for the parks of the Coffin Bay area, incorporating proposals for the effective management of Coffin Bay National Park, Kellidie Bay Conservation Park, Mount Dutton Bay Conservation Park, Whidbey Isles Conservation Park and Avoid Bay Islands Conservation Park. A draft plan of management was first released for public comment in 1990. That plan, although subsequently adopted, was never Gazetted or released, due to the need to incorporate changes in park management, including an agreement to manage a small herd of horses in Coffin Bay National Park and a proposal to proclaim parts of the reserves under the *Wilderness Protection Act 1992*.

A substitute draft plan of management was released for public comment in June 1999, along with a proposal to proclaim the Point Whidbey area and the islands of Avoid Bay Islands Conservation Park as Point Whidbey Wilderness Protection Area under the *Wilderness Protection Act 1992*. Following public consultation, it was decided to not proceed with formal wilderness proclamation, but to designate the proposed area as a Wilderness Zone under section 39 of the *National Parks and Wildlife Act* and to manage it in accordance with the adopted *Wilderness Protection Areas & Zones South Australian Code of Management* (DENR 1994).

The parks of the Coffin Bay area conserve the magnificent coastal scenery of Lower Eyre Peninsula and protect its unique wilderness qualities. These parks contribute to biodiversity conservation in South Australia by protecting large tracts of land capable of maintaining functional ecosystems and providing habitat for populations of significant flora and fauna. Coffin Bay National Park is a popular tourist destination, providing a range of recreational experiences. Regional and state communities derive social and economic benefits from these parks.

To conserve these values, park management will be directed towards:

- utilising world's best practice to develop the parks in a way that protects and showcases their natural values;
- maintaining and enhancing biological diversity by recognising and removing threats, restoring habitats and reintroducing locally extinct species where feasible;
- enhancing visitor experience by the provision of appropriate infrastructure in a sustainable way;
- developing and maintaining partnerships with community and tourism industry groups; and
- protecting the wilderness values of the Point Whidbey area.

This plan identifies the significant physical, wilderness, biological and recreational values of the parks of the Coffin Bay area. The proposed management prescription attempts to balance the protection of natural and cultural values with recreational use and enjoyment of the parks. Protection of key flora and fauna, along with continued pest plant and animal control, are recognised as fundamental management activities. Cultural heritage issues are addressed, with particular reference to native title over Eyre Peninsula.

Recreational issues including vehicle access, camping and day visit areas, walking trails and boat access are considered, providing for a wide range of visitor activities within the parks. Appropriate commercial activities that comply with the provisions of the *National Parks and Wildlife Act 1972* are also discussed.

The plan recognises the significant role of volunteer and community groups participating in park maintenance and management activities. Such assistance is of great benefit to DEH in helping to achieve management goals.

The plan concludes with a summary of management actions, which detail the priority and duration prescribed to each of the proposed activities.

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ABBREVIATIONS AND GLOSSARY OF TERMS

ALRM:	Aboriginal Legal Rights Movement
AMSA	Australian Maritime Safety Authority
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAARE	Department of Aboriginal Affairs and Reconciliation
DEH:	Department for Environment and Heritage
DENR:	(former) Department of Environment and Natural Resources
GIS:	Geographic Information System
IBRA:	Interim Biogeographic Regionalisation for Australia
IUCN:	International Union for Conservation of Nature and Natural Resources (The World Conservation Union)
PIRSA	Primary Industries and Resources, South Australia
SARDI	South Australian Research and Development Institute

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1 INTRODUCTION

This document is the adopted management plan for the parks of the Coffin Bay area. It combines the management plans for Coffin Bay National Park, Kellidie Bay Conservation Park, Mount Dutton Bay Conservation Park, Whidbey Isles Conservation Park and Avoid Bay Islands Conservation Park, which, unless otherwise specified, are referred to together as “the park” or “the reserve(s)”. The reserves have been considered together as they are located in the same geographic area and are used and supported by the local community. The park is located on southern Eyre Peninsula, which falls within the West Region of the Department for Environment and Heritage. The plan outlines proposals to effectively conserve the natural and cultural values of the parks, while providing for public use and enjoyment.

This management plan has been prepared in accordance with the *National Parks and Wildlife Act*. Section 38 of the Act states that a management plan is required for each reserve. A management plan sets forth proposals in relation to the management and improvement of the reserve and the methods by which it is intended to accomplish the objectives of the Act in relation to that reserve.

Having formal community input into public land management is a requirement of the legislation and supported by park managers. A draft plan for the parks of the Coffin Bay area was released for public exhibition in June 1999. At the close of the comment period, 61 submissions had been received. Issues raised in submissions included the managed herd of feral horses, the level of vehicle access to remote areas, the adequacy of camping sites, exclusive use of some areas for commercial tourism ventures and the Point Whidbey wilderness proposal. All these concerns were considered by the Eyre Consultative Committee before going to the SA National Parks and Wildlife Council for further advice and comment. A number of alterations have been incorporated as a result of the community consultation process.

Notice of official adoption is published in the *Government Gazette* and copies of the final plan are made available for sale to the public. Copies may also be viewed on the DEH website at: http://www.environment.sa.gov.au/parks/management_plans.html.

Once a plan of management is adopted, its provisions must be carried out in relation to the reserves in question and no actions undertaken unless they are in accordance with the plan. However, the Act makes provision for amending adopted plans and this process is similar to the one described above.

1.1 Park Description

The parks of the Coffin Bay area are located on and adjacent to the south-western tip of the Eyre Peninsula, approximately 50km west of Port Lincoln. Coffin Bay township is situated between Coffin Bay National Park and Kellidie Bay Conservation Park.

The offshore islands and southern coastline of Coffin Bay National Park are characterised by steep cliffs set against the Southern Ocean. These areas are often subjected to strong winds and high seas, creating spectacular coastal landforms.

The northern coastline of Coffin Bay National Park, Kellidie Bay Conservation Park and the islands of Mt Dutton Bay Conservation Park, lie amongst calmer waterways of Coffin Bay, Port Douglas, Kellidie Bay and Mt Dutton Bay. Sheltered bays and sandy beaches typify the landscape in these areas.

The parks are generally surrounded by sea, however Coffin Bay National Park and Kellidie Bay Conservation Park also adjoin the Coffin Bay township and private agricultural land.

Coffin Bay National Park is a peninsula, accessible via a single road entering the park through the Coffin Bay township. Popular sites, including Point Avoid, Almonta Beach, Avoid Bay and Yangie Bay are easily accessed by conventional vehicles. Beyond Yangie Bay, the park is only accessible to four wheel drive vehicles. Four wheel drive tracks traverse sand dunes, beaches and undulating limestone plains, providing visitors with a sense of adventure. Facilities at popular camping and fishing sites such as Black Springs, Morgans Landing, Point Sir Isaac, Reef Point Lookout and Sensation Beach, encourage self-reliance and promote the minimum impact ethic of the National Parks Code (Appendix A). Vehicle access to the far southwestern portion of the park (eg the Point Whidbey area) has been restricted to preserve its wilderness qualities.

The history of dedication, area and section numbers of each park are provided in Appendix B: Land Parcels.

1.1.1 Climate

The climate of southern Eyre Peninsula is of the Mediterranean type, with changes of weather associated with frontal systems which approach from the south-west. These frontal systems are most active in winter and spring bringing fairly reliable and frequent light to moderate rainfall in these seasons. The southern coastline of the peninsula facing the Southern Ocean is often exposed to gale force winds during the winter months, whereas the northern coast facing Coffin Bay is more sheltered from the effects of extreme conditions.

Mean monthly temperatures at 3.00pm range from 14.6°C in July to 18.1°C in February. Daily maxima range between 18.2°C and 30.6°C for the same months. January and February can have days or periods of up to a week of extreme heat in the region of 38°C to 42°C. The coldest months are July and August with daily minimum temperatures around 6.3°C.

Annual rainfall in the Coffin Bay area averages approximately 500 mm. Most rain falls in the winter months, and is associated with southwesterly frontal systems. Rainfall records for June, July and August show mean monthly gaugings of 74, 77 and 67 millimetres respectively.

1.2 Regional Setting

The southern tip of Eyre Peninsula is characterised by shallow, relatively infertile, calcareous soils and some extensive sand dune formations near the coast. Much of the country near Coffin Bay proved unsuitable for agriculture, but was grazed heavily in the early days of settlement, mainly by sheep. The preferred areas were savanna woodlands dominated by Drooping Sheoak, a relatively short-lived tree whose seedlings were unable to withstand the combined grazing pressure of kangaroos, domestic stock and rabbits over much of its range in the early part of the twentieth century. Without the recruitment of seedling trees, the death of mature specimens has left large areas of once widespread sheoak woodlands in a degraded state.

Dunes near the coast have retained much of their mallee and mallee-heath vegetation, due to the unsuitability of these areas for extensive livestock grazing. The parks of the Coffin Bay area, along with adjacent SA Water land and numerous significant private properties protected under Heritage Agreements, protect relatively intact mallee and heath ecosystems and some of the remaining stands of sheoak woodlands in the region.

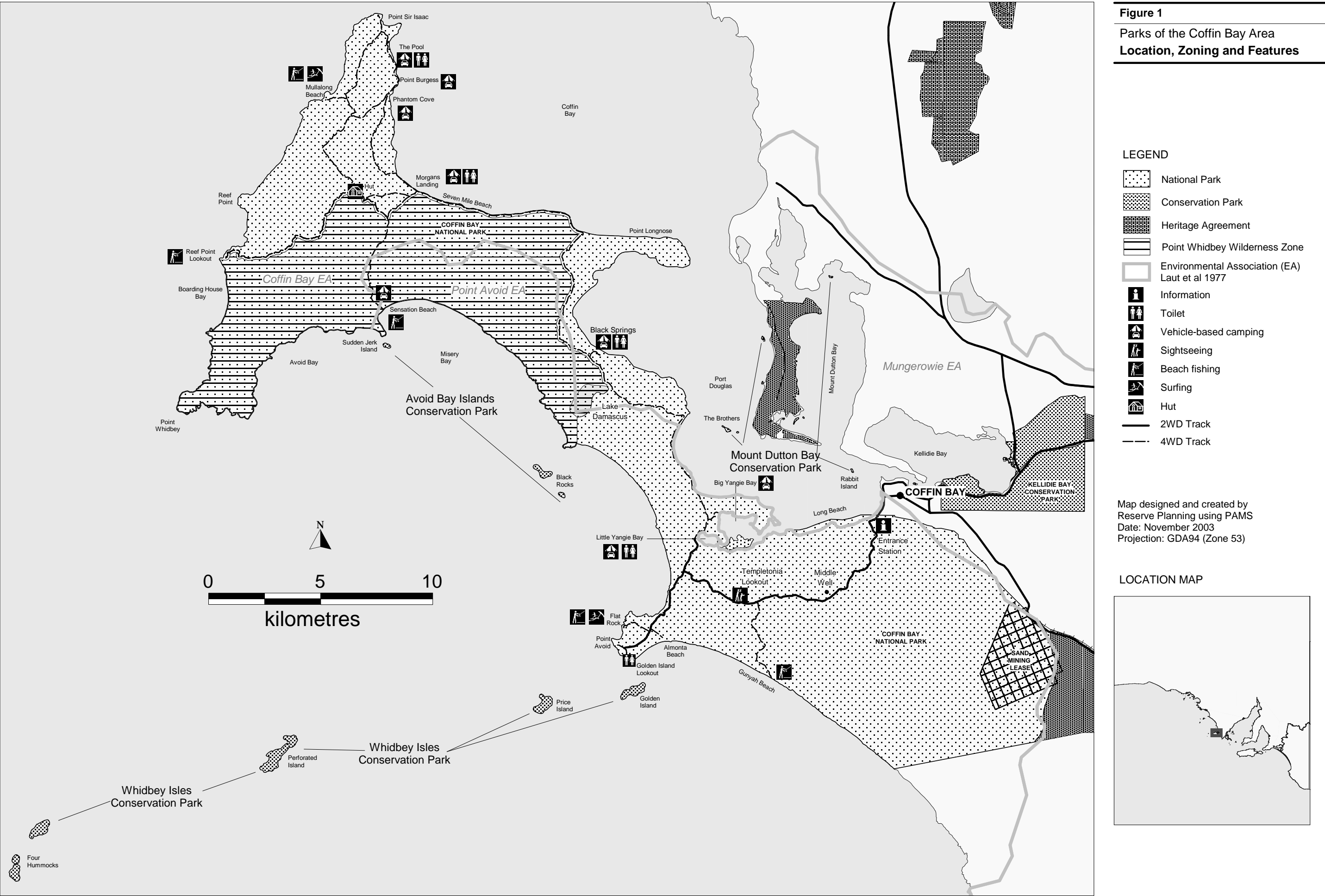
1.2.1 *Biogeographic Regionalisation and Environmental Associations*

The Interim Biogeographic Regionalisation of Australia (IBRA) provides a bioregional planning framework within which to identify the gaps and to set priorities for developing the National Reserve System. IBRA regions represent a landscape-based approach to classifying the land surface from a range of continental data on environmental attributes. In 1999, IBRA version 5.1 was developed with 85 bioregions delineated, each reflecting a unifying set of major environmental influences which shape the occurrence of flora and fauna and their interaction with the physical environment.

The parks of the Coffin Bay area lie within the Eyre and Yorke Blocks IBRA region, which is described as:

“Archaeal basement rocks and Proterozoic sandstones overlain by undulating to occasionally hilly calcarenite and calcrete plains and areas of aeolian quartz sands, with mallee woodlands, shrublands and heaths on calcareous earths, duplex soils and calcareous to shallow sands, now largely cleared for agriculture.” (Environment Australia 2000).

Figure 1
Parks of the Coffin Bay Area
Location, Zoning and Features



Back of Fig1 (A3)

The Eyre and Yorke Blocks IBRA region totals approximately 4,559,000 ha, approximately 1/3 of which is still covered in native vegetation in relatively large blocks which lend themselves to being enhanced as wildlife habitat by careful application of strategies to improve connectivity (see 3.2.2 NatureLinks).

Within the Eyre and Yorke Blocks IBRA region, Laut *et al* (1977) recognised a series of Environmental Associations. The Environmental Associations (EAs) included in the parks of the Coffin Bay area are:

Coffin Bay EA, described as:

An undulating plain with cliffs and dunes along the coast. Cover on the plain is of low woodland and open scrub, with some heath vegetation on the dunes. Disturbance is relatively low, as the area has no conventional economic use.

The entire environmental association is conserved within the parks of the Coffin Bay area.

Avoid Bay EA, described as:

A sandy plain with numerous dunes and cliffs along the coast. The plain is covered with heath and low shrubland, relatively intact, since the area is of little economic use. Many of the dunes are dynamic, with little permanent vegetation cover.

The parks of the Coffin Bay area conserve approximately 87% of this EA.

Mungerowie EA, described as:

An undulating calcarenite plain with easterly-tending dunes and dunes and cliffs along the shoreline. The plain has a degraded cover of low woodlands, shrublands and heath which are predominantly used for extensive livestock grazing.

The parks of the Coffin Bay area conserve approximately 4% of this EA, mostly within Kellidie Bay Conservation Park. A further 12% is protected in numerous private properties over which Heritage Agreements have been established.

There is a widely recognised benchmark that at least 15% of an original ecosystem should be conserved where possible and the parks of the Coffin Bay area contribute significantly to the conservation of these ecosystems.

2 MANAGEMENT FRAMEWORK

2.1 Legislative Framework

The *National Parks and Wildlife Act 1972* (NP&W Act) provides the authority by which the Minister for Environment and Conservation controls and manages all reserves in South Australia proclaimed under the Act. When managing reserves, DEH is required under section 37 of the Act to have regard to, and provide actions that are consistent with the following objectives stated in the Act:

- preservation and management of wildlife;
- preservation of historic sites, objects and structures of historic or scientific interest within reserves;
- preservation of features of geological, natural or scenic interest;
- destruction of dangerous weeds and the eradication or control of noxious weeds and exotic plants;
- control of vermin and exotic animals;
- control and eradication of disease of animals and vegetation;
- prevention and suppression of bush fires and other hazards;
- encouragement of public use and enjoyment of reserves and education in, and a proper understanding and recognition of, their purpose and significance; and
- generally, the promotion of the public interest.

Native Title

Native Title is used to describe the interests Aboriginal and Torres Strait Islander People have in land and waters according to their traditional laws and customs. Federal legislation, in the form of the *Native Title Act 1993*, was enacted to:

- provide for the recognition and protection of native title;
- establish ways in which future dealings affecting native title may proceed and to set standards for those dealings;
- establish a mechanism for determining claims to native title; and
- provide for, or permit, the validation of past acts, and intermediate period acts, invalidated because of the existence of native title.

Any development proposed for a reserve must be valid in terms of the *Native Title Act 1993*.

Some of the parks are subject to a claim for a determination of native title by the Nauo-Barngarla people. A 'determination' is a decision made by the courts as to who holds native title for an area.

Implementation of this adopted management plan will be subject to any native title rights and interests that may continue in relation to the land and/or waters. Nothing in the management plan is intended to affect native title. Before undertaking any future acts that might affect native title, DEH will follow the relevant provisions of the *Native Title Act 1993*.

However, in addition to the requirements of native title legislation, DEH is committed to developing partnerships with Aboriginal people. This may include a number of native title and Aboriginal heritage groups. Consistent with South Australian Government policy, DEH is keen to pursue Indigenous Land Use Agreements (ILUAs) where appropriate. ILUAs are voluntary agreements between a native title group and other people about the use and management of land and/or waters.

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) represents a fundamental reform of former Commonwealth environment laws. The Act establishes a new Commonwealth approval process for assessment of proposed actions that are likely to have a significant impact on matters of national environmental significance and provides an integrated system for biodiversity conservation and management of important protected areas.

Matters that require assessment and approval of proposed actions under the EPBC Act are:

- any action that has, will have or is likely to have a significant impact on the following identified matters of national environmental significance:
 - World heritage properties
 - Ramsar wetlands of international significance
 - Nationally listed threatened species and ecological communities
 - Listed migratory species
 - Commonwealth marine areas
 - Nuclear actions (including uranium mining)
- any activity involving Commonwealth land that has, will have, or is likely to have a significant impact on the environment.

With regard to the parks of the Coffin Bay area, several threatened species occur, including the nationally **vulnerable** Silver Candles (*Pleuropappus phyllocalymmeus*). Commonwealth approval is required for any action that has, will have or is likely to have a significant impact on this species.

The parks also conserve animals considered **vulnerable** at the state level such as Hooded Plover (*Thinornis rubricollis*) and White-bellied Sea-eagle (*Haliaeetus leucogaster*), as well as **rare** Australian Sea-lion (*Neophoca cinerea*), Osprey (*Pandion haliaetus*), Rock Parrot (*Neophema petrophila*), Peregrine Falcon (*Falco peregrinus*), Eastern Reef Egret (*Egretta sacra*) and Cape Barren Goose (*Cereopsis novaehollandiae*). Additionally, the Peninsula Dragon (*Ctenophorus fionni*) is **endemic** to southern Eyre Peninsula.

Furthermore, in consultation with relevant State authorities, the Commonwealth Minister for the Environment and Heritage may develop and implement recovery plans and threat abatement plans for threatened species and ecological communities listed under the EPBC Act. Where applicable, DEH should contribute to and incorporate these plans into park management regimes and operational procedures.

There are also a number of International, National and State Conventions, Agreements and legislative Acts with which DEH is obliged to comply in regard to the management of reserves. These are listed in Appendix C.

2.2 Management Plans

Management planning is a statutory requirement for all reserves prescribed in section 38 of the *National Parks and Wildlife Act*. Management Plans provide a ministerially endorsed and legally binding framework for the specific use and management of NP&W Act reserves. They are intended to reflect the objectives stated in section 37 of the Act while accommodating anticipated trends and community aspirations over a five to ten year time frame.

The management planning process is but a small part of a much larger, statewide hierarchy of management. This is directed from the highest level by state government policies and departmental priorities and implemented, on a day to day basis, at a regional and district level. A standard management planning process is mandated, to ensure that all statutory obligations are met.

Management plans define what is considered acceptable activity in a reserve while still allowing park managers some flexibility in day to day decision-making. Management Plans identify the key values, vision and objectives of the reserve, and the strategies to achieve these objectives. They are not intended to be comprehensive compendia of resource information, nor are they heavily prescriptive action statements; other documents, such as 'delegate' plans, cover those aspects.

Once a plan of management is adopted, its provisions must be carried out in relation to the reserve in question and no actions undertaken unless they are in accordance with the plan. However, the NP&W Act does make provision for amending adopted plans and this requires a similar procedure to that of original management plans, including a three month period of public exhibition.

Management plans often foreshadow the preparation of 'delegate' plans to achieve the proposed objectives. Delegate plans are detailed, non-statutory action plans that provide additional details on how the actions, listed in the management plan, are to be progressed. With regard to the parks of the Coffin Bay area, the development of a fire management plan is proposed and visitor facilities upgrades are detailed in *Parks on Eyre* (DEH 2000), a plan developed in consultation with interested community individuals. Although such action plans are not subject

to the same statutory processes as are formal management plans, DEH will continue to involve relevant stakeholders, other agencies and community groups in their preparation and implementation as part of the on-going management of the park.

2.3 Purpose of Proclamation

The purpose of all NP&W Act reserves is predicated by the twin aims of the Act; to provide for the establishment and management of reserves for public benefit and enjoyment; and to conserve wildlife in a natural environment. Increasingly, the importance of biodiversity conservation is being recognised at a national and international level and the future use and management of reserves must address this issue.

In 1982, section 665 (28,665.65 ha), Hundred of Lake Wangary was proclaimed as Coffin Bay National Park under section 28 of the *National Parks and Wildlife Act* because it was considered to be of national significance by reason of the wildlife or natural features of the land. In 1985, 440.25 ha of closed road reserves were added (Section 667) and in 1999, the park's boundaries were expanded down to Mean Low Water Mark by adding Section 674, Hundred of Lake Wangary (1851.32 ha) and Section 928, Plan H860600 (46.1 ha), being a tidal island in Yangie Bay. Coffin Bay National Park is now approximately 31,000 ha in area.

Kellidie Bay Conservation Park was first dedicated in 1954. It was constituted as a conservation park with the passing of the *National Parks and Wildlife Act* in 1972, to conserve wildlife and the natural and historic features of the land. In 1975, two coastal sections (S131 and 139, Hundred of Lake Wangary) were added, bringing the area up to 1,786.28 ha.

Mount Dutton Bay Conservation Park, having first been dedicated as a Fauna Conservation Reserve in 1967, was also constituted at the inception of the Act, and included Rabbit Island, Goat Island, twin islands known as The Brothers and four other unnamed islands, all in Mount Dutton Bay to the north of Coffin Bay National Park. In 1993, two additional, small, unnamed islands to the west of Horse Peninsula were added, bringing the total area of the park to just over 12 ha.

Whidbey Isles Conservation Park was also dedicated as a Fauna Conservation Reserve in 1967, and constituted as a conservation park at the inception of the Act in 1972, and included three of the Four Hummocks Islands (excluding the southernmost island), Whidbey Island, Price Island and Perforated Island. In 1991, the park was expanded by adding land to Mean Low Water Mark, bringing the area to 244.67 ha.

Avoid Bay Islands Conservation Park, consisting of Black Rocks and two small, unnamed islands in Avoid Bay, was dedicated as a Fauna Conservation Reserve in 1968, and constituted as a conservation park at the inception of the Act in 1972. It was expanded to Mean Low Water Mark in 1991 to total 31.87 ha.

2.4 Reserve Classification

All reserves proclaimed under the *National Parks and Wildlife Act 1972* are assigned to one of the classifications listed in the Act. The classifications provide a general statement of purpose for which the area was acquired. Appendix D contains a full list of reserve classifications.

2.4.1 IUCN Protected Area Management Category

The World Conservation Union (IUCN) has developed an international system for the classification of protected areas – the IUCN Protected Area Management Categories. Management objectives for all types of reserves are required to meet the IUCN definition of a protected area to be considered part of the National Reserve System, and all protected areas have been assigned to one of the IUCN protected area categories.

Coffin Bay National Park is classified as a "National Park" (IUCN category II), which is described as a "natural area of land and/or sea, designated to:

- (a) protect the ecological integrity of one or more ecosystems for present and future generations,
- (b) exclude exploitation or occupation inimical to the purposes of designation of the area and
- (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible." (IUCN 1994)

Management of Coffin Bay National Park will be consistent with the following IUCN Category II management objectives, that is, to:

- protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational or tourist purposes;
- perpetuate, in as natural a state as possible, representative examples of physiographic regions, biotic communities, genetic resources, and species, to provide ecological stability and diversity;
- manage visitor use for inspirational, educational, cultural and recreational purposes at a level which will maintain the area in a natural or near natural state;
- eliminate and thereafter prevent exploitation or occupation inimical to the purposes of designation;
- maintain respect for the ecological, geomorphologic, sacred or aesthetic attributes which warranted designation; and
- take into account the needs of indigenous people, including subsistence resource use, in so far as these will not adversely effect the other objectives of management.

The other four parks are classified as "Strict Nature Reserves"(IUCN Category Ia), which are described as "areas of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring."

Management of these parks will be consistent with the following IUCN Category Ia management objectives, that is to:

- preserve habitats, ecosystems and species in as undisturbed a state as possible;
- maintain genetic resources in a dynamic and evolutionary state;
- maintain established ecological processes;
- safeguard structural landscape features or rock exposures;
- secure examples of the natural environment for scientific studies, environmental monitoring and education, including baseline areas from which all avoidable access is excluded;
- minimise disturbance by careful planning and execution of research and other approved activities; and
- regulate public access.

3 MANAGEMENT CONTEXT

3.1 Administration

The parks of the Coffin Bay area are in the West Region of the Department for Environment and Heritage which includes 56 parks (328,904 ha) in the Eyre District, with staff based at the district headquarters in Port Lincoln. The park is managed by 8 operational staff, supported by four administration staff. When appropriate and for specific tasks, casual or contract staff are hired.

Other *National Parks and Wildlife Act* reserves in the vicinity include Lincoln National Park, Kathai Conservation Park, Sleaford Mere Conservation Park, Murrumbidgee Conservation Park and Warrumbidgee Conservation Park.

3.1.1 Resource Allocation & Plan Implementation

DEH must optimise the use of the limited resources available for the conservation and maintenance of reserves, with priorities set on a statewide and then regional perspective. Each year park managers, taking district priorities into account, develop work programs to implement some of the actions proposed in management plans. Whether these projects are actually undertaken is determined by, and subject to, the availability of resources (eg staffing and funding) and to any requirements of the Minister for Environment and Conservation and the department's Chief Executive, who take a statewide overview in setting departmental priorities and allocating resources. When resources are allocated for annual work programs, the parks of the Coffin Bay area must compete with other parks and regional projects that may be deemed to be of higher priority.

With that proviso, DEH remains committed to its responsibilities as a public land manager and the parks of the Coffin Bay area will receive an annual allocation of resources. This plan will be used as the basis for budgeting, operating and investing in the park.

3.2 Integrated Natural Resource Management

The management of the parks of the Coffin Bay area must take into consideration broader regional conservation issues and complement or contribute to regional conservation initiatives. There has been a movement away from the traditional approach of focusing on natural resource issues in isolation and undertaking ameliorative actions to address issues at a localised scale. DEH is committed to a 'whole of landscape' approach to the management of natural resources, where the activities of Government agencies, community groups and individuals are strategically planned and integrated to achieve shared conservation objectives.

There are a number of landscape-scale conservation initiatives already in place with implications for the management of parks in the Coffin Bay area. These include 'Ark on Eyre', a program aimed at removing threats to biodiversity and restoring wildlife habitats and species on Eyre Peninsula.

Ark on Eyre

The parks of the Coffin Bay area and other *National Parks and Wildlife Act* reserves within the West Region are being managed in the broader context of a planning initiative known as Ark on Eyre. The aim of this project is to enhance wildlife habitat and implement the recovery of threatened species across the region through integrated management of DEH reserves, SA Water land, local government land and voluntarily nominated, privately owned areas.

The initiative commenced in 2000, with funds granted from the Natural Heritage Trust. The focus is primarily aimed at reversing the decline of threatened plant species and to implement the recovery of regionally threatened or, in some instances through reintroduction, locally extinct species of wildlife.

3.2.1 Comprehensive, Adequate and Representative Reserve System (CARRS)

The South Australian Government has developed a CARRS strategy in conjunction with the Commonwealth Government (Environment Australia's National Reserve System Program), which aims to establish a comprehensive, adequate and representative reserve system (CARRS) for the protection of Australia's biodiversity, according to the following principles:

Comprehensiveness: inclusion of the full range of ecosystems recognised at an appropriate scale across each bioregion.

Adequacy: ability to maintain the ecological viability and integrity of populations, species and communities.

Representativeness: those areas that are selected for inclusion in reserves reasonably reflect the biotic diversity of the ecosystems from which they derive.

The *Interim Biogeographic Regionalisation of Australia* (IBRA) provides a bioregional planning framework within which to identify the gaps in the current reserve system and to set priorities for establishing reserves. IBRA regions represent a landscape-based approach to classifying the land surface from a range of continental data on environmental attributes, eg climate, lithology, landform, vegetation and land-use. Each IBRA region has been allocated a priority for the establishment of protected areas at a national level (according to Priority Bioregions for the National Reserve System) and at a state level (according to the Priority Subregions for the CARRS strategy). The Environmental Associations described by Laut *et al* (1977) are also used to identify gaps in the reserve system in South Australia. The assessment of sites for addition to the reserve system in South Australia takes into consideration the presence of threatened ecosystems, threatened flora and fauna (especially Nationally threatened species), migratory species and unique or regionally important or unique habitat *eg refugia*.

3.2.2 NatureLinks

NatureLinks is a South Australian Government initiative that builds on and integrates other major conservation programs that are already occurring within the state eg the CARRS strategy, the threatened species recovery program and regional revegetation programs. Its main objective is to achieve "connected habitat across South Australia, comprising a comprehensive system of core protected areas buffered and linked by lands managed for conservation objectives". *NatureLinks* is not a prescriptive program but rather a philosophical approach to biodiversity conservation and ecologically sustainable development at a landscape scale.

Native vegetation on SA Water land connects the parks of the Coffin Bay area with Lincoln National Park, extending natural habitat to the entire southern portion of Eyre Peninsula.

Within the local region, there are also several private properties protected by Heritage Agreements under the *Native Vegetation Act 1991*, that assist with the preservation of biodiversity (Figure 1). These protected areas provide stepping stones or links in accordance with the *NatureLinks* strategy that can facilitate movement of species, improve overall genetic diversity and boost ecosystem sustainability.

3.2.3 Regional Biodiversity Planning

On-park biodiversity conservation should integrate with broader regional programs. In order to do this, DEH has developed the *Biodiversity Plan for Eyre Peninsula South Australia* (DEH 2002) as part of South Australian Biodiversity Planning Program. This plan provides a guide for the community and government on the biodiversity assets of the region, major threats and recommendations on priority management strategies for conservation. It also provides information on the priority areas, vegetation types and species of the region, and strategic actions to assist in maintaining biodiversity for the future.

3.2.4 Integrated Natural Resource Management Planning

An *Integrated Natural Resource Management Plan for Eyre Peninsula District* (DWLBC 2004) has been published, following comments on a draft from key stakeholders. The plan reviews the state of the natural resource assets of the region, examines the processes that threaten them, identifies opportunities for more effective management of those resources, and establishes a framework of broad actions and targets to guide the regional community in its implementation. It recognises water, soils and natural biodiversity as core natural resource assets but also incorporates cultural

and primary production assets in recognition of the interconnectedness of social and economic aspects within NRM. Importantly, the plan provides the foundation for an investment strategy through which the community can access funding support for NRM actions.

3.2.5 Water Management Planning

Water Management Plans are the responsibility of Catchment Water Management Boards established under the *Water Resources Act 1997*, administered through the South Australian Department for Water, Land and Biodiversity Conservation (DWLBC) and generally developed in conjunction with Local Government. The intention of these plans is to develop strategies and guidelines that result in sustainable use of water resources on a catchment scale, by addressing ground and surface water use.

Settlements on the southern Eyre Peninsula rely on underground resources in the Uley Basin for their fresh water supplies. Most of this underground water is contained within land managed by SA Water, situated between Coffin Bay National Park and Lincoln National Park. Although the quality and quantity of water in this aquifer is considerably enhanced by the retention of native vegetation on SA Water land, the presence of national parks to the east and west also significantly improves the water supply. DEH and SA Water enjoy mutual benefits from an integrated approach to conservation management of the Uley Basin generally and regular liaison is maintained.

3.3 Community Engagement & Management Partnerships

Active engagement of the community sector to establish a wide and dedicated support base is the cornerstone of natural resource management. Community capacity building can have significant flow-on effects in improving a region's environmental, social and economic wellbeing. This plan recommends actions that aim to provide the community as a whole with relevant information, to build individual and group skills, to encourage participation in natural resource management across the wider landscape, and to provide the necessary organisational and institutional support. In particular, DEH supports the Friends of Coffin Bay National Park and their role in providing a vehicle for community involvement and stewardship.

DEH supports and promotes partnerships and cooperative management arrangements as the best way to progress integrated natural resource management. Achieving positive biodiversity and recreation outcomes requires the development of effective working relationships with other government agencies, local authorities, non-government organisations and the local community. With regard to the management of the parks of the Coffin Bay area, DEH endeavours to maintain links with the following:

- Local Government
- Animal and Plant Control Board
- Districts Soil Conservation Board
- Australian Plague Locust Commission
- South Australian Museum
- Department for Aboriginal Affairs and Reconciliation (DAARE)
- SA Water
- Native Title Claimants
- Aboriginal Heritage Committee
- Flinders University
- Primary Industries and Resources South Australia (PIRSA)
- Adjoining landholders
- Eyre Peninsula Catchment Water Management Board

DEH is committed to reconciliation and to the development of partnerships with the Nauo/Barngarla community to effectively manage the parks of the Coffin Bay area in a way that respects contemporary and traditional culture, knowledge and skills. Partnerships involve the delivery of programs that promote reconciliation, cultural awareness, Indigenous employment and training, cooperative management and indigenous cultural heritage management on parks.

3.4 History of Reserve Management

A draft management plan was first prepared for the parks of the Coffin Bay area in 1989. Following public comment, the plan was adopted, but never gazetted. A new draft plan was prepared and released in June 1999 in tandem with a proposal to dedicate the Point Whidbey area within Coffin Bay National Park and Avoid Bay Islands Conservation Park as a wilderness protection area under the *Wilderness Protection Act 1992*.

Since the dedication of the reserves, management actions have attempted to preserve natural values and provide for public enjoyment. While most developments have focussed on popular coastal recreation sites, large areas have remained undeveloped to preserve their wilderness qualities. Significant actions have included:

- conservation of wildlife habitat through control of pest plants and animals and rehabilitation of degraded sites;
- improving conventional vehicle access to popular sites, while retaining more rugged four wheel drive access to remote areas; and
- enhancing visitor experience through the provision of camp grounds, day visitor areas, lookouts and a network of walking trails.

3.5 Management Philosophy & Strategic Directions

The parks of the Coffin Bay area will be managed according to DEH policies and priorities. Strategic directions for the DEH are outlined in the *Department for Environment and Heritage - Strategic Plan 2002 - 2005*, which endeavours to achieve:

- *A Sustainable and Eco-efficient Society* – Viable, innovative and sustainable communities where individuals, households, businesses and government use resources efficiently, with minimal waste and minimal other environmental impacts.
- *Clean Air, Water and Land* – Healthy environments capable of supporting richly diverse life into the future.
- *Conserved Ecosystems* - viable populations of native plants and animals and viable ecosystems for future generations.
- *Conserved and Celebrated Heritage* - Conservation of significant heritage to identify and celebrate the landscapes, human history and sense of place of the land now known as South Australia.
- *Sustainable Use of Natural Assets and Resources* - Sustainable use and enjoyment of natural assets and resources to enhance prosperity, a sense of community and quality of life.

DEH believes that, in partnership with the community and other agencies, considerable advances can be made towards increasing overall protection of biological and cultural values, while ensuring sustainable and high-quality recreational opportunities for the community.

The vision for the parks of the Coffin Bay area are as parks, valued and managed by the community for their history, visual amenity, biodiversity and recreational values. To achieve this vision, DEH is keen to explore possible partnership arrangements with agencies and organisations that have a legitimate interest in the management of these parks. DEH recognises the importance of community and volunteer organisations and will continue to provide ongoing support and assistance, where possible.

4 MANAGEMENT PRESCRIPTION

4.1 Zoning

Section 39 of the *National Parks and Wildlife Act* provides for the designation of zones in a reserve and constrains the use of land in those zones to the conditions specified in an adopted management plan. Zoning aims to ensure that public use and management actions remain compatible with the protection of park values. Zones described below and shown in Figure 1, establish a framework for the provision and further development of visitor services and facilities and the sustainable use of the reserve.

Objective

Zone the parks of the Coffin Bay area to ensure appropriate public use, landscape protection, the conservation of wildlife habitats and cultural features and to preserve the wilderness values of the more remote parts of the Coffin Bay Peninsula.

Development Nodes

These zones comprise of camping and day visitor areas. Because they are limited in area to a hectare or so, they are difficult to view on a map with the scale of Figure 1, so are depicted by a symbol. Developments of modest scale in these areas may include vehicle and walking access, signs, campsites, toilets, fences, vehicle barriers, picnic facilities, viewing platforms, steps, boardwalks, barbecues, water supply, car parking or safety barriers. Details of design have been developed in consultation with community members in the facilities upgrade plan known as *Parks on Eyre* (DEH 2000), and will be implemented as resources become available with ongoing advice from stakeholders. Any construction or development works will seek to complement the natural values of the parks.

Wilderness Zone

The southwestern portion of Coffin Bay National Park has been identified as having some of the highest quality wilderness values in the state (Lesslie 1981). Since the mid 1980s, vehicle access to the western end of Avoid Bay has been restricted to preserve the wilderness quality of the Point Whidbey area. With the release of the draft plan of management in 1999, it was proposed that the area be formally constituted as Point Whidbey Wilderness Protection Area under the *Wilderness Protection Act 1992*. However, following extensive community consultation, it was decided that the wilderness values could receive adequate protection if zoned under section 39 of the *National Parks and Wildlife Act 1972* (*Gazette* 17 April 2003, p1756).

This zone includes Lake Damascus, the relatively undisturbed native vegetation south of Seven Mile Beach and the extensive sand dunes north of Sensation Beach. Visitors may access the area on foot from the car park at Sensation Beach and informal camping is allowed using the "no trace" ethic outlined in the information leaflet, *Minimum Impact Code for Wilderness Use in South Australia*, (DENR 1994, see Appendix E).

In keeping with the relatively undisturbed nature of the environments in the zone, there are no visitor facilities planned, but 4WD access to Sensation Beach will be retained. The zone will continue to be managed in accordance with *Wilderness Protection Areas & Zones South Australian Code of Management* (DENR 1994, see Appendix F).

Natural Area Zones

These zones include the majority of the mainland parks. Vehicle access is permitted along designated roads and tracks. Walkers are encouraged to use trails which provide access to popular destinations. Bushwalkers using a "no trace" ethic may access the remainder of these zones.

Restricted Access Zones

These zones include all islands. Islands contain important sea bird roosting and wildlife breeding areas. Visitors need to obtain permission in writing from DEH prior to accessing islands.

4.2 Natural Resources

4.2.1 Geology and Landform

Massive dune fields, both modern and ancient, dominate the Coffin Bay Peninsula. Sand which accumulated during the Pleistocene Period has cemented to form the Bridgewater Limestone facies. Erosion by wind and wave action has formed this limestone into spectacular coastal cliffs and other features, for which the area is well known. More recent sediments form extensive mobile dune systems in the Avoid Bay, Misery Bay and Gunyah Beach areas. The northern coastline of the Peninsula is characterised by sheltered bays and beaches, lining the protected waters of Coffin Bay.

Older, harder rocks of the Sleaford Complex also outcrop on the Coffin Bay Peninsula. Point Sir Isaac is composed of this highly deformed gneiss¹, which has been subjected to a complex sequence of igneous and metamorphic processes.

The offshore islands are also formed largely of similar material, overlain by recent limestone sediments. Many islands are capped with either bare or vegetated sand dunes. Steep cliffs typically face the prevailing south-westerly winds and sea swell. Some islands have sandy beaches or bays on the sheltered north-eastern side.

Coffin Bay National Park occurs within the geological province known as the Gawler Craton formed between 2400 and 1490 million years ago. The ancient Archaean to Mesoproterozoic crystalline basement rocks of the Gawler Craton are now covered with a relatively thin layer of more recent sediments of Tertiary to Quaternary age.

Outcrop of basement rocks within the National Park is generally restricted to coastal exposures although minor inland outcrops do occur, often forming spectacular peaks inland and prominent points and bluffs on the coast. The majority of the park is covered with Quaternary and Tertiary sediments. The most extensive of these being the Bridgewater Formation, a white to fawn coloured calcarenite, often showing karstic weathering and forming the spectacular high and steep cliffs on the coast. Recent and Quaternary sand dunes also cover extensive areas.

The Coffin Bay National Park contains older rocks of Archaean age which were emplaced approximately 2380 to 2316 million years ago. The Wangary Gneiss, a massive to compositionally layered quartz-feldspar-biotite-muscovite gneiss and Kiana Granite, a coarse grained, tabular feldspar granite with minor biotite and muscovite, are the main rock types within the area. Outcrops are limited to coastal exposures with inland areas entirely covered by Bridgewater Formation and sand dunes.

4.2.2 Native Vegetation

Plant species found within the parks of the Coffin Bay area, along with their national, state and regional conservation status, are listed in Appendix G. For an explanation of conservation status ratings, see Appendix I.

Coffin Bay National Park supports seven broad vegetation associations:

1. Drooping Sheoak (*Allocasuarina verticillata*) - Dryland Tea-tree (*Melaleuca lanceolata*) low woodland dominates the limestone areas at the western end of the park, and has been significantly modified by past land use.
2. Coast Daisy-bush (*Olearia axillaris*) and Coastal Bearded-heath (*Leucopogon parviflorus*) open heath occurs in sand dune areas throughout the park.
3. Swamp Paperbark (*Melaleuca halmaturorum*) open scrub: fringes brackish and freshwater wetland areas throughout the park.
4. Thick-head Glasswort (samphire) (*Sarcocornia blackiana*) low shrubland occupies saline soils subject to periodic inundation.
5. Cushion-bush (*Leucophyta brownii*), Sea Box (*Alyxia buxifolia*), Common Sea-heath (*Frankenia pauciflora*) and Salmon Correa (*Correa pulchella*) low shrubland inhabits exposed coastal cliffs, particularly on the southern coastline of the park.

¹ **gneiss**: A banded or foliated metamorphic rock, usually of the same composition as granite.

6. Coastal White Mallee (*Eucalyptus diversifolia*) open scrub: occurs extensively throughout the park, primarily where sandy soils cover limestone.
7. Smooth Cutting-grass (*Gahnia filum*) tussock grassland occurs as dense communities on low-lying areas subject to inundation following rain.

Vegetation on the various islands is largely dependent upon the degree of exposure to prevailing winds and subsequent level of salt tolerance:

1. Inshore islands such as those comprising Mt Dutton Bay Conservation Park are dominated by Nitre-bush (*Nitraria billardierei*). The introduced species African Boxthorn (*Lycium ferocissimum*) has invaded many of these inshore islands.
2. Offshore islands support a variety of heathland and grassland vegetation, determined by the size and topography of the island. Larger islands support stands of Drooping Sheoak, Dryland Tea-tree woodland. Nitre-bush, Cushion-bush and Coast Tussock-grass (*Poa poiformis*) are prevalent on most islands. Coast Daisy-bush and Common Sea-heath are also common.

On the mainland, grazing and related practices such as burning the vegetation to create feed, and the introduction of the rabbit, have had a dramatic effect on the landscape. As a result of the long history of pastoral use, the climax Drooping Sheoak woodland vegetation of much of Coffin Bay National Park has been degraded. The woodland is now represented by scattered individual trees and sparse, senescent stands exhibiting little regeneration. Although the vegetation association is not considered rare in the area or in the State, it is not well represented in the parks of southern Eyre Peninsula. Drooping Sheoak woodland is particularly significant because of its known link with the now-extinct Eyre Peninsula population of the Glossy Black Cockatoo (*Calyptorhynchus lathamii*). This species feeds almost exclusively on sheoak fruits, and is now restricted in South Australia to Kangaroo Island.

Patches of Smooth Cutting-grass (*Gahnia filum*) are critical habitat for the endangered Eyre Peninsula Southern Emu-wren (*Stipiturus malachurus parimeda*) and several endemic butterflies that have disappeared from much of their former range, such as the Yellowish, and Chrysotricha, Sedge-skippers (*Hesperilla flavescens flavia* and *H. chrysotricha naua*).

Another species of significance is *Pleuropappus phyllocalymmeus*, a small composite which grows in damp situations in the northern part of Kellidie Bay Conservation Park and adjoining land. It is otherwise known only from small, privately owned areas near Lake Greenly and Kapinnie Lakes (west coast of central Eyre Peninsula) and the southern tip of Yorke Peninsula.

Other plant species of particular interest in the parks include Rough Grevillea (*Grevillea aspera*), Rough-barked Manna Gum (*Eucalyptus viminalis* ssp *cygnetensis*), Port Lincoln Gum (*Eucalyptus lansdowneana* ssp *albopurpurea*), and the Western Daddy-long-legs Orchid (*Caladenia bicalliata*), which all have restricted distributions, or are considered vulnerable.

Vegetation associations within the mainland parks have been affected by past management practices. A large population of Western Grey Kangaroos on the Coffin Bay Peninsula has increased grazing pressure on the Drooping Sheoak - Dryland Tea-tree low woodland. At the western end of Coffin Bay Peninsula, the combined grazing pressure of both exotic and native herbivores limits regeneration.

An enclosure has been established near Point Sir Isaac within Coffin Bay National Park in conjunction with the Lower Eyre Peninsula Four Wheel Drive Club and other volunteers to provide a seed source and to re-establish the Drooping Sheoak woodland. This project will be expanded as part of the regional initiative known as "Ark on Eyre" (see 3.2 Integrated Natural resource Management).

Objectives

Protect vegetation associations and undertake actions necessary for the conservation of significant species where necessary.

Actions

- Integrate vegetation rehabilitation and habitat restoration programs with regional pest plant and feral animal control.
- Continue revegetation where necessary to improve visitor amenity and undertake rehabilitation of degraded vegetation.
- Identify and monitor populations of rare, vulnerable and endangered plant species. Develop and implement plans, if required, for their conservation.
- Monitor impacts on vegetation, and implement remedial management programs where necessary.
- Re-establish Drooping Sheoak-Dryland Tea-tree woodland in areas where this association has been degraded.

4.2.3 Native Fauna

Animal species within the parks of the Coffin Bay area, along with state conservation status, are listed in Appendix H. For an explanation of conservation status ratings, see Appendix I.

About 150 species of birds, 11 species of terrestrial mammals (of which seven are introduced), 12 species of marine mammals, 20 species of lizards, six species of snakes and several (mostly unidentified) species of amphibians have been recorded in the parks. Several wildlife species occurring in the parks are classed as vulnerable, endangered or rare.

Habitat modification has resulted in the decline and disappearance of several mammal and bird species from the area; skeletal remains and documented history are the only evidence of their existence. Another factor in the decline of native fauna was the introduction of foxes, cats and dogs.

About 10% of the bird species recorded are pelagic, that is, they frequent off-shore and/or ocean water, while a further 15% are wading species. White-bellied Sea-eagle (*Haliaeetus leucogaster*) and Osprey (*Pandion haliaetus*) are both moderately common in the parks but are generally uncommon in South Australia, and are vulnerable to human interference. The availability of undisturbed coastal cliff habitats and rocky offshore islands makes the Coffin Bay area a significant breeding refuge for these species.

Other bird species of particular interest, because they are rare locally, regionally or within the state, include the Eastern Reef Egret (*Egretta sacra*), Australasian Shoveler (*Anas rhynchos*), Cape Barren Goose (*Cereopsis novaehollandiae*), Eastern Curlew (*Numenius madagascariensis*), Wood Sandpiper (*Tringa glareola*), Latham's Snipe (*Gallinago hardwickii*), Buff-banded Rail (*Gallirallus philippensis*), Swamp Harrier (*Circus approximans*), Peregrine Falcon (*Falco peregrinus*), Scarlet Robin (*Petroica multicolor*), Diamond Firetail (*Stagonopleura guttata*), White-winged Chough (*Corcorax melanorhamphos*), Blue-breasted Fairy-wren (*Malurus pulcherrimus*), Weebill (*Smicromis brevirostris*), Southern Emu-wren (*Stipiturus malachurus parimeda*), and Western Whipbird (*Psophodes nigrogularis*).

The Pied Oystercatcher (*Haematopus longirostris*), Hooded Plover (*Thinornis rubricollis*) and Red-capped Plover (*Charadrius ruficapillus*) all breed on the beaches of the peninsula in summer. Vehicle movement along beaches used by sea birds for feeding and nesting can result in disturbance, destruction of nests, and mortality in young. Swamps, which are important habitat for many bird species, have been damaged in the past by indiscriminate vehicle use.

Reptiles recorded from the park include the Peninsula Dragon (*Ctenophorus fionni*), Rosenberg's Goanna (*Varanus rosenbergi*), Masters Snake (*Drysdalia mastersii*), Black Tiger Snake (*Notechis ater*), Common Death Adder (*Acanthophis antarcticus*) and Peninsula Brown Snake (*Pseudonaja inframacula*).

Native terrestrial mammals are few, reflecting the severity of extinctions that have occurred on Eyre Peninsula since colonial settlement. Within the first 50 years of settlement, Eyre Peninsula lost up to 40% of its terrestrial mammals and some have become extinct more recently (Watts & Ling, 1985). The remaining native mammal species include the Western Grey Kangaroo (*Macropus fuliginosus*), Bush Rat (*Rattus fuscipes*) and Western Pygmy-possum (*Cercartetus concinnus*).

Many of the now locally extinct species suffered a sudden and severe decline during the first 10 to 15 years of the 20th century due to a combination of factors, all related to economic development activities in the region. The Tammar Wallaby (*Macropus eugenii*) and Common Brushtail Possum (*Trichosurus vulpecula*), for instance, were once trapped by the thousands for their skins. Historical sightings and sub-fossil remains indicate that Brush-tailed Bettong, (*Bettongia penicillata*), Burrowing Bettong (*Bettongia lesueur*), Bilby (*Macrotis lagotis*) and Quoll (*Dasyurus* sp) also once inhabited the area.

The larger island of The Brothers in the Mount Dutton Bay Conservation Park is of palaeontological significance because of the presence of sub-fossil bones of six species, including an extinct kangaroo and a giant flightless bird.

Islands of Whidbey, Avoid Bay and Mount Dutton Bay Conservation Parks support breeding populations of seabirds and marine mammals. Colonies of the Australian Sea-lion (*Neophoca cinerea*) and New Zealand Fur-seal (*Arctocephalus forsteri*) occur on many of these islands.

Bottle-nosed Dolphins (*Tursiops truncatus*) are common within the Coffin Bay waterway, and Common Dolphins (*Delphinus delphis*) are frequently seen in offshore waters. Southern Right Whales (*Balaena glacialis australis*) are often seen along the southern coastline of Coffin Bay National Park during early winter, as they migrate towards their breeding grounds at the Head of the Great Australian Bight.

Fauna species of conservation significance within the parks of the Coffin Bay area include the Australian Sea-lion, New Zealand Fur-seal, Hooded Plover, Osprey and White-bellied Sea-eagle. The two seal species have been the subject of a cooperative survey and monitoring program by the CSIRO. Australian Sea-lion colonies are relatively stable, while the population of New Zealand Fur-seals appears to be increasing moderately following the cessation of extensive hunting during the 19th century.

Osprey and White-bellied Sea-eagle nesting sites are sensitive to disturbance. Many occur in remote areas. Those close to recreational sites may require active management to prevent human interference.

Hooded Plovers and several other species of wading birds nest on beaches. Where vehicle access is permitted (eg Seven Mile Beach), potential impact on these species should be determined and managed where required.

Western Grey Kangaroo

Management of the total grazing pressure within the mainland parks is a key component in the conservation of vegetation associations and plant species of conservation significance. The combined high grazing pressure of kangaroos, rabbits and, until recently, horses has prevented regeneration of the Drooping Sheoak - Dryland Tea-tree grassy low woodland, which originally occupied much of the Coffin Bay Peninsula.

Kangaroo numbers across southern Eyre Peninsula are generally higher than in pre-European times. This rise in abundance is attributed to agricultural and pastoral practices, with the clearing of mallee and woodlands providing kangaroos with an abundance of food. More importantly, the development of artificial water sources (farm dams, tanks and troughs) across what was predominantly a dry landscape has reduced the influence that minor droughts once had in regulating kangaroo numbers. In Coffin Bay National Park, natural springs and soaks were enhanced by excavation. This situation has been further exacerbated by the removal of the kangaroo's primary predator, the Dingo.

DEH regularly issues non-commercial destruction permits to landholders in the area to manage grazing impacts when kangaroos are locally abundant. In addition, some landholders on Eyre Peninsula utilise the commercial kangaroo quota, and engage Kangaroo Field Processors to harvest kangaroos on their property.

The kangaroo population of Coffin Bay National Park has been monitored annually since 1997. Results from surveys indicate that the kangaroo population fluctuates annually, with the highest density of 38 kangaroos per square kilometre recorded in 1998. In comparison to macropod population densities elsewhere in Australia for similar vegetation types, numbers within Coffin Bay National Park are considered high.

The history of grazing by domestic stock, feral animals and kangaroos has resulted in the severe degradation and loss of low grassy woodland throughout the park. Vegetation monitoring indicates that the high grazing pressure within Coffin Bay National Park is preventing the recruitment of Drooping Sheoak and the flowering of native grasses. Management of kangaroo abundance will be necessary to enable restoration of this vegetation association and the other native species it supports. This will include culling kangaroos in conjunction with an integrated pest animal control program and the restoration of key watering points to their natural state.

Objectives

Protect and enhance the quality and diversity of wildlife habitats within the parks to maintain and, where feasible restore, the diversity of native fauna populations.

Ensure wildlife programs are based on best available knowledge and are implemented in consultation with wildlife specialists.

Minimise human disturbances to wildlife.

Actions

- Integrate regional pest plant and feral animal control with vegetation rehabilitation and habitat restoration, and where feasible, reintroduce locally extinct or endangered native animal populations.
- Identify and monitor populations of rare, vulnerable and endangered animal species and, if necessary, develop and implement plans for their conservation.
- Monitor population trends and impacts of Western Grey Kangaroos within the mainland parks and if necessary, reduce the kangaroo population to a sustainable level by targeted culling.
- Monitor and manage the impact of vehicle access on beach-nesting bird species (eg Hooded Plover).
- Continue to survey and monitor populations of the Australian Sea-lion and New Zealand Fur-seal on offshore islands, in conjunction with the CSIRO.
- Monitor and manage the impact of recreational activities on key wildlife species (eg Osprey and White-bellied Sea-eagle).
- Encourage scientific research to enhance wildlife management.

4.2.4 Introduced Plants

Pest plants occurring within parks of the Coffin Bay area can be broadly separated into two groups: species that invade native vegetation and non-invasive species that thrive in disturbed environments. Those which are highly invasive of native vegetation include African Boxthorn (*Lycium ferocissimum*), Aleppo Pine (*Pinus halepensis*), Myrtle-leaved Milkwort (*Polygala myrtifolia*), Bridal Creeper (*Asparagus asparagoides*), South African Beach Daisy (*Arctotheca populifolia*) and Olive (*Olea europaea*), and will be prioritised for control.

African Boxthorn occurs within both Coffin Bay National Park, Kellidie Bay Conservation Park and on many of the islands, particularly those within the Coffin Bay waterway. The seeds, contained within a palatable fruit, are spread mainly by birds. Control work is continuing on this species.

Aleppo Pine has invaded Kellidie Bay Conservation Park, primarily from roadsides and shade trees planted by early settlers of the Coffin Bay area. Large pines have been cut and seedlings hand-pulled annually. However, reinfestation continues due to the large volume of seeds produced by each remaining tree. Pine control has been undertaken by staff, volunteers and employment program workers. Complete eradication of Aleppo Pines from the Coffin Bay area may not be totally desirable, at least until Drooping Sheoak habitat is better restored in the region, since they provide food for a vulnerable population of Yellow-tailed Black-cockatoos.

The aggressive coastal weed, South African Beach Daisy, was first recorded on Eyre Peninsula along the Lake Newland Conservation Park beach. This melon-leaved hairy daisy with yellow button flowers is now established along sandy beaches throughout South Australia. The environmental impacts from this recently established weed are as yet unknown.

Myrtle-leaved Milkwort has escaped from gardens and become established in Kellidie Bay Conservation Park in the last few years. A small infestation is located in the north west of the park. Staff and volunteers have hand-pulled seedlings and mature plants.

Bridal Creeper is established in both Coffin Bay National Park and Kellidie Bay Conservation Park. It is widespread on Lower Eyre Peninsula, occurring along roadsides and on both private and government land. No intensive control measures are currently undertaken due to the magnitude of the problem, but some suppression may result from the introduction of parasitic rust species.

Olives occur in Kellidie Bay Conservation Park and an eradication program has been initiated.

Agricultural weed species including Salvation Jane (*Echium plantagineum*), Horehound (*Marrubium vulgare*), Onion Weed (*Asphodelus fistulosus*) and others such as African Daisy (*Senecio pterophorus*) occur on roadsides and disturbed areas throughout the park. It is likely that these species were introduced by stock animals prior to the park being dedicated. These species do not aggressively invade native vegetation, and are confined to disturbed areas. Revegetation sites have shown a significant decline in these species, notably Horehound. In 1998 the Spanish Plume Moth was introduced to the Morgans Landing area within Coffin Bay National Park to control a local population of Horehound.

Marijuana (*Cannabis sativa*) crop sites have been discovered in the parks of the Coffin Bay area. These have legal as well as environmental implications. Eradication programs in conjunction with the SA Police force will be continued.

Objectives

Reduce the negative impacts of pest plants on wildlife habitats in the parks.

Prioritise pest plant programs to ensure maximum park and community benefit.

Promote community understanding of pest plant impacts on the natural environment and encourage participation in regional programs.

Actions

- Undertake, where practicable, control of invasive pest plant species as part of the regional integrated wildlife restoration programs.
- Continue programs to eradicate invasive weeds (eg African Boxthorn, Aleppo Pine, Bridal Creeper, Olive and Myrtle-leaved Milkwort) from the parks of the Coffin Bay area.
- Monitor the effectiveness of weed eradication programs and implement new techniques when available.
- Increase awareness in the local community of the invasive nature of some ornamental plants in gardens (eg Myrtle-leaved Milkwort), and encourage their replacement with suitable indigenous species.
- Control non-invasive pest plant species in sites subject to disturbance.

4.2.5 Introduced Pathogens

Cinnamon Fungus (*Phytophthora cinnamomi*) is technically classified as a water mould or Oomycota but is generally referred to as a fungus. It is an introduced, soil-borne pathogen that kills a wide range of native plant species by attacking their root systems and reducing or stopping the movement of water and nutrients within the plants.

The disease spreads rapidly downhill with the movement of water through the soil. It can also spread slowly in any direction through root to root contact. The spread of *Phytophthora* may be dramatically increased by human activities, particularly by transporting soil, gravel and plant material on vehicles, footwear and camping equipment.

Objective

Prevent the introduction and spread of introduced pathogens in the reserve.

Actions

- Comply with the provisions of the Threat Abatement Plan For Dieback Caused By The Root-Rot Fungus *Phytophthora cinnamomi* (Environment Australia 2001).
- Increase DEH staff awareness of the potential for introduction and establishment of *Phytophthora cinnamomi*, susceptible plant species and indicators of its presence.
- Ensure all soil is removed from earth-moving and construction equipment entering the park, to reduce the risk of *Phytophthora* introduction.
- Provide boot-cleaning stations for track users if necessary.

4.2.6 Introduced Animals

Seven species of introduced mammals have been recorded in Coffin Bay National Park, including House Mouse (*Mus domesticus*), European Rabbit (*Oryctolagus cuniculus*), Feral Dog (*Canis familiaris*), Fox (*Vulpes vulpes*), Feral Cat (*Felis catus*) and, until recently, Horse (*Equus caballus*) and Cattle (*Bos taurus*).

Rabbits were first seen in the area during the mid-1880s. Within Coffin Bay National Park myxomatosis outbreaks occur annually in late spring, keeping rabbit numbers at low to moderate levels. The arrival of Rabbit Calicivirus Disease (RCD) on lower Eyre Peninsula initially further reduced the rabbit population in the region. However, sampling in January 1997 and subsequently has failed to record the presence of RCD in Coffin Bay National Park and further control from this disease is unlikely. Rabbit control within the park will continue to consist of warren ripping, fumigation and baiting.

Foxes occur throughout the park, favouring modified areas and beaches. An ongoing quarterly fox baiting program is undertaken in Coffin Bay National Park with the assistance of volunteer groups. The success of this program is indicated by the observation, in 2002, that Fairy Terns were successfully breeding on Seven Mile Beach, an unusual event on any mainland beach in South Australia.

Feral cats and dogs occur in the mainland parks, either as strays from the Coffin Bay township or through deliberate dumping. Both species are susceptible to fox baits, which are placed well away from inhabited areas to avoid inadvertent losses of residents' pets.

Horses were introduced to the Coffin Bay Peninsula in the 1800s. In the early 1900s, horses were bred in the area as remounts for mounted troops during World War I. Descendants of this breeding program inhabited the park in uncontrolled numbers for most of the twentieth century. In 1991/92 DEH entered into an agreement with an interested community group now known as the Coffin Bay Pony Preservation Society, to reduce the number of horses and their consequent impact on the park. This agreement sought to limit numbers to 20 mares (plus suckling foals) and 1 stallion.

Recently, however, the concept of maintaining artificial watering points to manage a herd of feral horses in a national park with a high population of native herbivores has been reexamined. Part of the strategy to manage total grazing impacts on regenerating vegetation has been the closure and restoration of artificially enhanced watering points in the park.

In accordance with the Eyre Peninsula Catchment Water Management Board's catchment water management plan (in prep), artificially enhanced waterholes, or groundwater access trenches, are technically wells, and therefore must have a permit and be registered in order to manage the aquifer properly. Part of this management includes directing stock and surface water runoff away from the waterhole to avoid polluting the aquifer with faecal material or pathogens, or having them roofed or backfilled with suitable material.

For these reasons, efforts were made to secure land outside the park near Coffin Bay that could provide suitable habitat for the herd. Since this was achieved in February 2004 with assistance from State Government funding, all horses have been removed from the park.

A small number of cattle surviving from original pastoral stocks had historically been recorded from the park. These have not been sighted for several years and any that still remain will be removed.

Feral Honeybees (*Apis mellifera*) are established throughout the reserves and these pose a threat to native animals that rely on tree hollows sink holes, limestone cavities, old warrens and other shelters. During summer they are often attracted to campsites, picnic areas and other areas where visitors may have water.

Emphasis will be placed on developing an integrated pest control program, to maximise effectiveness based upon the known inter-relationships between pest plant and animal species.

Objectives

Restore wildlife habitat and minimise the impacts of feral animals on the parks.

Actions

- Encourage the restoration of wildlife habitats by developing integrated control programs for pest plants and animals.
- Continue programs to eradicate rabbits, foxes and cats.
- Investigate methods of feral bee control and initiate where appropriate.

4.3 Cultural Heritage

4.3.1 Aboriginal Heritage

Dreaming

For Aboriginal people, land and waters have many interconnected complex meanings and values. The significance of land and waters is central to Aboriginal people's lives: at birth, death, ceremonies and socially, whilst hunting, gathering camping, and travelling. The term "Dreaming" is the term used to describe the combination of these aspects of life, religion, mythology, law and history which includes the past, the present and the future.

The land or waters with which an Aboriginal person has a traditional or contemporary association is commonly referred to as "Country." Both "Country" and "Dreaming" are complex concepts that are difficult for non-indigenous people to understand. For example "Dreaming" can be a site located in song, in physical space or embodied in an object. Its physical, social or psychological importance can vary according to the speaker's traditional country, gender, age and personal experience. For these reasons the "Dreaming" is rarely mapped in the western sense but the significance of a site is integral for Aboriginal people.

Furthermore, mythological sites associated with these stories are known only to the Aboriginal people with cultural knowledge of the area. These sites are often landscape features which can be one or many trees, rocky outcrops, riverbeds or water holes. These sites physically represent the ancestors and their activities in the story with the knowledge and "Dreamings" associated with these sites passed down through stories of travellers, ancestors and mythological beings. Many "Dreaming Stories" travel throughout an area and may be known as a "Dreaming Trail" or "Track". Some stories focus on specific "sacred sites". These stories and traditions exclusively belong to Aboriginal people. Who tells them, where they are told, to whom they are told and when, are all a part of their culture and must be respected.

For millennia, the Eyre Peninsula has been home to Aboriginal people. Tindale (1974) reports that the Aborigines living in the area belonged to the Nauo tribe, whose territory of about 20,000 square kilometres took in the southwestern part of Eyre Peninsula. Within this area they mainly occupied coastal scrub country.

Schurmann (1879) gives some insight into their lifestyle. In addition to meat and some varieties of fish, a wide range of vegetable foods were collected. Karkalla or Pigface (*Carpobrotus rossii*) fruit grew in great abundance and large numbers of people congregated in the sandhills between Coffin Bay and Sleaford Bay to harvest Nondo Beans, the green pods of Coastal Wattle (*Acacia longifolia* var *sophorae*). Larger game animals such as kangaroos and emus were speared and smaller animals such as wallabies and kangaroo rats were forced from the scrub with the use of fire.

The area is rich in Aboriginal cultural heritage. A number of sites of significance, including the remains of campsites and stone fish traps, exist in the Coffin Bay area. However, no comprehensive survey has been carried out to date.

The Aboriginal people suffered from European contact. The period of early contact with Europeans was particularly bitter and violent. Sealers working on Kangaroo Island in the early 1800s kidnapped Aboriginal women from Eyre Peninsula, taking them to Kangaroo Island. After colonial settlement of South Australia, there were numerous armed conflicts between Aborigines and Europeans in the area (Tindale, 1974). Aboriginal resistance to colonists contributed to the near-abandonment of Port Lincoln in the early days of settlement (Wanklyn and Wanklyn, n.d.).

The parks of the Coffin Bay area, with the exception of Four Hammocks Islands and Perforated Island, are included in the Nauo-Barngarla Native Title claim (SG 6021/98). This claim was accepted by the National Native Title Tribunal for registration on 7 February 2000.

Aboriginal Heritage Act 1988

Under the *Aboriginal Heritage Act 1988*, the South Australian Government is responsible for the protection and preservation of sites, objects and remains of significance to Aboriginal people. The Department of Aboriginal Affairs and Reconciliation maintains a Central Archive of more than 6000 Aboriginal site recordings.

The *Aboriginal Heritage Act* defines a site as 'An area of land that is of significance to Aboriginal tradition, Aboriginal archaeology, anthropology or history.'

Site types include:

Archaeological sites, campsites, middens, artefact manufacturing sites. These may occur in isolation or in conjunction with other sites. These may contain scattered pieces of stone leftover from the manufacture of tools, stone or clay hearths, and food remains such as shellfish or animal bone. Middens are characterised by large deposits of shells. They may also contain animal bone, charcoal, stone tools and possibly skeletal remains.

Burial sites. Can be historic or pre Contact. In some areas burials are marked with stones, logs or brushwood at the head or sides of the grave, however most burial sites are only recognisable when they become exposed by erosion or by disturbance. Many are found in sandy areas where they are readily exposed through erosion.

Quarry sites - stone tool, grindstone and ochre quarries. Quarries can be identified from signs of chipping or hammering on suitable rock outcrops and from associated surface scatters of flaked stone.

Stone arrangements- ceremonial, hunting hides, and fish traps. Arrangements can be made out of stone timber or earth. They are distinguished by large or small arrangements of stones laid out in patterns on relatively clear ground, but can also be found across watercourses as fish traps.

Mythological sites. Mythological sites are dreaming sites. These may include natural features in the landscape, such as single trees, rock formations and waterholes to mountain ranges.

Historic sites. Historic sites can include missions; ration depots, birthplaces and fringe camps.

Paintings and engravings. Painting and engraving sites are widely distributed and are found in a range of environments where suitable rock surfaces, shelters and overhangs are found.

Scar trees. Scar trees exhibit scars on the trunk or limbs where bark has been removed for various purposes to make canoes, shields, dishes or shelters. These are also termed Culturally Modified Trees.

Land, developed or undeveloped, can contain sites. Sites relate to living patterns and use of environmental resources such as water, animal and vegetable foods and stone by Aboriginal people. They also relate to spiritual beliefs and ceremonial activities.

Certain landforms that are likely to contain evidence of Aboriginal pre-historic occupation include:

- *Claypans, lakes and estuaries* (stone artefact scatters, shell middens, rock art, stone arrangements, campsites or ovens)
- *Rocky outcrops* (quarries, rock art, rock holes, stone arrangements, ceremonial religious sites, stone artefact scatters)
- *Dunes* (stone artefact scatters, shell middens, burials, campsites or ovens)
- *Bush or forested areas* (stone artefact scatters, campsites or ovens)

The parks of the Coffin Bay area contain a number of Aboriginal archaeological sites. Although numerous sites have been recorded and registered under the *Aboriginal Heritage Act*, a comprehensive archaeological survey of the parks has not yet been undertaken. Identification of sites, in conjunction with representatives of the Native Title claimants and local Heritage Committees, will facilitate better protection of important cultural resources.

To ensure the protection of sites and to avoid inadvertent damage, DEH will consult with DAARE and the local Heritage Committee before commencing any development works.

There are clearly benefits to park management and to the use and enjoyment of the park by visitors, if indigenous people who have traditional affiliation with the land are involved in its care. Aboriginal employment initiatives were established within the District in the early 1990s, leading to the appointment of an Aboriginal Park Assistant. Further opportunities exist, and should be mutually developed, to increase Aboriginal involvement in many areas and aspects of park management.

Therefore DEH will, within the context of Government policy, work with local Aboriginal people to develop mechanisms to enable them to strengthen their cultural links with the parks and explore opportunities for commercial enterprises.

4.3.2 Post-colonial Heritage

Colonial history in the Coffin Bay area is first recorded in Matthew Flinders voyage of discovery in 1802 when he surveyed and mapped much of the coastline of lower Eyre Peninsula, naming Coffin Bay in the process.

Whaling and sealing took place throughout coastal South Australia during the early 1800s, but these activities were not well documented. Such was the impact upon populations of seals and whales that the industry collapsed within a few decades due to depleted stocks. However, whale bones and relics from this early industry are still visible at several locations in Coffin Bay National Park, and one site is recorded on the State Heritage Register within Coffin Bay National Park. A Heritage conservation plan needs to be developed for this site, and any developments proposed need to be approved by the Development Assessment Commission, in accordance with the *Development Act 1993*.

Pastoral use of the area covered by Coffin Bay National Park and Kellidie Bay Conservation Park dates from the first Occupational License issued in 1847. Since that time horses, cattle and sheep, have grazed the area and small areas have been ploughed and sown with wheat and lucerne. Evidence of this history is found in ruins, yards, wells and waterholes. Most of the structures were constructed with local materials such as sheoak and limestone, and are in advanced states of deterioration.

Coffin Bay National Park and Kellidie Bay Conservation Park have experienced over 140 years of pastoral land use. In the mid-19th century, thousands of sheep were grazed at the western end of the Peninsula. Horse and cattle grazing, and fodder cultivation also occurred but it soon became clear that the land could not sustain such use.

In the latter part of the 19th Century, a small township developed within Kellidie Bay Conservation Park and thrived for a time harvesting native Coffin Bay Oysters. Although the settlement was soon abandoned as stocks of the oyster were depleted, traces of this shantytown, which is thought to have supported more than a hundred people, still remain.

Several of the islands in Coffin Bay were mined for guano in the late 1800's. As a result the vegetation towards the centre of these islands, formerly a tall shrubland - low woodland, tends to be moderately to severely disturbed and invaded by introduced species.

Relics of early colonial association with the parks of the Coffin Bay area are still evident today, but a comprehensive survey of heritage sites in the parks is yet to be undertaken.

Objectives

Conserve and protect significant cultural heritage sites and provide appropriate interpretive material.

Develop and strengthen Aboriginal involvement in the parks of the Coffin Bay area.

In conjunction with nominated Aboriginal representatives, protect and interpret Aboriginal culture and cultural sites.

Actions

- Consult Aboriginal people who have a traditional association with the land, Native Title Claimants and relevant State and Federal Aboriginal heritage authorities, in decisions regarding the management of cultural heritage.
- Identify, record, protect, conserve and monitor known or relocated sites and items of archaeological, anthropological, cultural and historical significance located in the park, in cooperation with the local Aboriginal communities, Department of Aboriginal Affairs and Reconciliation, Heritage branch, DEH, and other relevant authorities and organisations. Aboriginal and historic cultural heritage sites require conservation plans to facilitate appropriate management.
- In consultation with the Aboriginal community, Heritage branch, DEH, and other relevant authorities, research and record cultural and historic sites and stories that relate to the park and, where appropriate, develop interpretive material and tourism programs for visitors. Interpretive material may include web-site, brochures, site signage and displays.
- All archaeological, anthropological and historic studies within the park should be developed in consultation with Heritage branch, DEH, and/or DAARE and submitted for inclusion on the State Heritage Register and/or the DAARE Central Archive.
- With the assistance of the local Aboriginal people, identify all local Aboriginal community groups with an interest in the parks of the Coffin Bay area. Contact, develop and support forums that achieve an ongoing dialogue with all groups.
- Seek local Aboriginal community support to improve DEH staff understanding of local Aboriginal people's traditional connections with the park and its surrounding areas.
- Continue to support Aboriginal interest in employment in park operations.
- Identify post-colonial cultural sites and provide for their protection and interpretation.

4.4 Fire Management

Since 1973 there have been ten reported fires in the parks, ranging in size from 0.5 hectares to 5,300 hectares. With the exception of an escaped prescribed burn and a case of suspected arson, all fires have been caused by lightning strikes.

Summer electrical storms with numerous lightning strikes generally occur in the period November to March across the district. Past incidences of lightning-caused fires suggest that lightning strikes can start fires anywhere within the reserves.

Coffin Bay National Park conserves a variety of habitats primarily comprising coastal heath, mallee low woodland, sand dune shrublands, swales and tea-tree swamplands. The majority of these habitats are mature, long unburnt and carrying high fuel loads. These habitats are interspersed with mobile sand dunes which may limit the area of fires but which may also limit access for suppression operations.

The Coffin Bay township is at risk from fires burning in Kellidie Bay Conservation Park to the east or Coffin Bay National Park to the southwest. While protection measures have been implemented adjacent the reserve boundaries, adjoining properties generally have not allowed for protection measures on their land. In conjunction with DEH, prevention measures, risk awareness and pre-fire preparedness by adjoining property owners is a significant issue for minimising the impact of fire. Although steep dune faces adjoining the south side of Coffin Bay township may offer some degree of protection from fire, the risk of property fires caused by wind-blown embers is a significant issue for residents. There is a need to collaboratively develop fire planning for life and property protection.

DEH has a responsibility to manage all aspects of fire in its reserves. Fire management is guided by DEH fire management planning. A Fire Management Plan for the parks of the Coffin Bay area will be developed in consultation with CFS, the district Bushfire Prevention Committee and other key stakeholders, interest groups and neighbours.

The plan will be reviewed and updated regularly and form the basis of ongoing fire management. Fire management planning will :

- identify natural and cultural heritage values and built assets;
- provide a framework for the management of wildfire suppression, including identification of strategic access and control lines;
- provide a framework for prescribed burning for ecological management and fuel reduction purposes; and
- identify performance indicators.

Planned fires, where appropriate and ecologically sustainable, will be used to reduce fuel hazards with the aim of protecting life and property.

The impact on wildlife of wood gathering by visitors and the minimisation of potential ignition sources are primary considerations in the management of campfires. Specific fire sites will be provided in camping areas and alternative fuel sources will be encouraged to limit impacts.

Objectives

Manage fire to ensure the protection of life and property, the maintenance of biodiversity and the protection of natural, cultural and built values.

Actions

- Develop, implement and review fire management plans in association with CFS and other stakeholders.
- Until a fire management plan is developed :
 - maintain existing fire access tracks and only create new tracks if there is no alternative means to prevent the loss of life, property or biodiversity assets;
 - undertake strategic hazard reduction burning in order to protect life and property.
- Provide campfire sites in Coffin Bay National Park and restrict use to these sites.
- Prohibit the collection of local firewood, investigate alternative fuel sources for campfires and develop a strategy to make them available to park visitors.

4.5 Recreation and Tourism

4.5.1 Visitor Use

Coffin Bay National Park is a popular venue for a variety of outdoor recreation activities, including sightseeing, fishing, diving, four wheel driving, bushwalking, boating and surfing. Visitor use of the parks is concentrated around the coast. The rugged southern coastline and the protected bays and beaches along the northern shores are the parks' major attractions for both day visitors and campers.

A traffic counter is installed at the main entrance to Coffin Bay National Park. This records raw traffic data, giving an indication of visitor numbers. Visitation has been increasing annually since records began (13,000 vehicles in 1997/98 to 22,650 in 2002/03). Assuming average vehicle occupancy of 2.7, an estimated 61,155 people visited the park during the 2002/03 financial year.

4.5.2 Vehicle Access

Conventional Vehicles

The Point Avoid Road from the Coffin Bay National Park entrance, which provides conventional vehicle access to Point Avoid, Almonta Beach, Yangie Bay and Avoid Bay, was upgraded in 2000. Increased visitation is anticipated as a result of this improved access.

Four Wheel Drive Vehicles (4WD)

Many tracks in Coffin Bay National Park are suitable for 4WD vehicles only. This includes the Gunyah Beach track and all access tracks on Coffin Bay Peninsula beyond Yangie Bay. These tracks negotiate unconsolidated sand dunes, limestone outcrops and sandy beaches. Four wheel drive vehicles, operated by inexperienced drivers, sometimes become bogged in loose sand.

Roads and access tracks established in the parks will be maintained to enhance visitor enjoyment. In some instances there are multiple tracks adjacent to each other or leading to the same destination. In recent times 4WD vehicles have pushed past traditional recreation sites to gain access to more remote areas. This has led to tracks becoming established in unsuitable areas, resulting in vegetation damage in fragile coastal environments, visual intrusions to the natural scenic qualities and disturbance to heritage and cultural sites. Unplanned tracks are often hazardous and have sometimes required less experienced drivers to seek vehicle recovery. Unsustainable tracks will be closed and rehabilitated. Degraded sections of the 4WD track within Coffin Bay National Park have been upgraded using materials gained from within the park.

Figure 1 identifies those tracks that will remain open for public access.

A speed limit of 40 kph applies on all park roads.

Objectives

Provide appropriate vehicle access within Coffin Bay National Park.

Actions

- Restrict public vehicle access to the roads and tracks shown in Figure 1, monitor vehicle use and address public risk and environmental issues.
- Close inappropriate vehicle tracks and rehabilitate where necessary.
- Maintain conventional vehicle access roads and upgrade where possible.
- Using in-situ materials, maintain where possible, the designated 4WD access tracks, realigning sections where necessary to avoid low-lying swampy environments subject to inundation.
- Maintain the Gunyah Beach access route through the dune field by marking the appropriate vehicle corridor. Access along the beach is limited to 3 km in either direction from entry point.

4.5.3 Boat Access

Most recreational activities in the parks of the Coffin Bay area are water-based. Many people use the waters around the parks to fish, sail, canoe, dive, swim, surf and explore. As these activities mostly occur outside the park boundaries, they do not fall within the jurisdiction of the management plan. Many people however, gain access to the parks by boat, particularly along the Coffin Bay coast between Coffin Bay township and Point Sir Isaac.

When visitors enter the park from a boat, they are subject to the provisions of the Act and the management prescriptions outlined in this plan.

Objectives

Ensure that beaches are managed in accordance with the *National Parks and Wildlife Act* and objectives of this plan.

Actions

- Ensure visitors who enter the park by boat comply with the *National Parks and Wildlife Act*, its Regulations and with the provisions of this plan.

4.5.4 Walking Trails

There are several walking trails in the parks, which are developed to varying degrees. These will be enhanced by additional signs, interpretive material and identification markers along the routes.

Walking Trails within Coffin Bay National Park:

Yangie Lookout

Commencing at the Yangie campsite; a short climb with views overlooking Yangie Bay and Marble Range: 1 km return, 20 minutes.

Yangie Island

Commencing at the Yangie campsite; this trail leads to a close-up view of Yangie Island from the adjoining beach: 5 km return, 1 hour and 40 minutes.

Kallara Trail

Commencing at the Yangie campsite; provides insights to the local vegetation: 2 km loop walk, 40 minutes.

Yangie Bay to Long Beach

Walk between the vegetated dunes and come out on the expansive Long Beach: 10 km one way, 3.5 hours.

Black Springs

Commencing at the Black Springs campsite; following the coast around the headland overlooking sheltered Port Douglas: 2 km return, 40 minutes.

Black Rocks

Commencing just past the Black Springs turn-off; travels south through vegetated dunes to the rugged coastline of Avoid Bay with views overlooking Lake Damascus along the way: 6 km return, 2 hours.

Sudden Jerk Lookout

Commencing near Sensation Beach; overlooking the rugged coastline and Sudden Jerk Island: 2 km return, 40 minutes.

Boarding House Bay

Commencing near Sensation Beach; a rugged coastline of cliffs, beaches and offshore reefs are encountered after walking through coastal heath, samphire flats and mallee woodlands: 23 km return, 8 hours.

Walking Trails within Kellidie Bay Conservation Park:

The Oyster Walk

A popular walk linking Kellidie Bay Conservation Park and Coffin Bay National Park via a scenic coastal route. Views of the town and surrounding area may be obtained from the lookout in Kellidie Bay Conservation Park: 12 km, visitors can enjoy sections at a time if desired.

Objectives

Provide and maintain appropriate walking trails within Coffin Bay National Park and Kellidie Bay Conservation Park.

Increase visitor understanding and appreciation of park values and management.

Actions

- Maintain and improve existing walking trails within Coffin Bay National Park and Kellidie Bay Conservation Park.
- Provide additional walking trails where appropriate to cater for a range of walkers.
- Provide signs for the trailhead of each walking trail and interpretive material where appropriate.
- Monitor the use of walking trails to assist with future management.

4.5.5 Entry and Camping Fees

Camping fees were implemented when Coffin Bay National Park was gazetted in 1982. A self-registration system was established in 1995. This system has proven to be extremely cost-effective due to the high compliance rate. An annual vehicle pass has also been introduced, providing for unlimited entry and camping to the parks of Eyre Peninsula and the Far West. Revenue generated through entry and camping fees is paid into the General Reserves Trust Fund, which is used to improve visitor services and facilities within the parks in the region.

Objectives

Maintain the effective collection of entry and camping fees within Coffin Bay National Park.

Actions

- Monitor and ensure compliance with the self-registration system at Coffin Bay National Park.
- Establish and maintain a database of visitor statistics.
- Ensure that park visitors have adequate opportunity to purchase annual vehicle passes within the Coffin Bay township.
- Inform park visitors of projects funded through entry and camping fee revenue.

4.5.6 Camping and Day Visit Areas

The following sites are accessible by conventional vehicle within Coffin Bay National Park:

Long Beach

The eastern portion of this beach extends to the Coffin Bay township area. Vehicle access to some areas of this beach is tolerated. This shallow, sheltered beach is popular with park visitors and local residents alike.

Templetonia Lookout

Located approximately ten kilometres from the entrance of Coffin Bay National Park, this lookout provides spectacular, panoramic views.

Point Avoid Area

Exposed to the Southern Ocean, Point Avoid is a rocky headland with coastal dunes, cliffs and heathlands that marks the eastern extent of Avoid Bay. A lookout provides views of Golden Island, and a stairway leads to the western end of Almonta Beach. This is a popular sightseeing and recreational fishing area. Facilities include a car park, a stairway to Almonta Beach, toilets at Golden Island Lookout, and information signs.

Almonta Beach

Located on the southern coastline east of Point Avoid, Almonta Beach is an exposed surf beach backed by coastal dunes and mobile dune fields. The site is principally used for nature observation, fishing and occasional low-key camping.

Little Yangie Bay

A shallow bay located on the sheltered northern coastline, Little Yangie Bay is a popular camping, canoeing, fishing and nature study area. Facilities at this location include campsites, toilets, washing water and a nature trail.

The following sites are accessible by 4WD vehicle within Coffin Bay National Park:

Flat Rock

Located between Point Avoid and Avoid Bay, Flat Rock is an area of exposed coastline with wave washed rock platforms. The area is used for surfing and fishing. Safety barriers protect visitors from unstable limestone cliffs. An informal camping area exists behind the vegetated sand dunes.

Big Yangie Bay

Big Yangie Bay, adjacent to Little Yangie Bay, is popular for camping and picnicking.

Black Springs Campsite

Located on the coast of Coffin Bay Peninsula, north of Lake Damascus, the campsite has a sheltered sandy beach with tea-tree and mallee vegetation providing shade. Post and rail fencing has been established to delineate vehicle parking sites. The area has a toilet and is accessible by 4WD vehicle or boat.

Seven Mile Beach

Situated on the northern coastline, this sheltered beach provides 4WD access to the western portion of Coffin Bay Peninsula. The beach is backed by vegetated and mobile dunes, and is a popular picnic and fishing location.

Morgans Landing Campsite

Located at the western end of Seven Mile Beach, Morgans Landing is a camping area within the tea-tree vegetation behind a coastal foredune. The area has toilets and is accessible by 4WD vehicle or boat. Post and rail fencing delineates parking areas and the site can accommodate five vehicles.

Phantom Cove

Located on the eastern coastline south of Point Sir Isaac, Phantom Cove is a sheltered area with mallee and tea-tree vegetation. Several informal camping sites are located along the coast, each accommodating one or two vehicles.

Point Burgess

Situated on the eastern coastline south of Point Sir Isaac, Point Burgess provides a sheltered camping area amongst tea-tree and patches of mallee.

The Pool

The Pool is located on the eastern coastline immediately south of Point Sir Isaac. The Pool is a sandy, sheltered beach. A few camping spots, each accommodating one or two vehicles, and a toilet are located in the tea-tree and mallee vegetation. The site may be accessed by 4WD vehicle or boat.

Point Sir Isaac Area

This area includes the northern most point of Coffin Bay Peninsula, where there is a lighthouse, Seasick Bay and Point Sir Isaac proper. No facilities are provided on this exposed part of the coastline. A 4WD track leads to the lighthouse. This area is popular for fishing and diving.

Mullalong Beach

A small exposed beach on the north west coastline of Coffin Bay. Mullalong Beach is a popular surfing and fishing location.

Reef Point Lookout

An exposed coastal site, Reef Point Lookout is located on the west coast of Coffin Bay Peninsula. The area is popular for sightseeing, fishing and diving. Safety barriers protect visitors from unstable limestone cliffs.

Whidbey Wilderness Zone

This remote area of the park, located at the south western extremity of Coffin Bay Peninsula, has been managed as a wilderness zone since the mid 1980s. Visitors may access the area on foot, and apart from walking trails, there are no facilities.

Sensation Beach

A popular ocean fishing beach located on the exposed southern coastline of Coffin Bay Peninsula. A sheltered bush campsite with no facilities is located approximately 1 kilometre behind the beach in mallee vegetation. Four wheel drive vehicles may access the western end of the beach.

Gunyah Beach

Located on the exposed southern coastline, this popular salmon fishing beach is accessed by a marked 4WD track through an extensive mobile dunefield.

Objectives

Ensure that visitors may enjoy sites of interest and stay at suitable campsites without compromising natural values.

Actions

- Provide access to, and suitable interpretive material and facilities at, popular campsites and sites of interest without compromising natural values.
- Monitor the impacts of vehicles and campers at Sensation Beach and modify the level of access if necessary to ensure wilderness values are not compromised.

4.6 Commercial Activities and Other Landuse

4.6.1 Tour Operators

Several commercial tour operators utilise the parks of the Coffin Bay area. All operators are required to apply for a Commercial Licence, pursuant to the *National Parks and Wildlife Act 1972*. Permits are issued to applicants who meet DEH requirements. Licence fees are paid into a General Reserves Trust Fund, which is used to improve visitor services and facilities within these parks.

Objectives

Regulate commercial tours within the parks to ensure their activities are compatible with park values and comply with the objectives of the *National Parks and Wildlife Act 1972*.

Actions

- Issue Commercial Licences to tour operators, subject to compliance with this plan and the provisions of the *National Parks and Wildlife Act*.

4.6.2 Commercial Activities

Commercial activities that comply with the *National Parks and Wildlife Act 1972* and the objectives of this plan may be considered, but will require a Commercial Licence, approved by the Director of National Parks and Wildlife.

Commercial filming in parks requires a Commercial Filming Agreement to be obtained, pursuant to the *National Parks and Wildlife Act 1972*. Permits are issued to applicants who meet DEH requirements. Fees are paid into the General Reserves Trust Fund and used to improve visitor services and facilities within the parks of the region.

Objectives

Regulate commercial activities within the parks of the Coffin Bay area to ensure they are compatible with park values and comply with the objectives of the *National Parks and Wildlife Act 1972* and this plan.

Actions

- Issue Commercial Licences/Leases for commercial activities, including Commercial Filming Agreements for filming where appropriate, subject to compliance with this plan and the provisions of the *National Parks and Wildlife Act*.

4.6.3 Leases and Licences

Historically, there were several apiary sites within Kellidie Bay Conservation Park. These have not been occupied since 1992. DEH does not intend to re-open these sites for the following reasons:

- apiarists may access floral resources of the park from private land on its perimeter; and
- reopening the sites would arrest their natural regeneration.

Additionally, there are two licensed shack sites near the northwestern end of Kellidie Bay Conservation Park which predate the proclamation of the park. Lessees have life tenure, after which the leases expire and control of the sites reverts to DEH.

Objectives

Allow abandoned apiary sites to regenerate within Kellidie Bay Conservation Park.

Have regard to leases conditions and the DEH shack site policy for national parks and reserves.

Actions

- Prohibit the re-opening of abandoned apiary sites within Kellidie Bay Conservation Park and allow the sites to regenerate.
- Enforce shack lease covenants.

4.6.4 Public Utilities (ie SA Water, ETSA Utilities)

SA Water has infrastructure associated with supplying water to the Coffin Bay township located within Kellidie Bay Conservation Park. This infrastructure comprises of a large storage tank, treatment plant and associated pipeline and access track. It is located in the southwestern portion of the park utilising an elevated location to provide pressure for the town water supply.

ETSA Utilities maintain a power line, providing power for the Coffin Bay township and SA Water infrastructure, which passes through Kellidie Bay Conservation Park. Management of the easement for this power line includes periodically pruning vegetation. Prior to vegetation pruning, ETSA Utilities notifies DEH of its intention.

Objectives

Ensure both SA Water and ETSA Utilities have regard to DEH policies, Regulations under the *National Parks and Wildlife Act 1972* and the provisions of this plan.

Actions

- Liaise with public utilities to ensure that their activities do not compromise park values and that they have regard to the objectives of the *National Parks and Wildlife Act* and this plan.

4.6.5 Marine Navigation Aids

The Department for Transport and Urban Planning (Marine and Harbours) holds a 0.929 hectare site containing the lighthouse at Point Sir Isaac within Coffin Bay National Park.

A Commonwealth navaid facility exists on a 0.36 hectare site on the southernmost of the Four Hummocks Islands. This island is currently held by the Minister for conservation purposes, but has not yet been included in the adjacent Whidbey Isles Conservation Park.

Objectives

Ensure that maintenance of marine navigation aids does not impact negatively on the natural assets of the parks.

Actions

- Ensure relevant authorities liaise with DEH with regard to the maintenance of marine navigation aids, where impacts to the parks may occur.

4.6.6 Aquaculture

Pacific Oyster farming has been developed within the waters of the Coffin Bay area since the release of a research report in 1986 (Grove-Jones, 1986). A Coffin Bay Aquaculture Management Plan was released in 1988 and reviewed in 1995. Subsequently, two draft Lower Eyre Peninsula Aquaculture Management Plans, including the Coffin Bay area, were released by PIRSA (Fisheries) in 1996, and a final plan was published in April 1997. Major issues considered by the plans included poor oyster productivity and the marginal commercial viability of some areas. The current plan provides for relocation of some oyster feedlots to areas of Port Douglas, adjacent to Coffin Bay National Park, and the boundaries of the park were modified to accommodate this.

Aquaculture within the Coffin Bay waterway has continued to expand over recent years. The general impacts of aquaculture on the parks include netting, ropes and other debris washing up

on beaches. Park management should ensure that aquaculture activities have minimal impact on the parks.

Objectives

Ensure that aquaculture activities do not compromise park values.

Actions

- Liaise with PIRSA (Fisheries) and the aquaculture industry to assist with the appropriate implementation of the Lower Eyre Peninsula Aquaculture Management Plan and its amendments.
- Review new applications for aquaculture tenure and monitor the impacts of existing aquaculture to ensure there is minimal impact upon the biological and scenic values of the parks of the Coffin Bay area.

4.6.7 Mining Leases

Mineral exploration and mining is prohibited in all parks of the Coffin Bay area, with the exception of approximately 1030 hectares in the eastern end of Coffin Bay National Park (see Figure 1), where OneSteel (formerly BHP) operates 70 Mining Leases to extract lime sand (ML3259 to ML3328). These mining tenements were in operation prior to the park being proclaimed and will continue to operate until they expire or are abandoned, in accordance with s43(5)(a) of the *National Parks and Wildlife Act 1972*. Although recently reactivated following several years of inactivity, they are due to expire on 31 December 2006. Direct impacts from mining are minimal, given that the sand dunes in the area are generally unconsolidated and mobile.

The exercise of any mining rights, however, is subject to compliance with this plan of management.

Aleppo Pines have been planted around the old loading facilities of the mining operations. Whilst this facility is not within the Park Boundary there is potential for the now mature pines to spread seed into the park and surrounding lands. OneSteel has undertaken, as part of their Mining and Rehabilitation Plan, to control the Aleppo Pines in this area in consultation with DEH.

Objectives

As far as possible, ensure that mining activity within Coffin Bay National Park has minimal impact on the park, especially with regard to the introduction of exotic plants, animals or pathogens and any reduction in landscape quality, biological values or water quality.

Actions

- Ensure pest plants, in particular Aleppo Pines, are removed from the mining sites, and strategies to minimise their spread are undertaken.
- Ensure that mining sites are rehabilitated where mining has been completed.
- Ensure that lessees maintain communication with DEH concerning all mining operations.
- Investigate the potential for a percentage of mining royalties to be allocated specifically for the management of Coffin Bay National Park.

4.7 Management Arrangements

4.7.1 Partnerships and Cooperative Management

The Department for Environment and Heritage supports and promotes partnerships and cooperative management arrangements to establish integrated natural resource management. This requires the development of substantial working relationships with government agencies, local authorities and local communities.

With regard to the parks of the Coffin Bay area, this involves developing working relationships with neighbours, local land managers, mining lessees, Heritage Agreement owners, the representative Aboriginal Heritage Committee and Native Title Claimants.

DEH also recognises the importance of developing ongoing partnership arrangements, participating in regional management programs and contributing to community organisations

and boards including Landcare groups, Soil Conservation Boards, Animal and Plant Control Boards and Local Government.

DEH is committed to reconciliation and to the development of partnerships with the indigenous communities to cooperatively manage the parks of the Coffin Bay area in a way that respects both contemporary and traditional culture, knowledge and skills. Partnerships involve the delivery of programs that promote reconciliation, cultural awareness, indigenous employment and training, cooperative management and indigenous cultural heritage management on parks.

Partnership arrangements should be developed to provide a positive direction for the shared development and management of the park to fulfil the objectives of this plan.

Objectives

Develop and maintain partnerships and/or working relationships with organisations, statutory bodies and others to assist with the management of the park and help fulfil the reserve's potential without compromising its natural values.

Actions

- Consult with the local council, relevant management boards, the local community and other relevant bodies to explore the benefits of partnership arrangements that will support future management decisions on issues of common interest.
- Promote the positive outcomes of the "Ark on Eyre" program in the parks to the wider community to encourage regional participation, maximising biodiversity outcomes.
- Encourage and contribute to the development of partnership arrangements to integrate biodiversity and recreation management in the region, with organisations that have an interest in contributing to the sustainable management of the park.
- Involve the Aboriginal community, Native Title Claimants and the nominated Aboriginal Heritage Committee in the cooperative management of the reserve and the preservation of their indigenous cultural heritage.
- Promote discussion with Aboriginal people who have a traditional association with the land comprising the park to better understand and appreciate their culture, lifestyle and knowledge of the reserve.

4.7.2 Community and Volunteer Involvement

The Friends of Coffin Bay National Park formed in 1990. The purpose of a Friends Group is to provide assistance with the care and maintenance of parks and to assist with delivering information to park visitors.

Other volunteer and community-based groups active within the parks of the Coffin Bay area include the Campground Hosts, the Lower Eyre Peninsula Four Wheel Drive Club, the Society for Growing Australian Plants and the DEH Eyre Consultative Committee.

Volunteer activities undertaken in the parks include fox baiting, pest plant control, habitat restoration, plant propagation, walking trail construction and maintenance, monitoring programs and visitor information.

Such community assistance is of great benefit to DEH in helping to manage parks and to provide links with the broader community.

Objectives

Develop and encourage community support for the management of parks in the Coffin Bay area.

Actions

- Provide administrative support for the activities of the DEH Eyre Consultative Committee.
- Provide opportunities for volunteer and community groups by facilitating the implementation of programmed activities.

4.8 Future Directions

4.8.1 Additional Land

Over time a number of parcels of land have been purchased or transferred to the management of DEH with the intention of dedicating them as part of the parks of the Coffin Bay area. These include parcels of Crown land managed for conservation purposes, eg the southernmost island of the Four Hummocks Islands, which has not yet been added to the park.

The Report to the Minister for Environment and Heritage on areas of southern Eyre Peninsula recommended for protection under the Wilderness Protection Act 1992 (DEHAA 1999) recommended that "consideration should be given to the incorporation of a region of sea between Avoid Island and the mainland, Black Rocks and the mainland, and regions surrounding these islets for a distance of up to two kilometres." The Government is considering its policy on marine protected areas. Any subsequent processes will give consideration to these proposals.

The inclusion of additional land or waters currently not within the reserve system can improve the long-term integrity of reserves by further protecting areas of conservation significance, achieving links between areas of quality habitat, improving logical boundaries and providing more effective management of public use.

Objective

Improve the long term integrity of the parks of the Coffin Bay area.

Actions

- Assess the ability of all Crown land in the region, including waters surrounding the parks of the Coffin Bay area, to add to the integrity of the reserves and incorporate suitable land in the parks.

5 SUMMARY OF MANAGEMENT ACTIONS

ACTION	PRIORITY	DURATION
Native Vegetation		
Integrate vegetation rehabilitation and habitat restoration programs with regional pest plant and feral animal control.	High	Ongoing
Continue revegetation where necessary to improve visitor amenity and undertake rehabilitation of degraded vegetation.	Medium	3 years
Identify and monitor populations of rare, vulnerable and endangered plant species. Develop and implement plans, if required, for their conservation.	High	Ongoing
Monitor impacts on vegetation, and implement remedial management programs where necessary.	High	Ongoing
Re-establish Drooping Sheoak-Dryland Tea-tree woodland in areas where this association has been degraded.	High	5 years
Native Fauna		
Integrate regional pest plant and feral animal control with vegetation rehabilitation and habitat restoration, and where feasible, reintroduce locally extinct or endangered native animal populations.	High	5 years
Identify and monitor populations of rare, vulnerable and endangered animal species and, if necessary, develop and implement plans for their conservation.	High	Ongoing
Monitor population trends and impacts of Western Grey Kangaroos within the mainland parks and if necessary, reduce the kangaroo population to a sustainable level by targeted culling.	High	Ongoing
Monitor and manage the impact of vehicle access on beach-nesting bird species (eg Hooded Plover).	High	Ongoing
Continue to survey and monitor populations of the Australian Sea-lion and New Zealand Fur-seal on offshore islands, in conjunction with the CSIRO.	High	Ongoing
Monitor and manage the impact of recreational activities on key wildlife species (eg Osprey and White-bellied Sea-eagle).	High	Ongoing
Encourage scientific research to enhance wildlife management.	Medium	Ongoing
Introduced Plants		
Undertake, where practicable, control of invasive pest plant species as part of the regional integrated wildlife restoration programs.	High	Ongoing
Continue programs to eradicate invasive weeds (eg African Boxthorn, Aleppo Pine, Bridal Creeper, Olive and Myrtle-leaved Milkwort) from the parks of the Coffin Bay area.	High	Ongoing
Monitor the effectiveness of weed eradication programs and implement new techniques when available.	Medium	Ongoing
Increase awareness in the local community of the invasive nature of some ornamental plants in gardens (eg Myrtle-leaved Milkwort), and encourage their replacement with suitable indigenous species.	Medium	Ongoing
Control non-invasive pest plant species in sites subject to disturbance.	Low	Ongoing
Introduced Pathogens		
Comply with the provisions of the <i>Threat Abatement Plan For Dieback Caused By The Root-Rot Fungus Phytophthora cinnamomi</i> (Environment Australia 2001).	High	Ongoing
Increase DEH staff awareness of the potential for introduction and establishment of <i>Phytophthora cinnamomi</i> , susceptible plant species and indicators of its presence.	High	Ongoing
Ensure all soil is removed from earth-moving and construction equipment entering the park, to reduce the risk of <i>Phytophthora</i> introduction.	High	Ongoing
Provide boot-cleaning stations for track users if necessary.	Medium	Ongoing

ACTION	PRIORITY	DURATION
Introduced Animals		
Encourage the restoration of wildlife habitats by developing integrated control programs for pest plants and animals.	High	Ongoing
Continue programs to eradicate rabbits, foxes and cats.	High	Ongoing
Investigate methods of feral bee control and initiate where appropriate.	Medium	Ongoing
Cultural Heritage		
Consult Aboriginal people who have a traditional association with the land, Native Title Claimants and relevant State and Federal Aboriginal heritage authorities, in decisions regarding the management of cultural heritage.	High	Ongoing
Identify, record, protect, conserve and monitor known or relocated sites and items of archaeological, anthropological, cultural and historical significance located in the park, in cooperation with the local Aboriginal communities, Department of Aboriginal Affairs and Reconciliation, Heritage branch, DEH, and other relevant authorities and organisations. Aboriginal and historic cultural heritage sites require conservation plans to facilitate appropriate management.	High	Ongoing
In consultation with the Aboriginal community, Heritage branch, DEH, and other relevant authorities, research and record cultural and historic sites and stories that relate to the park and, where appropriate, develop interpretive material and tourism programs for visitors. Interpretive material may include website, brochures, site signage and displays.	Medium	Ongoing
All archaeological, anthropological and historic studies within the park should be developed in consultation with Heritage branch, DEH, and/or DAARE and submitted for inclusion on the State Heritage Register and/or the DAARE Central Archive.	Medium	Ongoing
With the assistance of the local Aboriginal people, identify all local Aboriginal community groups with an interest in the parks of the Coffin Bay area. Contact, develop and support forums that achieve an ongoing dialogue with all groups.	Medium	Ongoing
Seek local Aboriginal community support to improve DEH staff understanding of local Aboriginal people's traditional connections with the park and its surrounding areas.	Medium	Ongoing
Continue to support Aboriginal interest in employment in park operations.	Medium	Ongoing
Identify post-colonial cultural sites and provide for their protection and interpretation.	Medium	Ongoing
Fire Management		
Develop, implement and review fire management plans in association with CFS and other stakeholders.	High	Ongoing
Until a fire management plan is developed : <ul style="list-style-type: none"> – maintain existing fire access tracks and only create new tracks if there is no alternative means to prevent the loss of life, property or biodiversity assets; – undertake strategic hazard reduction burning in order to protect life and property. 	High	Ongoing
Provide campfire sites in Coffin Bay National Park and restrict use to these sites.	Medium	Ongoing
Prohibit the collection of local firewood, investigate alternative fuel sources for campfires and develop a strategy to make them available to park visitors.	Medium	Ongoing

ACTION	PRIORITY	DURATION
Vehicle Access		
Restrict public vehicle access to the roads and tracks shown in Figure 1, monitor vehicle use and address public risk and environmental issues.	High	Ongoing
Close inappropriate vehicle tracks and rehabilitate where necessary.	High	3 years
Maintain conventional vehicle access roads and upgrade where possible.	Medium	Ongoing
Using in-situ materials, maintain where possible, the designated 4WD access tracks, realigning sections where necessary to avoid low-lying swampy environments subject to inundation.	Medium	Ongoing
Maintain the Gunyah Beach access route through the dune field by marking the appropriate vehicle corridor. Access along the beach is limited to 3 km in either direction from entry point.	Medium	Ongoing
Boat Access		
Ensure visitors who enter the park by boat comply with the <i>National Parks and Wildlife Act</i> , its Regulations and with the provisions of this plan.	Medium	Ongoing
Walking Trails		
Maintain and improve existing walking trails within Coffin Bay National Park and Kellidie Bay Conservation Park.	High	2 years
Provide additional walking trails where appropriate to cater for a range of walkers.	Medium	3 years
Provide signs for the trailhead of each walking trail and interpretive material where appropriate.	Medium	5 years
Monitor the use of walking trails to assist with future management.	Medium	Ongoing
Entry and Camping Fees		
Monitor and ensure compliance with the self-registration system at Coffin Bay National Park.	High	Ongoing
Establish and maintain a database of visitor statistics.	Medium	3 years
Ensure that park visitors have adequate opportunity to purchase annual vehicle passes within the Coffin Bay township.	High	Ongoing
Inform park visitors of projects funded through entry and camping fee revenue.	Medium	1 year
Camping and Day Visit Areas		
Provide access to, and suitable interpretive material and facilities at, popular campsites and sites of interest without compromising natural values.	High	Ongoing
Monitor the impacts of vehicles and campers at Sensation Beach and modify the level of access if necessary to ensure wilderness values are not compromised.	Medium	Ongoing
Tour Operators		
Issue Commercial Licences to tour operators, subject to compliance with this plan and the provisions of the <i>National Parks and Wildlife Act</i> .	Medium	Ongoing
Commercial Activities		
Issue Commercial Licences/Leases for commercial activities, including Commercial Filming Agreements for filming where appropriate, subject to compliance with this plan and the provisions of the <i>National Parks and Wildlife Act</i> .	Medium	Ongoing
Leases and Licences		
Prohibit the re-opening of abandoned apiary sites within Kellidie Bay Conservation Park and allow the sites to regenerate.	Medium	Ongoing
Enforce shack lease covenants.	Medium	Ongoing
Public Utilities (ie SA Water, ETSA Utilities)		
Liaise with public utilities to ensure that their activities do not compromise park values and that they have regard to the objectives of the <i>National</i>	High	Ongoing

ACTION	PRIORITY	DURATION
<i>Parks and Wildlife Act</i> and this plan.		
Marine Navigation Aids		
Ensure relevant authorities liaise with DEH with regard to the maintenance of marine navigation aids, where impacts to the parks may occur.	Medium	Ongoing
Aquaculture		
Liaise with PIRSA (Fisheries) and the aquaculture industry to assist with the appropriate implementation of the Lower Eyre Peninsula Aquaculture Management Plan and its amendments.	Medium	Ongoing
Review new applications for aquaculture tenure and monitor the impacts of existing aquaculture to ensure there is minimal impact upon the biological and scenic values of the parks of the Coffin Bay area.	Medium	Ongoing
Mining Leases		
Ensure pest plants, in particular Aleppo Pines, are removed from the mining sites, and strategies to minimise their spread are undertaken.	High	1 year
Ensure that mining sites are rehabilitated where mining has been completed.	High	Ongoing
Ensure that lessees maintain communication with DEH concerning all mining operations.	High	Ongoing
Investigate the potential for a percentage of mining royalties to be allocated specifically for the management of Coffin Bay National Park.	Medium	Ongoing
Partnerships and Cooperative Management		
Consult with the local council, relevant management boards, the local community and other relevant bodies to explore the benefits of partnership arrangements that will support future management decisions on issues of common interest.	Medium	Ongoing
Promote the positive outcomes of the "Ark on Eyre" program in the parks to the wider community to encourage regional participation, maximising biodiversity outcomes.	Medium	Ongoing
Encourage and contribute to the development of partnership arrangements to integrate biodiversity and recreation management in the region, with organisations that have an interest in contributing to the sustainable management of the park.	Medium	Ongoing
Involve the Aboriginal community, Native Title Claimants and the nominated Aboriginal Heritage Committee in the cooperative management of the reserve and the preservation of their Indigenous cultural heritage.	Medium	Ongoing
Promote discussion with Aboriginal people who have a traditional association with the land comprising the park to better understand and appreciate their culture, lifestyle and knowledge of the reserve.	Medium	Ongoing
Community and Volunteer Involvement		
Provide administrative support for the activities of the DEH Eyre Consultative Committee.	Medium	Ongoing
Provide opportunities for volunteer and community groups by facilitating the implementation of programmed activities.	Medium	Ongoing
Additional Land		
Assess the ability of all Crown land in the region, including waters surrounding the parks of the Coffin Bay area, to add to the integrity of the reserves and incorporate suitable land in the parks.	Medium	Ongoing

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APPENDIX A: National Parks Code

NATIONAL PARKS CODE

Help protect your national parks by following these guidelines:

- leave your pets at home
- take your rubbish with you
- observe fire restrictions
- conserve native habitat by using liquid fuel or gas stoves
- camp only in designated areas
- respect geological or heritage sites
- keep our wildlife wild – do not feed or disturb animals, or remove native plants
- keep to defined vehicle tracks and walking trails
- be considerate of other park users

Thank you for leaving the bush in its natural state for the enjoyment of others

APPENDIX B: Land Parcels

Coffin Bay (NP)

Area (ha)	Perimeter (km)	Gazettal Date	Plan	Parcel	Description
1,851.32	292.58	17/06/1999	H510500	S674	littoral
46.10	3.95	17/06/1999	H860600	S928	Island in Yangie Bay
440.25	230.21	30/05/1985	H510500	S667	closed road reserves
28,665.65	393.11	02/12/1982	H510500	S665	

Total **31,003.322** **ha**

Kellidie Bay (CP)

Area (ha)	Perimeter (km)	Gazettal Date	Plan	Parcel	Description
112.09	4.43	27/04/1972	H510500	S12	
127.26	4.52	27/04/1972H	510500	S2	
118.96	4.26	27/04/1972H	510500	S3	
103.00	4.68	27/04/1972	H510500	S4	
115.82	4.44	27/04/1972	H510500	S5	
97.45	4.07	27/04/1972	H510500	S6	
119.94	5.00	27/04/1972	H510500	S7	
96.04	3.89	27/04/1972	H510500	S8	
103.05	4.15	27/04/1972	H510500	S9	
128.84	4.79	27/04/1972	H510500	S1	
79.50	4.00	27/04/1972	H510500	S11	
124.25	4.50	27/04/1972	H510500	S13	
7.57	1.33	27/04/1972	H510500	S21	
59.84	2.98	27/04/1972	H510500	S273	
80.18	4.34	27/04/1972	D54186	A57	formerly S274 H510500
41.56	2.73	27/04/1972	H510500	S275	
46.40	2.75	27/04/1972	H510500	S276	
53.33	3.57	27/04/1972	H510500	S277	
42.89	3.23	27/04/1972	H510500	S295	
98.63	4.21	27/04/1972	H510500	S10	
12.52	4.82	20/07/1978	H510500	S139	coastal
17.17	4.88	20/07/1978	H510500	S131	coastal

Total **1,786.28** **ha**

Mount Dutton Bay (CP)

Area (ha)	Perimeter (km)	Gazettal Date	Plan	Parcel	Description
1.19	0.47	27/04/1972	H848100	S908	Rabbit Island
0.53	0.27	27/04/1972	H850200	S907	The Brothers
1.12	0.48	27/04/1972	H860100	S912	All islands in Mount Dutton Bay
2.12	0.81	27/04/1972	H860100	S909	All islands in Mount Dutton Bay
0.35	0.22	27/04/1972	H860100	S910	All islands in Mount Dutton Bay
3.67	1.04	27/04/1972	H850200	S906	The Brothers
0.24	0.21	27/04/1972	H860100	S911	All islands in Mount Dutton Bay
0.78	0.34	27/04/1972	H843000	S913	Goat Island
0.66	0.33	04/11/1993	H861800	S1587	small island west of Horse Peninsula
1.40	0.49	04/11/1993	H861800	S1586	small island west of Horse Peninsula

Total 12.04 ha

Whidbey Isles (CP)

Area (ha)	Perimeter (km)	Gazettal Date	Plan	Parcel	Description
33.13	2.60	27/04/1972	H842500	S920	Four Hummocks Islands (excluding southern most island)
7.14	0.98	27/04/1972	H842500	S921	Four Hummocks Islands (excluding southern most island)
29.78	2.96	27/04/1972	H860500	S926	Whidbey Island
31.86	2.73	27/04/1972	H847800	S925	Price Island
69.46	6.03	27/04/1972	H847500	S924	Perforated Island
19.99	1.88	27/04/1972	H842500	S922	Four Hummocks Islands (excluding southern most island)
9.18	6.12	19/12/1991	D31610	A6	littoral Whidbey Island
8.50	5.66	19/12/1991	D31610	A5	littoral Price Island
18.40	12.25	19/12/1991	D31610	A4	littoral Perforated Island
8.10	5.39	19/12/1991	D31610	A3	littoral Four Hummocks Island
3.23	2.15	19/12/1991	D31610	A2	littoral Four Hummocks Island
5.89	3.94	19/12/1991	D31610	A1	littoral Four Hummocks Island

Total 244.67 ha

Avoid Bay Islands (CP)

Area (ha)	Perimeter (km)	Gazettal Date	Plan	Parcel	Description
15.80	2.18	27/04/1972	H840400	S861	Black Rocks
3.13	0.71	27/04/1972	H840400	S862	unamed island
3.33	0.77	27/04/1972	H860000	S863	unamed island
1.96	1.57	19/12/1991	D31580	A3	
5.56	4.51	19/12/1991	D31580	A2	
2.09	1.69	19/12/1991	D31580	A1	

Total 31.87 ha

APPENDIX C: Legislation, Conventions and Agreements

South Australia
<i>Aboriginal Heritage Act 1988</i>
<i>Animal and Plant Control Act (Agricultural Protection and Other Purposes) 1986</i>
<i>Biological Control Act 1986</i>
<i>Catchment Water Management Act 1995</i>
<i>Coast Protection Act 1972</i>
<i>Country Fires Act 1989</i>
<i>Equal Opportunity Act 1984</i>
<i>Environment Protection Act 1993</i>
<i>Development Act 1993</i>
<i>Harbors and Navigation Act 1993</i>
<i>Heritage Act 1993</i>
<i>Historic Shipwrecks Act 1981</i>
<i>Mining Act 1971</i>
<i>National Trust of South Australia Act 1955</i>
<i>Native Title (South Australia) Act 1994</i>
<i>Native Vegetation Act 1991</i>
<i>Occupational Health, Safety and Welfare Act 1986</i>
<i>Petroleum Act 2000</i>
<i>Prevention of Cruelty to Animals Act 1985</i>
<i>Roads (Opening and Closing) Act 1991</i>
<i>Recreational Greenways Act 2000</i>
<i>Soil Conservation and Land Care Act 1989</i>
<i>Water Resources Act 1997</i>
<i>Wilderness Protection Act 1992</i>

Commonwealth
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>
<i>Disability Discrimination Act 1992</i>
<i>Environment Protection and Biodiversity Conservation Act 1999</i>
<i>Native Title Act 1993</i>
<i>Natural Heritage Trust Act 1996</i>

International
Japan / China Australia Migratory Bird Agreements (JAMBA, CAMBA)
Ramsar Convention (for wetland protection)
World Heritage Convention

APPENDIX D: Reserve Classification

Parks are established for the conservation of biodiversity and cultural heritage and the environmentally responsible use of our natural resources. The classification of parks provides a general statement of purpose for which the area was acquired.

Classifications under the *National Parks and Wildlife Act 1972*, the *Crown Lands Act 1929* or the *Wilderness Protection Act 1992* are as follows:

Recreation Parks (RP) - areas of significance under the *National Parks and Wildlife Act*, managed for public recreation and enjoyment in a natural setting;

National Parks (NP) - areas proclaimed under the *National Parks and Wildlife Act* considered to be of national significance due to wildlife, natural features of the land or cultural heritage;

Conservation Parks (CP) - areas under the *National Parks and Wildlife Act* that are protected for the purpose of conserving wildlife or the natural or historic features of the land, where the development of visitor facilities tends to be kept to a minimum;

Game Reserves (GR) - areas set aside under the *National Parks and Wildlife Act* for the conservation of wildlife and the management of game at prescribed times for controlled seasonal hunting;

Regional Reserves (RR) - areas proclaimed under the *National Parks and Wildlife Act* for the purpose of conserving wildlife or natural or historical features while allowing responsible use of the area's natural resources (ie mining);

Conservation Reserves (CR) - land currently set aside for conservation of natural and cultural features under the *Crown Lands Act 1929* and held under the care, control and management of the Minister for Environment, that for various reasons were not proclaimed under the *National Parks and Wildlife Act, 1972*;

Wilderness Protection Areas (WPA) - land set aside under the *Wilderness Protection Act 1992* to protect natural and remote areas.

APPENDIX E: Minimum Impact Code

For Visitors to Wilderness Protection Areas and Zones in South Australia

Introduction:

Wilderness is a rare and precious natural resource. Protecting our wilderness areas:

- helps maintain a natural diversity of plants and animals;
- allows species to continue to flourish and evolve undisturbed;
- provides irreplaceable recreational opportunities; and
- ensures valuable ecological, evolutionary and climatic reference and research areas for the future.

This Code provides minimal impact techniques for visitors to wilderness areas.

Planning and getting there:

Equipment and Permits

To visit a wilderness area with the least impact you need the right equipment.

Apart from normal bushwalking gear, walkers staying overnight will need:

- a fuel stove and fuel
- a hand trowel or spade
- a container for collecting water
- strong rubbish bags
- up to date maps and access information
- relevant permits or licences

Desert travellers should refer to the National Parks and Wildlife Desert Parks Handbook for helpful advice on trip preparation and travel. As well as the items listed above desert travellers should ensure they have adequate water, food, fuel and vehicle spare parts.

Commercial tours and scientific expeditions require a licence to take groups into a wilderness area. Group leaders must:

- adhere to the conditions of the licence and the Minimum Impact Code; and
- supply each member with a copy of the Code.

Timing and Numbers

Be constantly aware of the effect your presence is likely to have on the wilderness area and on other visitors.

- Go with a small number of people. Large groups have more impact, affect the wilderness experience of others and are more socially unwieldy.
- Where possible avoid the peak times of the year and the more popular areas. You will miss the multitudes and by spreading the impact you give the environment a chance to recover.
- Plan your travelling times so that you can camp at recognised campsites rather than creating a new site.

Things to leave behind

There are some things you cannot take into a wilderness area.

- Please arrange for your pets to be cared for while you are away.
- Firearms, fishing equipment, nets and any other trapping devices are prohibited unless you have a permit.

Protecting the wilderness area

Flora, fauna and natural features

All plants, animals and natural features in wilderness areas are protected.

- Wildlife and habitats should not be disturbed. Observe and enjoy them quietly. Take particular care near breeding birds and other known wildlife colonies.
- Do not pick flowers, take or disturb other specimens, including rocks and fossils. If you have a permit, take care not to spoil the environment and other people's enjoyment of it.

Cultural Heritage

Sites and objects of Aboriginal and non-Aboriginal cultural significance are protected by law.

- Do not remove objects, or disturb or deface anything. Access to some sites may require the permission of Aboriginal traditional owners.
- Recognised places are likely to have defined access. Stay on the tracks and do not create new ones.

No Trace Camping

Modern camping equipment helps you to leave a campsite looking as if you had never been there.

- Look for low impact campsites. Sandy or hard surfaces are better than vegetated areas. Reduce your impact by spending only one or two nights in one place. Aim to leave the area as if no-one had been there.
- Avoid making vehicle tracks around campsites. Parking under trees compacts the soil and reduces the ability of water to penetrate.
- If it looks like rain, pitch your tent on ground that will drain naturally. Do not dig channels around your tent.
- Water supplies are vital for most animals and birds. Make your campsite sufficiently far from any water sources so that animals may have undisturbed access.
- A significant part of the wilderness experience is the enjoyment of the sounds of the bush. Do yourself and other visitors a favour by keeping noise to a minimum.

Campfires

Trees are precious. Trees and vegetative litter provide habitats for many animals, birds and insects. Collection of dead wood and the cutting of live timber for firewood have had a serious impact on woodland and individual trees in some popular outback areas.

- Areas which are ecologically fragile or depleted of timber may be designated **Fuel Stove Only Areas**. Check on campfire restrictions before leaving and always carry the appropriate equipment and fuel. Fuel stoves are faster and cleaner than campfires and do not cause visual scarring and debris.
- Where campfires are permitted, only one small campfire should be made. Timber should be obtained from designated sites or supply depots.
- Campfire remains should be as unobtrusive as possible. Constructing campfires from piled stones or in holes creates a visual scar. A fire that has burnt to ashes is less obtrusive than one extinguished with soil or water. Remove any non-combustible material from the ashes and take it with you.
- Be absolutely sure that the fire is out. A fire is not really out until the soil is cool.
- Do not light a fire if in doubt about the safety of lighting it. Always carry a fuel stove and fuel just in case.
- Observe all fire bans.

Rubbish - Carry it in, carry it out

- Pack to minimise rubbish. Avoid carrying too many bottles, cans and wrappings.
- Do not bury rubbish as it disturbs the soil and is likely to be dug up by animals and scattered by birds and the wind.
- If fires are permitted, you may burn combustible material, but carry out the rest.

- If you come across other people's rubbish, you'll do the wilderness a favour by carrying that out too.

Washing and hygiene

If water is required for washing it should be collected in a container.

- Wash 50 metres away from rivers, creeks, springs, lakes and other water bodies. Detergents, toothpaste and soap (even biodegradable types) pollute the water and harm fish and other water life.
- Only swim where permitted.
- Bury all faecal waste and paper. Choose a spot at least 100 metres from campsites and watercourses. If fires are permitted, use extreme care to burn rather than bury paper.
- Many sanitary items and 'disposable' nappies have plastic liners that do not burn well. Please carry them out.

Tracks and Trails

Vehicle access to wilderness areas is generally not permitted. In South Australia, some vehicle access may exist where necessary for effective management. Where this access is made available to drivers or walkers, the privilege should not be abused.

- Stay on prescribed tracks and trails to confine impacts to a planned route.
- Do not create new tracks and trails by cutting corners or skirting around obstacles such as fallen trees or dead animals. Creating new tracks increases environmental impacts, creates visual scarring and causes confusion. Where possible, remove the obstacle.
- Avoid vehicle travel when wet as this can cause extensive damage to the track surface.
- Leave gates open or closed as found. Do not force or go around locked gates.

Where there is no walking trail:

- Avoid sensitive vegetation that is easily destroyed by trampling.
- Follow an animal pad.
- Spread out where the terrain allows, as this will help disperse impacts. A plant has more chance of survival if only one walker steps on it.

Thank you for helping to protect our precious wilderness.

By adopting the techniques in this Code, you will help protect our wilderness. Without a conscious effort, we run the risk of 'loving our wilderness areas to death'.

APPENDIX F: Wilderness Protection Areas & Zones: South Australian Code of Management

1. INTRODUCTION

- 1.1** This Code is the Wilderness Code of Management prescribed in the *Wilderness Protection Act 1992*.
- 1.2** Any terms used in this Code have the same meaning as those used in the *Wilderness Protection Act* and the *National Parks and Wildlife Act 1972*.
- 1.3** A wilderness area means land constituted under the *Wilderness Protection Act 1992* as a Wilderness Protection Area or Wilderness Protection Zone.

2. OBJECTIVES OF WILDERNESS MANAGEMENT

- 2.1** To maximise the naturalness and remoteness, i.e. the wilderness quality, of wilderness areas, and in particular:
 - (i) protect and, where practicable, enhance wilderness quality;
 - (ii) protect wildlife and ecological processes;
 - (iii) control and, where practicable, eradicate non-indigenous plants and animals;
 - (iv) protect geographical features;
 - (v) protect sites of scientific significance;
 - (vi) protect sites of historical significance;
 - (vii) protect sites of Aboriginal cultural significance;
 - (viii) provide for public use and enjoyment where compatible with maximising wilderness quality; and
 - (ix) promote public awareness of, and education in, the natural features of and proper use of wilderness protection areas and wilderness protection zones.

3. MANAGEMENT PRINCIPLES

3.1 General Principles

- (i) All management operations will be carried out in a manner consistent with maximisation of wilderness quality except where provided for in this Code (see 3.10).
- (ii) A Plan of Management will be prepared for a designated wilderness area as soon as practicable after the area's constitution. The Plan will provide clear direction for the protection and management of the wilderness area, in particular:
 - (a) proposals to achieve the management objectives (2 above);
 - (b) priorities for actions, including:
 - the removal of existing incompatible uses and/or structures except those permitted under this Code; and
 - appropriate rehabilitation to be undertaken following the removal of structures and incompatible uses;
 - (c) recognition of the need to review management if indicated by results of monitoring and research;
- (i) No additional incompatible uses and/or structures will be permitted except those provided for in this Code.
- (ii) Nothing in this Code derogates from any rights exercised in mining tenements in wilderness protection zones. In relation to mining operations in wilderness protection zones, environmental protection policies in section 5 of this Code will apply.

3.2 Access and Transport

- (i) The use of vessels, motorised or wheeled transport will be permitted only on prescribed access routes, and for emergency and essential management operations (see 3.10) when alternative measures which do not degrade the wilderness quality of an area are unavailable.
- (ii) Access routes may be prescribed in a plan of management for use by vessels, motorised or wheeled transport in circumstances where this type of transport is essential for effective management.
- (iii) Construction of vehicle or walking tracks will be permitted only where re-direction of existing access requires construction of alternative tracks or for management works to achieve objectives identified in a plan of management. The construction of vehicle tracks for specific operations as provided for under 3.6(vi), 3.10 and 5.0 may be permitted on the basis that they will be rehabilitated as soon as possible.
- (iv) Vehicle and walking tracks that are not essential for management purposes as specified in 3.10, or for mining operations in wilderness protection zones (see 5.0) will be closed and rehabilitated as prescribed in a plan of management.
- (v) Over-flying for recreational purposes under an altitude of 1500m above ground level will be prohibited.
- (vi) The landing of aircraft will be prohibited, except by permission of the Director and for emergency and essential management operations. Helipads and airstrips that are identified as essential for emergencies and management operations will be maintained. All other strips or helipads will be rehabilitated as soon as possible or allowed to regenerate naturally.

3.3 Tourism

- (i) Commercial tours may be accommodated where their size and planned activities are compatible with maintenance of wilderness quality. Those permitted will have obtained a licence and will be conducted in accordance with licence conditions, the Visitor Management Strategy for the wilderness area (see 3.4), and the Minimum Impact Code (see 6.0). Tour groups will be monitored and regulated where necessary to prevent significant adverse impacts on wilderness quality and opportunities for solitude.

3.4 Recreation

- (ii) The level and type of visitor use and visitor conduct will be managed in accordance with the objectives stated in section 2.0 of this Code.
- (iii) A visitor management strategy that specifies an acceptable level and type of visitor use and visitor conduct will be included in the management plan for each wilderness area.
- (iv) Visitor management strategies will include the promotion of the Minimum Impact Code and the distribution of any information about the wilderness values of particular wilderness areas.
- (v) The following information should be used as a basis for monitoring the effectiveness of each strategy:
 - (a) the long-term limits of acceptable change for environmental (wilderness quality) and social (opportunities for wilderness dependent experiences) conditions within the wilderness area; and
 - (b) change in environmental and social conditions within the wilderness area.
- (vi) Constructed walking tracks, signs, track markers and other management devices or structures will be used only for essential management operations (see 3.2(ii) and 3.10).
- (vii) Recreation will be in accordance with the Wilderness Regulations and the Minimum Impact Code.

3.5 Cultural Heritage

- (i) Places, sites and objects of significance to Aboriginal people are protected under State and Commonwealth Aboriginal heritage legislation.

- (ii) Access by Aboriginal people to their sites of significance and protection of these sites will, as far as possible, be by methods compatible with the maintenance of wilderness quality.
- (iii) Nothing in this Code prevents Aboriginal people from doing anything in relation to Aboriginal sites, objects or remains in accordance with Aboriginal tradition. Furthermore, this Code does not prevent the taking, by Aboriginal people, of native plants and animals, protected animals, or the eggs of protected animals, in accordance with the relevant provisions in the *National Parks and Wildlife Act*.
- (iv) Sites of historic significance will be conserved, using access and methods compatible with maintenance of wilderness quality in the long-term.
- (v) Non-Aboriginal structures and artefacts that are of no historic significance, as determined by the relevant authority, will be removed or allowed to deteriorate naturally. Removal will not be undertaken if the only method of removal significantly reduces wilderness quality in the long-term.

3.6 Fire

- (i) Fire management will be based on continuing research into the fire history of the area, the relationships between fire and the natural communities occurring within the area, and on the maintenance of wilderness quality.
- (ii) Deliberately lit fires will be used only in emergency situations, and in essential management operations as listed in 3.10 and subject to (i) above.
- (iii) Other human caused fires should, where practicable, be extinguished consistent with maintenance of wilderness quality.
- (iv) Naturally caused fires will be extinguished when, in view of the direction, intensity and extent of the fire and the fire suppression techniques available, they pose a threat to human life and property, and to habitats requiring protection.
- (v) Where fire suppression action is required, the methods utilised will be, wherever possible, those which will have the least long-term impact on wilderness quality.
- (vi) The use of heavy machinery for fire suppression within a wilderness area will be prohibited except:
 - (a) where it is considered to be the only way of preventing greater long-term loss of wilderness quality;
 - (b) where specific machinery use techniques, that do not result in significant disturbance to the landscape or create a new access network, are considered the only feasible method of preventing long-term loss of wilderness quality; or
 - (c) to mitigate hazard to human life, where alternative measures which do not impact on the wilderness quality of the area are unavailable.
- (vii) Wherever possible, fire management practices designed to protect land adjacent to or within a wilderness area will be conducted outside the wilderness area.

3.7 Research

- (i) Research that will contribute to the implementation of the objectives of wilderness management will be encouraged.
- (ii) Research that will not affect wilderness quality and cannot be carried out elsewhere may be permitted.
- (iii) Research not covered under (i) and (ii) will not be permitted.

3.8 Biological Conservation

- (i) Management of threatened species, communities and habitats will, as far as possible, be consistent with maintenance of wilderness quality.
- (ii) Action will be taken to maintain and, where possible, restore natural processes, communities and habitats.

3.9 Non-indigenous Species

- (i) Non-indigenous species which significantly affect the wilderness quality of a wilderness area will be controlled or eradicated.
- (ii) Action will be taken to prevent the establishment of non-indigenous species.

3.10 Emergency and Essential Management Operations

- (i) All emergency and essential management operations will be carried out with the least possible impact on wilderness quality.
- (ii) Actions that cause short-term degradation of wilderness quality but are necessary for emergency and/or essential management operations will be permitted. The only specific situations acknowledged in this Code as possibly requiring such actions are:
 - control or eradication of non-indigenous species;
 - conservation of threatened species, communities and habitats;
 - protection of fire-sensitive species and communities;
 - management of visitor use;
 - management action or use of devices to mitigate hazard to human life;
 - restoration of natural processes, communities and habitats; and
 - research

Where degradation has occurred as a result of these activities, rehabilitation will be undertaken as soon as practicable.

3.11 Wilderness Protection Zones

Protection of wilderness quality in wilderness protection zones will be negotiated with tenement holders on the basis of the environmental protection policies in section 5. Management undertakings will be incorporated in a plan of management.

4. EXTERNAL INFLUENCES

- 4.1** Close liaison with adjoining landholders and managers will be established to ensure that adverse impacts on the wilderness quality of an area resulting from activities outside that area are minimised or prevented.
- 4.2** Where a wilderness area does not comprise a whole catchment, close liaison with upstream landholders and relevant authorities will be established to encourage the maintenance of water quality and flow regimes as close as practicable to their natural state.
- 4.3** Wherever possible management activities essential to the maintenance of the wilderness quality of a wilderness area to be on land outside the wilderness area.

5. EXERCISE OF MINING RIGHTS IN WILDERNESS PROTECTION ZONES

The holder of a mining tenement shall:

- 5.1** have regard to the provisions of the plan of management under section 31 of the *Wilderness Protection Act*; and
- 5.2** in undertaking any operations:
 - (i) protect native flora and fauna;
 - (ii) avoid the pollution of land, water and air;
 - (iii) avoid disturbance to known sites of natural, scientific, Aboriginal and non-Aboriginal cultural significance;
 - (iv) minimise the potential for wind and water erosion;
 - (v) avoid unnecessary track creation;
 - (vi) avoid introduction of non-indigenous species;
 - (vii) establish environmental monitoring and rehabilitation programs; and
 - (viii) upon completion of the operation remove or obliterate all structures and materials used in the carrying out of mining operations.

APPENDIX G: Plant Species

SPECIES	COMMON NAME	Aus	SA	EP
<i>Acacia alcockii</i>	Alcock's Wattle	R	R	
<i>Acacia anceps</i> (NC)	Angled Wattle			
<i>Acacia calamifolia</i>	Wallowa			
<i>Acacia cupularis</i>	Cup Wattle			
<i>Acacia dodonaeifolia</i>	Hop-bush Wattle	R	R	R
<i>Acacia farinose</i>	Mealy Wattle			
<i>Acacia leiophylla</i>	Coast Golden Wattle			
<i>Acacia ligulata</i>	Umbrella Bush			
<i>Acacia longifolia</i> var <i>sophorae</i>	Coastal Wattle			
<i>Acacia macrocarpa</i>	Manna Wattle			
<i>Acacia myrtifolia</i> var <i>myrtifolia</i>	Myrtle Wattle			
<i>Acacia nematophylla</i>	Coast Wallowa			
<i>Acacia paradoxa</i>	Kangaroo Thorn			
<i>Acacia pycnantha</i>	Golden Wattle			
<i>Acacia rupicola</i>	Rock Wattle			
<i>Acacia spinescens</i>	Spiny Wattle			
<i>Acacia triquetra</i>	Mallee Wreath Wattle			
<i>Acrotriche cordata</i>	Blunt-leaf Ground-berry			
<i>Acrotriche patula</i>	Prickly Ground-berry			
<i>Adriana klotzschii</i>	Coast Bitter-bush			
* <i>Aira cupaniana</i>	Small Hair-grass			
<i>Allocasuarina verticillata</i>	Drooping Sheoak			
<i>Alyogyne huegelii</i>	Native Hibiscus			
<i>Alyxia buxifolia</i>	Sea Box			
<i>Aphanes australiana</i>	Australian Piert			
<i>Apium annuum</i>	Annual Celery			
<i>Apium prostratum</i> ssp <i>prostratum</i> var <i>prostratum</i>	Native Celery			U
<i>Atriplex cinerea</i>	Coast Saltbush			
<i>Atriplex paludosa</i> ssp <i>cordata</i>	Marsh Saltbush			
<i>Austrofestuca littoralis</i>	Coast Fescue			U
<i>Baumea arthropphylla</i>	Swamp Twig-rush			R
<i>Baumea juncea</i>	Bare Twig-rush			U
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush			
<i>Billardiera versicolor</i>	Yellow-flower Apple-berry		U	U
<i>Brachycome exilis</i>	Slender Daisy			
<i>Brachycome lineariloba</i>	Hard-head Daisy			
<i>Bromus</i> sp	Brome			
<i>Bulbine semibarbata</i>	Small Leek-lily			
<i>Bursaria spinosa</i>	Sweet Bursaria			
<i>Caladenia bicallata</i>	Western Daddy-long-legs	R	R	R
<i>Caladenia cardiochila</i>	Heart-lip Spider-orchid			
<i>Caladenia carnea</i> var <i>carnea</i>	Pink Fingers			U
<i>Caladenia filamentosa</i> var <i>tentaculata</i>	Wispy Spider-orchid			
<i>Caladenia latifolia</i>	Pink Caladenia			
<i>Calandrinia brevipedata</i>	Short-stalked Purslane		U	U
<i>Calandrinia corrigioloides</i>	Strap Purslane			R
<i>Calandrinia eremaea</i>	Dryland Purslane			

SPECIES	COMMON NAME	Aus	SA	EP
<i>Callistemon rugulosus</i>	Scarlet Bottlebrush			
<i>Callitris canescens</i>	Scrubby Cypress Pine			
<i>Callitris preissii</i>	Southern Cypress Pine			
<i>Carpobrotus rossii</i>	Native Pigface			
<i>Cassytha glabella forma dispar</i>	Slender Dodder-laurel			
<i>Cassytha peninsularis var peninsularis</i>	Peninsula Dodder-laurel			
<i>Centella asiatica</i>	Asian Centella		Q	R
<i>Centrolepis polygyna</i>	Wiry Centrolepis			
<i>Chrysocephalum apiculatum</i>	Common Everlasting			
<i>Clematis microphylla</i>	Old Man's Beard			
<i>Comesperma volubile</i>	Love Creeper			
<i>Convolvulus remotus</i>	Grassy Bindweed			
<i>Correa pulchella</i>	Salmon Correa			
<i>Correa reflexa var coriacea</i>	Thick-leaf Correa			
<i>Corybas despectans</i>	Coast Helmet-orchid			U
<i>Corybas dilatatus</i>	Common Helmet-orchid			
<i>Corybas incurvus</i>	Slaty Helmet-orchid		U	K
<i>Cotula vulgaris var australasica</i>	Slender Cotula			
<i>Craspedia glauca</i>	Billy-buttons			
<i>Crassula decumbens var decumbens</i>	Spreading Crassula			
<i>Crassula sieberiana ssp tetramera</i>	Australian Stonecrop			
<i>Cyrtostylis robusta</i>	Robust Gnat-orchid			
<i>Danthonia caespitosa</i>	Common Wallaby-grass			
<i>Danthonia setacea var setacea</i>	Small-flower Wallaby-grass			
<i>Daucus glochidiatus</i>	Native Carrot			
<i>Dianella brevicaulis</i>	Short-stem Flax-lily			
<i>Dianella revoluta var revoluta</i>	Black-anther Flax-lily			
<i>Dichelachne crinita</i>	Long-hair Plume-grass			U
<i>Dichondra repens</i>	Kidney Weed			
<i>Disphyma crassifolium ssp clavellatum</i>	Round-leaf Pigface			
<i>Dodonaea humilis</i>	Dwarf Hop-bush			
<i>Dodonaea viscosa</i>	Sticky Hop-bush			
<i>Drosera macrantha ssp planchonii</i>	Climbing Sundew			
<i>Elymus scabrus var scabrus</i>	Native Wheat-grass			
<i>Enchylaena tomentosa var tomentosa</i>	Ruby Saltbush			
<i>Epilobium billardierianum ssp billardierianum</i>	Robust Willow-herb			
<i>Eucalyptus 'anceps'</i>	Sessile-fruit White Mallee			
<i>Eucalyptus brachycalyx</i>	Gilja			
<i>Eucalyptus camaldulensis var camaldulensis</i>	River Red Gum			
<i>Eucalyptus globata</i>	Port Lincoln Mallee		R	R
<i>Eucalyptus diversifolia</i>	Coastal White Mallee			
<i>Eucalyptus lansdowneana ssp albopurpurea</i>	Purple-flowered Mallee Box			R
<i>Eucalyptus oleosa</i>	Red Mallee			
<i>Eucalyptus porosa</i>	Mallee Box			
<i>Eucalyptus rugosa</i>	Coastal White Mallee			
<i>Eucalyptus viminalis ssp cygnetensis</i>	Rough-bark Manna Gum			V
<i>Eucalyptus yalataensis</i>	Yalata Mallee			
<i>Euphrasia collina ssp tetragona</i>	Coast Eyebright			

SPECIES	COMMON NAME	Aus	SA	EP
<i>Eutaxia microphylla</i> var <i>microphylla</i>	Common Eutaxia			
<i>Exocarpos aphyllus</i>	Leafless Cherry			
<i>Exocarpos sparteus</i>	Slender Cherry			
<i>Exocarpos syrticola</i>	Coast Cherry			
<i>Frankenia pauciflora</i> var <i>fruticulosa</i>	Southern Sea-heath			
<i>Frankenia pauciflora</i> var <i>gunnii</i>	Southern Sea-heath			
<i>Gahnia deusta</i>	Limestone Saw-sedge			
<i>Gahnia filum</i>	Smooth Cutting-grass			
<i>Gahnia lanigera</i>	Black Grass Saw-sedge			
<i>Gahnia trifida</i>	Cutting Grass			
<i>Galium migrans</i>	Loose Bedstraw			
<i>Geranium retrorsum</i>	Grassland Geranium			
<i>Geranium solanderi</i> var <i>solanderi</i>	Austral Geranium			
<i>Glossodia major</i>	Purple Cockatoo			
<i>Gnaphalium indutum</i>	Tiny Cudweed			
<i>Goodenia blackiana</i>	Native Primrose			
<i>Goodenia varia</i>	Sticky Goodenia			
<i>Goodia lotifolia</i> var <i>lotifolia</i> (NC)	Golden-tip			
<i>Grevillea aspera</i>	Rough Grevillea			
<i>Hakea vittata</i>	Limestone Needlebush			
<i>Haloragis acutangula</i> forma <i>annulata</i>	Smooth Raspwort			
<i>Halosarcia halocnemoides</i> ssp <i>halocnemoides</i>	Grey Samphire			U
<i>Hardenbergia violacea</i>	Native Lilac			
<i>Helichrysum leucopsidium</i>	Satin Everlasting			
<i>Hemichroa pentandra</i>	Trailing Hemichroa		U	R
<i>Hibbertia riparia</i>	Guinea-flower			
<i>Hibbertia riparia</i> (long-leaved aff <i>H stricta</i>)	Bristly Guinea-flower			
<i>Hibbertia sericea</i> var <i>major</i>	Large Guinea-flower			
<i>Hibbertia</i> sp D		Q	Q	U
<i>Hibbertia virgata</i>	Twiggy Guinea-flower			
<i>Hydrocotyle callicarpa</i>	Tiny Pennywort			
<i>Hydrocotyle capillaris</i>	Thread Pennywort			
<i>Hypoxis glabella</i> var <i>glabella</i>	Tiny Star			
<i>Isolepis marginata</i>	Little Club-rush			
<i>Isolepis nodosa</i>	Knobby Club-rush			
<i>Isotoma scapigera</i>	Salt Isotome		R	R
<i>Ixiolaena supina</i>	Coast Plover-daisy			
<i>Juncus kraussii</i>	Sea Rush			
<i>Kennedia prostrata</i>	Scarlet Runner			
<i>Lasiopetalum discolor</i>	Coast Velvet-bush			
<i>Lavatera plebeia</i>	Australian Hollyhock			
<i>Lawrencia squamata</i>	Thorny Lawrencia			
<i>Lepidium foliosum</i>	Leafy Peppergrass			U
<i>Lepidosperma congestum</i>	Clustered Sword-sedge			
<i>Lepidosperma gladiatum</i>	Coast Sword-sedge			
<i>Leptocarpus brownii</i>	Coarse Twine-rush			K
<i>Leptorhynchos waitzia</i>	Button Immortelle			
<i>Leucophyta brownii</i>	Coast Cushion Bush			

SPECIES	COMMON NAME	Aus	SA	EP
<i>Leucopogon costatus</i>	Twiggy Beard-heath			
<i>Leucopogon parviflorus</i>	Coast Beard-heath			
<i>Leucopogon rufus</i>	Ruddy Beard-heath		U	U
<i>Lichen</i> sp				
<i>Linum marginale</i>	Native Flax			
<i>Lissanthe strigosa</i>	Peach Heath			
<i>Lobelia alata</i>	Angled Lobelia			R
<i>Logania crassifolia</i>	Coast Logania			
<i>Logania ovata</i>	Oval-leaf Logania			
<i>Lomandra effusa</i>	Scented Mat-rush			
<i>Lotus australis</i>	Austral Trefoil			
<i>Maireana oppositifolia</i>	Salt Bluebush			
<i>Melaleuca acuminata</i>	Mallee Honey-myrtle			
<i>Melaleuca brevifolia</i>	Short-leaf Honey-myrtle			
<i>Melaleuca decussata</i>	Totem-poles			
<i>Melaleuca halmaturorum</i> ssp <i>halmaturorum</i>	Swamp Paper-bark			
<i>Melaleuca lanceolata</i> ssp <i>lanceolata</i>	Dryland Tea-tree			
<i>Microcybe pauciflora</i>	Yellow Microcybe			
<i>Microtis arenaria</i>	Notched Onion-orchid			
<i>Microtis unifolia</i> complex	Onion-orchid			
<i>Millotia major</i>				
<i>Millotia myosotidifolia</i>	Broad-leaf Millotia			
<i>Mimulus repens</i>	Creeping Monkey-flower			T
<i>Mitrasacme paradoxa</i> (NC)	Wiry Mitrewort			
<i>Moss</i> sp				
<i>Muehlenbeckia adpressa</i>	Climbing Lignum			
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum			
<i>Myoporum insulare</i>	Common Boobialla			
<i>Myosotis australis</i>	Austral Forget-me-not			K
<i>Nicotiana maritima</i>	Coast Tobacco			
<i>Nitraria billardieri</i>	Nitre-bush			
<i>Olearia axillaris</i>	Coast Daisy-bush			
<i>Olearia ramulosa</i>	Twiggy Daisy-bush			
<i>Oxalis perennans</i>	Native Sorrel			
<i>Parietaria cardiostegia</i>	Mallee Smooth-nettle			
<i>Parietaria debilis</i>	Smooth-nettle			
<i>Pelargonium australe</i>	Australian Pelargonium			
<i>Pelargonium littorale</i>	Native Pelargonium			
<i>Pimelea flava</i> ssp <i>dichotoma</i>	Diosma Riceflower			
<i>Pimelea glauca</i>	Smooth Riceflower			
<i>Pimelea octophylla</i>	Woolly Riceflower			
<i>Pimelea serpyllifolia</i> ssp <i>serpyllifolia</i>	Thyme Riceflower			
<i>Pittosporum phylliraeoides</i> var <i>microcarpa</i>	Native Apricot			
<i>Plantago</i> sp B	Little Plantain			
<i>Pleuropappus phyllocalymmeus</i>	Silver Candles	V	V	V
<i>Poa drummondiana</i>	Knotted Poa	Q	R	R
<i>Poa fax</i>	Scaly Poa		R	
<i>Poa labillardieri</i> var <i>labillardieri</i>	Common Tussock-grass			

SPECIES	COMMON NAME	Aus	SA	EP
<i>Poa poiformis</i>	Coast Tussock-grass			
<i>Podolepis rugata</i> var <i>littoralis</i>	Coast Copper-wire Daisy		U	U
<i>Podotheca angustifolia</i>	Sticky Long-heads			
<i>Pomaderris obcordata</i>	Wedge-leaf Pomaderris			
<i>Pomaderris paniculosa</i> ssp <i>paniculosa</i>	Mallee Pomaderris			
<i>Poranthera triandra</i>	Three-petal Poranthera			
<i>Prasophyllum occidentale</i>	Plains Leek-orchid			
<i>Prasophyllum odoratum</i>	Scented Leek-orchid			
<i>Pterostylis nana</i>	Dwarf Greenhood			
<i>Pterostylis plumosa</i>	Bearded Greenhood			
<i>Pterostylis robusta</i>	Large Shell-orchid			
<i>Puccinellia stricta</i> var <i>stricta</i>	Australian Saltmarsh-grass			
<i>Pultenaea rigida</i> var <i>rigida</i>	Rigid Bush-pea			R
<i>Pultenaea tenuifolia</i>	Narrow-leaf Bush-pea			
<i>Rhagodia candolleana</i> ssp <i>candolleana</i>	Sea-berry Saltbush			
<i>Rhagodia crassifolia</i>	Fleshy Saltbush			
<i>Rhagodia parabolica</i>	Mealy Saltbush			
<i>Rhagodia spinescens</i>	Spiny Saltbush			
<i>Rumex brownii</i> (NC)	Slender Dock			
<i>Samolus repens</i>	Creeping Brookweed			
<i>Santalum acuminatum</i>	Quandong			
<i>Sarcocornia blackiana</i>	Thick-head Samphire			
<i>Sarcocornia quinqueflora</i>	Beaded Samphire			
<i>Scaevola crassifolia</i>	Cushion Fanflower			
<i>Schoenus carsei</i>	Wiry Bog-rush		U	T
<i>Scleranthus pungens</i>	Prickly Knawel			
<i>Sclerolaena uniflora</i>	Small-spine Bindyi			
<i>Sclerostegia tenuis</i>	Slender Samphire			
<i>Sebaea ovata</i>	Yellow Sebaea			
<i>Selliera radicans</i>	Shiny Swamp-mat			R
<i>Senecio lautus</i>	Variable Groundsel			
<i>Senecio tenuiflorus</i>	Woodland Groundsel			
<i>Sonchus megalocarpus</i>	Coast Sow-thistle			
<i>Spinifex hirsutus</i>	Rolling Spinifex			
<i>Sporobolus virginicus</i>	Salt Couch			
<i>Spyridium bifidum</i> var <i>bifidum</i>	Forked Spyridium			
<i>Spyridium phyllicoides</i>	Narrow-leaf Spyridium			
<i>Stackhousia aspericocca</i> ssp "Cylindrical inflorescence" (W.R.Barker 1418)	Bushy Candles			
<i>Stipa elegantissima</i>	Feather Spear-grass			
<i>Stipa eremophila</i>	Rusty Spear-grass			
<i>Stipa exilis</i>	Heath Spear-grass			
<i>Stipa flavescens</i>	Coast Spear-grass			
<i>Stipa scabra</i> ssp <i>falcata</i>	Slender Spear-grass			
<i>Suaeda australis</i>	Austral Seablite			
<i>Templetonia retusa</i>	Cookies Tongue			
<i>Tetragonia implexicoma</i>	Bower Spinach			
<i>Thelymitra nuda</i>	Scented Sun-orchid			

SPECIES	COMMON NAME	Aus	SA	EP
<i>Thelymitra rubra</i>	Salmon Sun-orchid			
<i>Threlkeldia diffusa</i>	Coast Bonefruit			
<i>Thysanotus patersonii</i>	Twining Fringe-lily			
<i>Trachymene pilosa</i>	Dwarf Trachymene			
<i>Triglochin centrocarpum</i>	Dwarf Arrowgrass			
<i>Triglochin mucronatum</i>	Prickly Arrowgrass		Q	
<i>Triglochin trichophorum</i>				
<i>Triodia irritans</i> complex	Spinifex			
<i>Veronica hillebrandii</i>	Rigid Speedwell			
<i>Vittadinia australasica</i> var <i>australasica</i>	Sticky New Holland Daisy			
<i>Vittadinia megacephala</i>	Giant New Holland Daisy			
<i>Wahlenbergia stricta</i> ssp <i>stricta</i>	Tall Bluebell			
<i>Westringia dampieri</i>	Shore Westringia			
<i>Westringia rigida</i>	Stiff Westringia			
<i>Wurmbea dioica</i> ssp <i>dioica</i>	Early Nancy			
<i>Zygophyllum billardierei</i>	Coast Twinleaf			
<i>Zygophyllum confluens</i>	Forked Twinleaf			

APPENDIX H: Animal Species

Birds

SPECIES	COMMON NAME	Aus	SA	EP
<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater			
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill			
<i>Acanthiza pusilla</i>	Brown Thornbill			
<i>Accipiter fasciatus</i>	Brown Goshawk			
<i>Actitis hypoleucos</i>	Common Sandpiper			
<i>Anas castanea</i>	Chestnut Teal			
<i>Anas gracilis</i>	Grey Teal			
<i>Anas rhynchos</i>	Australasian Shoveler		R	R
<i>Anthochaera carunculata</i>	Red Wattlebird			
<i>Anthus novaeseelandiae</i>	Richard's Pipit			
<i>Aquila audax</i>	Wedge-tailed Eagle			
<i>Artamus cyanopterus</i>	Dusky Woodswallow			
<i>Barnardius zonarius</i>	Australian Ringneck, (Ring-necked Parrot)			
<i>Cacatua roseicapilla</i>	Galah			
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper			
<i>Calidris ruficollis</i>	Red-necked Stint			
<i>*Carduelis carduelis</i>	European Goldfinch			
<i>Cereopsis novaehollandiae</i>	Cape Barren Goose		V	V
<i>Charadrius ruficapillus</i>	Red-capped Plover			
<i>Chrysococcyx basalis</i>	Horsfield's Bronze-cuckoo			
<i>Circus approximans</i>	Swamp Harrier			
<i>Colluricincla harmonica</i>	Grey Shrike-thrush			
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike			
<i>Corcorax melanorhamphos</i>	White-winged Chough			
<i>Corvus coronoides</i>	Australian Raven			
<i>Corvus mellori</i>	Little Raven			
<i>Cracticus nigrogularis</i>	Pied Butcherbird			
<i>Cracticus torquatus</i>	Grey Butcherbird			
<i>Cuculus pallidus</i>	Pallid Cuckoo			
<i>Cygnus atratus</i>	Black Swan			
<i>Dromaius novaehollandiae</i>	Emu			
<i>Drymodes brunneopygia</i>	Southern Scrub-robin		U	U
<i>Egretta novaehollandiae</i>	White-faced Heron			
<i>Egretta sacra</i>	Eastern Reef Egret		R	R
<i>Elanus axillaris</i>	Black-shouldered Kite			
<i>Epthianura albigula</i>	White-fronted Chat			
<i>Falco berigora</i>	Brown Falcon			
<i>Falco cenchroides</i>	Nankeen Kestrel			
<i>Falco peregrinus</i>	Peregrine Falcon		R	R
<i>Gallinago hardwickii</i>	Latham's Snipe		V	V
<i>Gallirallus philippensis</i>	Buff-banded Rail		U	U
<i>Gliciphila melanops</i>	Tawny-crowned Honeyeater		U	U
<i>Gymnorhina tibicen</i>	Australian Magpie			
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher			
<i>Haematopus longirostris</i>	Pied Oystercatcher			
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		V	V

SPECIES	COMMON NAME	Aus	SA	EP
<i>Hieraaetus morphnoides</i>	Little Eagle			
<i>Himantopus himantopus</i>	Black-winged Stilt			
<i>Hirundo neoxena</i>	Welcome Swallow			
<i>Larus novaehollandiae</i>	Silver Gull			
<i>Larus pacificus</i>	Pacific Gull			
<i>Lichenostomus virescens</i>	Singing Honeyeater			
<i>Malurus cyaneus</i>	Superb Fairy-wren			
<i>Malurus pulcherrimus</i>	Blue-breasted Fairy-wren		V	V
<i>Megalurus grammurus</i>	Little Grassbird			
<i>Neophema petrophila</i>	Rock Parrot		R	R
<i>Numenius madagascariensis</i>	Eastern Curlew		V	V
<i>Ocyphaps lophotes</i>	Crested Pigeon			
<i>Pachycephala pectoralis</i>	Golden Whistler			
<i>Pandion haliaetus</i>	Osprey		R	R
* <i>Passer domesticus</i>	House Sparrow			
<i>Pelagodroma marina</i>	White-faced Storm-Petrel			
<i>Pelecanus conspicillatus</i>	Australian Pelican			
<i>Petrochelidon ariel</i>	Fairy Martin			
<i>Petroica multicolor</i>	Scarlet Robin			V
<i>Phalacrocorax carbo</i>	Great Cormorant			
<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant			
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant			
<i>Phalacrocorax varius</i>	Pied Cormorant			
<i>Phaps chalcoptera</i>	Common Bronzewing			
<i>Phaps elegans</i>	Brush Bronzewing		U	U
<i>Phylidonyris albigularis</i>	White-fronted Honeyeater			
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			
<i>Pluvialis squatarola</i>	Grey Plover			
<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe			
<i>Porzana fluminea</i>	Australian Spotted Crake			
<i>Psophodes nigrogularis</i>	Western Whipbird	V	R	R
<i>Puffinus tenuirostris</i>	Short-tailed Shearwater			
<i>Rhipidura albiscapa</i>	Grey Fantail			
<i>Rhipidura leucophrys</i>	Willie Wagtail			
<i>Sericornis frontalis</i>	White-browed Scrubwren			
<i>Smicronis brevirostris</i>	Weebill			
<i>Stagonopleura guttata</i>	Diamond Firetail		V	
<i>Sterna bergii</i>	Crested Tern			
<i>Stipiturus malachurus parimeda</i>	Southern Emu-wren	V	E	E
<i>Strepera graculina</i>	Pied Currawong			
<i>Strepera versicolor</i>	Grey Currawong			
* <i>Sturnus vulgaris</i>	Common Starling			
<i>Thinornis rubricollis</i>	Hooded Plover		V	V
<i>Tringa glareola</i>	Wood Sandpiper			
<i>Tringa nebularia</i>	Common Greenshank			
* <i>Turdus merula</i>	Eurasian Blackbird			
<i>Vanellus miles</i>	Masked Lapwing			
<i>Zosterops lateralis</i>	Silvereye			

Mammals		SA status
<i>Arctocephalus forsteri</i>	New Zealand Fur-seal	
<i>Cercartetus concinnus</i>	Western Pygmy-possum	
<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
* <i>Mus musculus</i>	House Mouse	
<i>Neophoca cinerea</i>	Australian Sea-lion	R
* <i>Oryctolagus cuniculus</i>	Rabbit	
<i>Rattus fuscipes</i>	Bush Rat	
* <i>Vulpes vulpes</i>	Fox	
Reptiles		SA status
<i>Acanthophs antarcticus</i>	Common Death Adder	
<i>Amphibolurus norrisi</i>	Mallee Tree-Dragon	
<i>Aprasia striolata</i>	Lined Worm-lizard	
<i>Christinus marmoratus</i>	Marbled Gecko	
<i>Cryptoblepharus virgatus</i>	Striped Wall Skink	
<i>Ctenophorus fionni</i>	Peninsula Dragon	Endemic
<i>Ctenotus orientalis</i>	Eastern Spotted Ctenotus	
<i>Diplodactylus granariensis</i>	Western Stone Gecko	
<i>Drysdalia mastersii</i>	Master's Snake	
<i>Egernia multiscutata</i>	Bull Skink	
<i>Hemiergis peronii</i>	Four-toed Earless Skink	
<i>Lerista bougainvillii</i>	Bougainville's Skink	
<i>Lerista dorsalis</i>	Southern Four-toed Slider	
<i>Menetia greyii</i>	Dwarf Skink	
<i>Morethia adalaidensis</i>	Adelaide Snake-eye	
<i>Morethia obscura</i>	Mallee Snake-eye	
<i>Notechis ater</i>	Black Tiger Snake	
<i>Pogona barbata</i>	Eastern Bearded Dragon	
<i>Pseudechis australis</i>	Mulga Snake	
<i>Pseudonaja inframacula</i>	Peninsula Brown Snake	
<i>Pseudonaja textilis</i>	Eastern Brown Snake	
<i>Tiliqua occipitalis</i>	Western Bluetongue	
<i>Tiliqua rugosa</i>	Sleepy Lizard	
<i>Tympanocryptis lineata</i>	Five-lined Earless Dragon	
<i>Varanus gouldii</i>	Sand Goanna	
<i>Varanus rosenbergi</i>	Rosenberg's Goanna	R

APPENDIX I: Conservation Status Codes

Australian Conservation Status Codes

The following codes are based on the current listing of species under Section 179 of the *Environmental Protection and Biodiversity Conservation Act 1999*.

- EX Extinct:** there is no reasonable doubt that the last member of the species has died.
- EW Extinct in the Wild:** known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CE Critically Endangered:** facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- E Endangered:** facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- V Vulnerable:** facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD Conservation Dependent:** the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

Note: Prescribed criteria as defined under the IUCN Red List of Threatened Species.

South Australian Conservation Status Codes

The following codes are based on the current listing of species under Schedules of the *National Parks and Wildlife Act 1972*, as amended in 2000.

- E Endangered:** (Schedule 7) in danger of becoming extinct in the wild.
- V Vulnerable:** (Schedule 8) at risk from potential or long term threats which could cause the species to become endangered in the future.
- R Rare:** (Schedule 9) low overall frequency of occurrence (may be locally common with a very restricted distribution or may be scattered sparsely over a wider area). Not currently exposed to significant threats, but warrants monitoring and protective measures to prevent reduction of population sizes.

Regional Status Codes

The categories below apply to the species distribution at a regional level.

Mammals, Reptiles & Amphibians

There are no regional conservation status categories developed for mammals, reptiles or amphibians to date (2002).

Birds

Regional conservation status for birds follow Carpenter and Reid (1998) *The Status of Native Birds in the Agricultural Areas of South Australia*;

The regions are defined as follows;

ML	Mount Lofty	MN	Mid-North	SE	South-Eastern	KI	Kangaroo Island
MM	Murray Mallee	EP	Eyre Peninsula	YP	Yorke Peninsula		

Plants

Regional conservation ratings for plants follow:

Lang, P.J. & Kraehenbuehl, D.N. (2001). Plants of Particular Conservation Significance in South Australia's Agricultural Regions.

January (2001) update of unpublished database: Florlist. Department for Environment and Heritage.

The regions are as defined by the State Herbarium (Plant Biodiversity Centre), illustrated in the back cover of 'A List of the Vascular Plants of South Australia (Edition IV)' (Ed. Jessop, 1993).

NW	North-Western	FR	Flinders Ranges	NL	Northern Lofty	SL	Southern Lofty
LE	Lake Eyre	EA	Eastern	MU	Murray	KI	Kangaroo Island
NU	Nullarbor	EP	Eyre Peninsula	YP	Yorke Peninsula	SE	South-Eastern
GT	Gairdner-Torrens						

In order of decreasing conservation significance:

- X** **Extinct/Presumed extinct:** not located despite thorough searching of all known and likely habitats; known to have been eliminated by the loss of localised population(s); or not recorded for more than 50 years from an area where substantial habitat modification has occurred.
- E** **Endangered:** rare and in danger of becoming extinct in the wild.
- T** **Threatened:** (*Plants only*) likely to be either Endangered or Vulnerable but insufficient data available for more precise assessment.
- V** **Vulnerable:** rare and at risk from potential threats or long term threats that could cause the species to become endangered in the future.
- K** **Uncertain:** likely to be either Threatened or Rare but insufficient data available for a more precise assessment.
- R** **Rare:** has a low overall frequency of occurrence (may be locally common with a very restricted distribution or may be scattered sparsely over a wider area). Not currently exposed to significant or widespread threats, but warrants monitoring and protective measures to prevent reduction of population sizes.
- U** **Uncommon:** less common species of interest but not rare enough to warrant special protective measures.
- Q** **Not yet assessed:** but flagged as being of possible significance.
- N** **Not of particular significance** (*Plants only*) Also indicated by a blank entry.
- C** **Common** (*Birds only*) Also indicated by a blank entry.
- **Occasional Visitor Only** (*Birds only*) Not considered of conservational status.

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