

Port Campbell National Park and Bay of Islands Coastal Park

September 1998



Management Plan

This Management Plan for Port Campbell National Park and Bay of Islands Coastal Park is approved for implementation. Its purpose is to direct all aspects of management in the Parks until the Plan is reviewed. A Draft Management Plan was released for public comment in September 1997. Altogether 164 submissions were received.

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Published in September 1998 by Parks Victoria
378 Cotham Road, Kew, Victoria, 3101

National Library of Australia
Cataloguing-in-Publication entry

Parks Victoria.
Port Campbell National Park and Bay of Islands Coastal Park Management Plan.

Bibliography.
ISBN 0 7311 3133 9.

1. National parks and reserves - Victoria - Management.
2. Port Campbell National Park (Vic.) - Management.
3. Bay of Islands Coastal Reserve (Vic.) - Management. I. Title

333.783099457

Cover: Loch Ard Gorge to beyond Port Campbell Township, Port Campbell National Park
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FOREWORD

The spectacular rock stacks and other coastal formations of Port Campbell National Park and Bay of Islands Coastal Park are among Australia's best-known natural icons. The Parks have many important natural values - such as habitat for the rare Rufous Bristle-bird - in addition to their geological importance, and they also contain sites of great cultural significance, both Aboriginal and European. They are attracting increasing numbers of tourists from within Victoria, from interstate and from overseas, and hence have major importance in the local and State economies.

The Government aims to manage and protect national and other parks so that their natural, cultural, social and economic values are safeguarded now and in the future. This Plan sets out how, with community support and involvement, the Government intends to achieve this aim, and to enhance the experiences of visitors to the Parks.

The over-riding aim of the Plan is the protection of the Parks' natural features by appropriate management of fire, weeds and human disturbance. The Plan will ensure that all improvements to visitor support facilities are sensitively integrated into the natural environment, by careful design and siting well away from the cliff edge, so that the coastal landscape remains unimpaired.

Improved orientation and interpretation facilities, and support facilities such as car parks and toilets, will be provided for visitors at key sites such as the Twelve Apostles and Loch Ard Gorge. Private sector investment for a major new tourist attraction and visitor centre in Port Campbell will be encouraged. Such a Centre would attract both international and other tourists, offering them a range of information and services and showing them that to appreciate the area fully they need an extended stay or a return visit.

A Draft Management Plan for Port Campbell National Park and Bay of Islands Coastal Park was released for public comment in September 1997. More than 160 submissions on the Draft Plan were received in the following months, a level of public involvement which I acknowledge and welcome. All these submissions were carefully considered in the preparation of this Plan, which replaces the existing 1990 Management Plan.

I commend the Plan to you, and look forward to continuing community involvement and support in managing these Parks that are so highly valued and loved by so many Victorians and visitors.

Marie Tehan MP
Minister for Conservation
and Land Management

APPROVED MANAGEMENT PLAN

This Approved Management Plan has been prepared under the provisions of section 17 of the *National Parks Act 1975* (Vic.) and is approved for implementation.

The Plan provides the basis for future management of Port Campbell National Park and Bay of Islands Coastal Park. It was finalised following consideration of 164 submissions received on the Draft Plan.

Rod Gowans
A/Director
National Parks

Mark Stone
Chief Executive
Parks Victoria

SUMMARY

Port Campbell National Park and Bay of Islands Coastal Park combine to form a linear reserve along 65 km of Victoria's southern ocean coastline. The Parks' sheer cliffs and gorges, the arches and the off-shore stacks form one of the most scenic and best known coasts in Australia. The Parks contain significant examples of coastal environments, including diverse heathlands, which are a refuge for a wide range of plants and animals. Wetlands, coastal cliffs, offshore islands and rock stacks provide habitat for many bird species. The Parks' diversity of natural values, outstanding coastal scenery and accessibility along the Great Ocean Road make them attractive for sightseeing, nature observation, fishing, surfing and walking.

Port Campbell National Park and the eastern end of the Bay of Islands Coastal Park contain a number of major tourist attractions, including the 'Twelve Apostles'. The rapidly growing profile of these tourist icons and the resultant significant rise in visitation poses major challenges to park planning and management.

The Parks will be managed as world-class protected areas for conservation, recreation and education. Protecting and enhancing the Parks' significant natural environments will be important management goals. The Parks' distinctive characters will be maintained and they will continue to provide a refuge for visitors from the pressures of urban life.

Visitors will be able to enjoy the Parks' diverse attractions through quality visitor facilities at major features. The Parks will continue to make an important contribution to tourism along the Great Ocean Road corridor.

Major management directions for the Parks are summarised below.

- Significant flora, fauna, and other natural and cultural features will be protected.
- A comprehensive visitor orientation, interpretation and facilities strategy will be progressively implemented.
- Pest plants and animals will be controlled or, where possible, eradicated, with co-operation from local land owners and community groups.
- An integrated fire management program that incorporates fire protection and ecological management requirements will be developed.
- The Parks will be marketed as important coastal conservation reserves with outstanding scenery, natural and cultural values, and recreational opportunities.
- Visitor numbers and movements will be carefully managed to reduce impacts on natural values.
- Walking opportunities will be increased. The section of the Great Ocean Walk between Princetown and Port Campbell will be constructed and the Clifftop Walk in the Bay of Islands Coastal Park will be completed.
- Bay of Islands Coastal Park west of Boat Bay will be managed primarily for the protection of its natural values and to provide experiences of a semi-remote coastal setting.
- Quality visitor facilities will be provided at key sites, including the Twelve Apostles and Loch Ard Gorge.
- Private sector investment will be sought to establish a major Tourist Centre on a site in or near the Port Campbell Township, to be a major attraction in its own right and a key support for the orientation and education of visitors to the region.

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1 INTRODUCTION

1.1 Development of the Management Plan

A Draft Management Plan for Port Campbell National Park and Bay of Islands Coastal Park was prepared in consultation with key stakeholders. It incorporated relevant aspects of the Great Ocean Road/Bay of Islands Coastal Park Development Plan (NPS 1994).

Stakeholders, organisations, groups and individuals were offered a major opportunity for further involvement in planning the future management of these important Parks.

The 164 submissions received on the Draft Plan were carefully considered and taken into account in preparing this Approved Plan, which replaces the existing Port Campbell National Park Management Plan (DCE 1990a).

1.2 Major challenges for park management

The major challenges for management in implementing the Port Campbell National Park and Bay of Islands Coastal Park Management Plan will be:

- to preserve and conserve the rich biodiversity, varied ecosystems, highly significant geological features and cultural values, sense of remoteness and outstanding scenic features of a long narrow coastal strip threatened by intense visitor pressures, the powerful forces of the Southern Ocean and inland development;
- to develop and implement sophisticated visitor management infrastructure and systems which ensure that Park visitors gain access to the outstanding scenery and wide range of other recreation opportunities, and receive the services and facilities that enhance their experience of the Parks, while ensuring minimal impact on the natural values of the Parks;
- to further develop the contribution of the Parks to the local and regional economies;
- to involve Friends groups, neighbours, and the local and wider communities in

supporting sound management and promoting the outstanding values of the Parks.

1.3 Park management aims

Sections 4 (Objects) and 17 of the National Parks Act provide the basis for management of the Parks. The following management aims are derived from these sections and, as such, broadly govern all aspects of park management.

Resource conservation

- Preserve and protect the natural environment.
- Allow natural environmental processes to continue with the minimum of interference.
- Maintain biodiversity.
- Conserve features of archaeological, historical and cultural significance.

Park protection

- Protect human life, the Parks and adjacent lands from injury by fire.
- Eradicate, or otherwise control, introduced plants, animals and diseases.

The Park visit

- Provide opportunities for appropriate recreation and tourism.
- Promote and encourage an appreciation, understanding and enjoyment of the Parks' natural and cultural values and their recreational opportunities.
- Encourage appropriate park use and visitor behaviour; foster a conservation ethic in visitors and an understanding of minimal impact behaviour.
- Take reasonable steps to ensure the safety of visitors.

Other

- Provide for and encourage scientific research, surveys and monitoring that will contribute to a better understanding and management of the Parks.
- Co-operate with local, State and interstate government authorities, the community and other interested organisations, to assist in the management of the Parks.

2 BACKGROUND

2.1 Location and planning area

Port Campbell National Park and Bay of Islands Coastal Park are on the Great Ocean Road in south-west Victoria, about 250 km west of Melbourne via Colac (figure 1).

The Parks extend some 17 km eastwards and 48 km westwards along the coast from the Township of Port Campbell. The world-renowned Great Ocean Road runs through, or adjacent to, Port Campbell National Park and the easternmost 6 km of the Bay of Islands Coastal Park.

The planning area includes the following components (figure 2) which, throughout this Plan, are referred to as ‘the Parks’:

- Port Campbell National Park (1750 ha), including Sherbrook Education Area (395 ha);
- Bay of Islands Coastal Park (950 ha) incorporating areas above low water mark of the former Bay of Islands Coastal Reserve, the former Childers Cove Foreshore Reserve and Crown land abutting the former Bay of Islands Coastal Reserve east of Killeens Road.

The planning area also includes:

- Glenample Homestead (8 ha), a nearby historic site leased to the State Government and managed under Section 32AA of the National Parks Act;
- Loch Ard Public Cemetery, an inlier in Port Campbell National Park for which the Director of National Parks is the sole Trustee;
- sites under consideration for the proposed Tourist Centre at Port Campbell.

2.2 Regional context

Port Campbell National Park and Bay of Islands Coastal Park form a narrow coastal strip between Lake Gilliar, 10 km east of Warrnambool, and Princetown, where Port Campbell National Park adjoins Otway National Park. The widths of the Parks vary from a few metres within Bay of Islands

Coastal Park to 2 km in the lower Sherbrook River Valley in Port Campbell National Park.

The Parks lie along the world-famous Great Ocean Road and are important components of one of Victoria’s highest profile tourism regions.

Other popular destinations on a visitor’s itinerary along the Great Ocean Road may include:

- Angahook–Lorne State Park
- Otway National Park
- Otway State Forest
- Cape Otway Lighthouse
- Carlisle State Park
- Melba Gully State Park
- Tower Hill State Game Reserve
- the historic towns of Warrnambool and Port Fairy
- other inland areas such as features on the volcanic Western Plains.

For visitors, the Great Ocean Road region is best known for its spectacular coastline, natural beauty, beaches, maritime history and pastoral heritage. Tourism is vital to the economy of the region.

Several reserves exist within or adjacent to the boundaries of the Parks (figure 3). These include Curdies Inlet and the Peterborough Foreshore Reserve, a range of reserves within Port Campbell Township, a flora reserve and recreation reserve at Princetown, two water reserves, a quarry reserve (now rehabilitated) east of Port Campbell and a rifle range at Two Mile Bay. The historic, conservation and recreational values of many of these public lands complement those of the Parks.

2.3 Significance of the Parks

Port Campbell National Park and the Bay of Islands Coastal Park make a valuable contribution to Victoria’s parks system, which aims to protect viable representative samples of the State’s natural environments occurring on

public land. Parks also provide opportunities for visitors to enjoy and appreciate natural and cultural values and many make important contributions to tourism.

Port Campbell National Park is assigned the IUCN Category II (National Parks) of the United Nations' List of National Parks and Protected Areas. Category II areas are managed primarily for ecosystem conservation and appropriate recreation.

The Bay of Islands Coastal Park is assigned the IUCN Category III (Natural Monuments) which are managed for the protection of the outstanding natural features and appropriate recreation, education and research.

Sections of Port Campbell National Park are also listed on the Register of the National Estate, in recognition of the area's outstanding natural and cultural values, and its importance as part of our heritage.

Port Campbell National Park and Glenample Homestead are classified by the National Trust of Australia (Victoria).

Significant features of the Parks are listed below.

Natural values

- A stretch of coastline where the wild Southern Ocean meets rugged limestone cliffs, which are being rapidly and spectacularly eroded.
- Extraordinary geomorphological features, including cliffs, rock stacks, caves, headlands and embayments.
- A wide range of remnant coastal vegetation types, including important coastal heathlands, which provide a valuable link between other patches of remnant vegetation in the area.
- High biodiversity, including a remarkable diversity of plants.
- Significant flora species, including the Metallic Sun-orchid and Swamp Greenhood.
- Significant fauna species, including the Hooded Plover, Rufous Bristlebird and Swamp Antechinus.

Cultural values

- Evidence of Aboriginal activities, including shell middens, stone artefacts, and staircases cut into the coastal cliffs.
- Shipwrecks off the Parks' coastline relating to important national historic themes, including shipping, navigation, immigration, trade and communication.
- Glenample Homestead, with its pastoral history and its relationship to the *Loch Ard* shipwreck.
- Spectacular coastal scenery which has been attracting tourists since the latter decades of the 19th century.

Tourism and recreational values

- World-renowned and highly-accessible coastal scenery, including the Twelve Apostles, one of Australia's tourism icons.
- Several of the major attractions of the Great Ocean Road touring route.
- Extensive (though of varied quality) visitor facilities, including interpretation facilities, lookouts, board walks, car parks and walking trails.
- A wide variety of visitor experiences, ranging from quick views of outstanding scenery at key visitor destinations to isolated, more remote and less-developed sections of the Parks.
- Impressive natural forces observable in the dramatic scenery, changeable weather and pounding seas.
- A variety of recreational experiences, including walking, swimming, surfing, diving, fishing and sightseeing.

Economic values

- As a result of the high visitation experienced by both Parks, there is substantial economic input into the regional economy from the servicing of tourists' needs (e.g. accommodation, food and souvenirs).

2.4 Creation of the Parks

The coastal area now forming part of Port Campbell National Park was first reserved late last century in recognition of the scenic attractions of the coastline. Much later, Port Campbell National Park was proclaimed on 5 May 1964, as a result of the *National Parks Act 1964* (Vic.).

Port Campbell National Park was extended in 1981 to include a section of the former Port Campbell Water Reserve, bushland areas in the Sherbrook River Valley, sand dune systems between Castle Rock and Princetown, and part of the Sherbrook River Valley as an Education Area. A small house block in Port Campbell Township was excised in 1997.

Most of Bay of Islands Coastal Park was temporarily reserved for public purposes in 1873.

In 1978, the Land Conservation Council (LCC) recommended that the area be reserved as a coastal park (LCC 1978). It was permanently reserved in 1982 and 1984 under the *Crown Land (Reserves) Act 1978* (Vic.) for the protection of the coastline and known as the Bay of Islands Coastal Reserve. As a result of the *National Parks (Amendment) Act 1997* (Vic.), the Bay of Islands Coastal Reserve (above low water mark), Childers Cove Foreshore Reserve and some adjacent Crown land were proclaimed as the Bay of Islands Coastal Park on 4 June 1997.

2.5 Legislation and guidelines

Port Campbell National Park and Bay of Islands Coastal Park are reserved and managed under the provisions of the National Parks Act. The Act requires the Director of National Parks to preserve and protect the natural condition of the Parks and their natural and other features and, subject to this, to provide for the use of the Parks by the public for enjoyment, recreation and education. The Act also provides for appropriate research.

Although recommended by the LCC to be included within the new Park boundary, five reserves in or close to Port Campbell Township, and the Sparkes Gully Gravel Reserve, were not included in the Port Campbell National Park extension of 1981. This was due to uncertainty surrounding the selection of a future tip site and the future of quarrying operations in the area.

The Parks are managed in accordance with Parks Victoria guidelines for the management of parks, LCC recommendations, and other plans and guidelines, including:

- Otway Fire Protection Plan (CNR 1995b);
- Portland Fire Protection Plan (DCE 1990b);
- Code of Practice for Fire Management on Public Land (CNR 1995a);
- Great Ocean Road Bay of Islands Coastal Park Development Plan (NPS 1994);
- Moyne Shire Coastal Area Study – Final Draft Report (Moyne Shire 1996);
- Victorian Coastal Strategy (NRE 1997);
- Corangamite Regional Catchment Strategy (Corangamite Catchment and Land Protection Board 1997);
- Glenelg Regional Catchment Strategy (Glenelg Catchment and Land Protection Board 1997).

3 STRATEGIC DIRECTIONS

3.1 Park vision

A future visitor to Port Campbell National Park and Bay of Islands Coastal Park thrills at the spectacle of the dramatic coastal setting, where the forces of the Southern Ocean meet the Australian continent. The two Parks are world-renowned for their scenic grandeur and widely appreciated for their rich endowment of flora, fauna, Aboriginal heritage and European historic sites of romance, tragedy and human endeavour.

The Parks are recognised for the key role they play in the conservation of remnant coastal habitats. The protection of the Parks' natural features, including the richly diverse heathlands, is the cornerstone of park management. The many significant plant and animal species are well protected by appropriate fire regimes and careful management of potential threats, such as weeds and human disturbance.

Excellent visitor facilities are sensitively integrated into the natural environment, preserving the sense of isolation induced in visitors by the coastal landscape. Facilities are provided for car and coach-based visitors at popular destinations, at a sufficient distance from the natural attractions and the coastline to avoid the intrusion of vehicles. Simpler facilities in many less developed areas allow the more adventurous to experience a greater feeling of remoteness and solitude. Walking tracks link the key sites in the eastern sections of both Parks. Excellent information and interpretative services assist visitors to understand and appreciate the Parks' diverse values, particularly the rugged geological formations.

The Parks are highly valued as significant components of the Great Ocean Road visitor experience and Victoria's natural tourism attractions.

Visitors at the new Tourist Centre at Port Campbell enjoy major interpretation displays and shows highlighting the natural attractions of the area, local Aboriginal culture and European history, particularly the shipwrecks,

as well as being able to enjoy a meal or light refreshments.

Careful and sensitive management, with invaluable assistance from Friends and other volunteer groups, and supportive local communities and municipalities, ensure that these popular Parks are being preserved for future generations.

3.2 Management directions

Major management directions for the Parks are outlined below.

Resource conservation

- A strong emphasis will be given to protecting and enhancing the Parks' biodiversity.
- Significant flora and fauna species and vegetation communities will be given special protection.
- Ecological fire management will be undertaken on a basis of sound research to manage significant vegetation and fauna habitats.
- Ongoing research and surveys to improve knowledge of the Parks' flora and fauna and cultural resources will be encouraged.
- Information from all surveys, research and monitoring studies will be assessed and, where relevant, incorporated into park management.
- Most of Bay of Islands Coastal Park west of Boat Bay will remain undeveloped to protect remnant vegetation and fauna, and provide for semi-remote experiences.
- Aboriginal sites and artefacts, and relics of non-Aboriginal heritage, will be protected and, where appropriate, interpreted.
- The geology and landform of the Parks will be progressively surveyed and mapped.

Park protection

- An integrated fire management plan that incorporates both ecological management and fire protection requirements will be developed.
- A pest plant and animal control strategy will be developed that identifies priority weeds and pests, gives emphasis to the protection of significant sites and vegetation communities, and encourages co-operation with Park neighbours.
- Previously disturbed areas not required as sites for visitor facilities will be progressively rehabilitated.

The Park visit

- The Parks will be marketed for their significant natural, cultural, scenic and recreational values, offering a wide range of quality visitor experiences that require a stay of at least a day, and preferably longer, to appreciate.
- Visitor monitoring and modelling will be expanded and improved to increase understanding of visitor movements, needs and satisfaction.
- Pre-visit information services will be improved to enable visitors to appreciate park values, better plan their visit and easily locate the Parks, their features, services and facilities.
- Private sector investment for a major new Tourist Centre to be a major tourist attraction at or near Port Campbell will be encouraged.
- Significant visitor information/orientation facilities will be provided at the eastern and western gateways to the Parks to give an overview of the Parks' attractions and allow visitors to orientate themselves before visiting individual attractions. Other orientation facilities will be provided at Princetown and all key attractions.
- Visitor enjoyment and understanding of the Parks will be enhanced by improved interpretation at all attractions.

- Visitor access to the Parks' major scenic features will be carefully managed to control impacts on park values, ensure access to a wide range of sites and to ensure high quality visitor experiences.
- The Parks' significant natural, scenic and cultural values will be protected at sites where visitor facilities are upgraded or developed.
- Visitor safety will be pursued through regular monitoring of cliff stability and provision of safety information.
- Visitor parking will be kept at a distance from sensitive sites and the coastline.

Community awareness and involvement

- Park neighbours, volunteers and Friends groups will be encouraged to assist in the protection of the Parks.
- Co-operation will be fostered with community groups and adjacent land owners to conserve and enhance native vegetation adjacent to the Parks and promote links between the Parks and other areas of remnant vegetation.

Other

- Liaison with State, local Government and other tourism bodies will be maintained and improved to promote ecologically sustainable tourism development and management.
- Liaison with VicRoads and local Shires will be improved to co-ordinate all aspects of management of the Great Ocean Road and other access roads with park management.

3.3 Zoning

A park management zoning scheme has been developed to:

- provide a geographic framework in which to manage the Parks;
- indicate which management directions have priority in different parts of the Parks;
- indicate the types and levels of use appropriate throughout the Parks;

- assist in minimising existing and potential conflicts between park uses and activities, or between these and the protection of park values;
- provide a basis for assessing the suitability of future activities and development proposals.

Four management zones apply to the Parks: Conservation; Conservation and Recreation; Recreation Development, and Education.

Also, eight Special Protection Areas have been delineated to provide additional protection for particularly significant and sensitive values. The seven Special Protection Areas and their significant values are listed below:

- Two Mile Bay – geology, wetlands, small mammal diversity including Swamp Antechinus, White-footed Dunnart and Swamp Skink, and Aboriginal middens;
- Twelve Apostles beach – Little Penguins;
- London Bridge beach and adjacent heathlands – Little Penguins and small mammal diversity (including White-footed Dunnart);
- Flaxmans Hill – Metallic Sun-orchid, Clover Glycine, Little Penguin, and small mammal diversity (including White-footed Dunnart);
- an area to the east of Port Campbell between the coast and the East – West Fireline Track – Metallic Sun-orchid;
- an area extending from Bakers Oven to the east of Loch Ard Gorge including the areas zoned Conservation, and Conservation and Recreation – historic Cemetery, small mammal diversity including Swamp Antechinus, and Rufous Bristlebird habitat;
- Point Ronald to Clifton Beach (between cliff edge and high tide level) – intact dune limestone vegetation, Peregrine Falcon;
- Site of Glenample Homestead buildings – historic buildings.

Two Special Management Areas are also delineated:

- the old pine plantation in the Sherbrook River Valley of Port Campbell National Park;
- a section of Port Campbell National Park within Port Campbell Township, for the management of public utilities and facilities (e.g. water and telecommunications facilities).

Table 1 specifies the management zone and overlay area characteristics, and locations are shown in figure 2.

TABLE 1 MANAGEMENT ZONES AND OVERLAYS

ZONES				
	CONSERVATION	CONSERVATION & RECREATION	RECREATION DEVELOPMENT	EDUCATION
AREA/LOCATION	Port Campbell National Park, 1156 ha, 66% of Park. Bay of Islands Coastal Park 840 ha, 88% of Park. Semi-remote areas of Port Campbell National Park; semi-remote areas of Bay of Islands Coastal Park.	Port Campbell National Park, 193 ha, 11% of Park. Bay of Islands Coastal Park 110 ha, 12% of Park. Glenample Homestead (8 ha). Loch Ard Public Cemetery. Childers Cove, and area south of the Great Ocean Road from Boat Bay to Peterborough, within Bay of Islands Coastal Park; London Bridge, Loch Ard Gorge area including Sherbrook Camp, and Twelve Apostles Visitor areas within Port Campbell National Park.	Port Campbell National Park, 6 ha, <1% of Park. Port Campbell Foreshore, Caravan Park, existing Visitor Information Centre; possible alternative sites for the proposed Tourist Centre within and outside the Park (figure 6).	Port Campbell National Park, 395 ha, 22% of Park. Section of the Sherbrook Block recommended as an Education Area by the LCC (1978).
VALUES	Coastal habitats of high conservation significance.	Important natural values and visitor facilities.	High-use visitor nodes with Park management facilities.	Discrete area of high education value.
GENERAL MANAGEMENT AIM	Protect sensitive natural environments and provide for minimal impact recreation activities and simple visitor facilities, subject to ensuring minimal interference with natural processes.	Protect less sensitive natural environments and provide for sustainable dispersed recreation activities and modest-scale visitor facilities without significant impact on natural processes.	Provide primarily for high-use visitor nodes with a concentration of recreation and/or interpretation facilities.	Protect primarily for environmental education in a relatively undisturbed setting.

Table 1 (cont.)

	OVERLAYS		
	SPECIAL PROTECTION AREA	SPECIAL MANAGEMENT AREA - PINES	SPECIAL MANAGEMENT AREA - UTILITY MANAGEMENT
AREA/LOCATION	Port Campbell National Park, 62 ha, 3.5% of Park. Bay of Islands Coastal Park, 142 ha, 15% of Park. Comprises areas at Flaxmans Hill, London Bridge, Twelve Apostles, Two Mile Bay, an area to the east of Port Campbell Township, Loch Ard Gorge area, coast linking Ronald and Clifton Beach, the site of Glenample Homestead buildings and the Loch Ard Public Cemetery.	Port Campbell National Park, 83 ha, 4.7% of Park. Comprises part of Sherbrook River Valley.	Port Campbell National Park, 3 ha, <1% of Park. Comprises an area abutting the Great Ocean Road in Port Campbell Township.
VALUES	Discrete significant areas requiring special protection.	Opportunities for the reinstatement of indigenous vegetation.	Public utilities (water and telecommunications facilities) and other community facilities (e.g. police station buildings).
GENERAL MANAGEMENT AIM	Protect specific natural or cultural values in specific areas and sites where a special management focus is required.	Provide for removal of pine trees and reinstatement of area with indigenous vegetation.	Provide for public utilities and other community facilities.

4 RESOURCE CONSERVATION

4.1 Geological and landform features

Port Campbell National Park and Bay of Islands Coastal Park are within an area of high geological and geomorphological significance. Collectively, the geological exposures and landforms within the Parks form an area of national significance. Individual significant sites have been identified that illustrate either contemporary or past geological and land forming processes. The high significance rating is based on the excellent displays of sedimentary rocks in the coastal cliffs and the variety of coastal and karst landforms related to both past and present geomorphological processes (appendix I).

The geology of the Parks comprises marine limestones and marls (calcareous silts) of the Tertiary (Oligocene to Miocene) age overlain by Pleistocene dune limestones. The exposures in the coastal cliffs include the type sections of three major geological units of the Heytesbury Group (Clifton Formation, Gellibrand Marl and Port Campbell Limestone). Some of the Tertiary beds are richly fossiliferous, and fossil soils are preserved in the Pleistocene dune limestones.

Precipitous or undercut cliffs up to 60 m high are the dominant coastal landform and create some of the most spectacular coastal scenery in Australia. Strong wave action is very effective in eroding these relatively soft, horizontally-bedded rocks, which are fractured along intersecting joint planes. Where the joints are closely spaced, a deeply indented coastline with narrow, elongated bays and headlands has developed, as at Loch Ard Gorge, The Grotto and the Bay of Martyrs. Between the Bay of Islands and Childers Cove, semi-circular bay-heads have developed where eroding cliffs have intersected sinkholes or caves in the limestone. Where there is a thick capping of dune limestone at the cliff top the coastline is straighter, such as north-west of Flaxmans Hill and south-east of Gibson Steps.

Outstanding examples of arches, rock stacks, blowholes and coastal gorges include London Bridge, The Arch, the Twelve Apostles, The

Grotto and Loch Ard Gorge. Shore platforms are poorly developed. Beaches are generally narrow and in many places the cliffs are awash at high tide. There are active backshore coastal sand dunes where the cliffs are low, such as at Newfield Bay and the Sherbrook River mouth. Climbing dunes (dunes being blown up cliff faces) have developed near Flaxmans Hill. Older cliff top dunes stabilised by vegetation occur at the Bay of Martyrs, and between Point Ronald and Gibson Beach.

Former cliffs developed at higher sea levels or now isolated from wave action by beaches, dunes or rock debris have declined in slope to become vegetated bluffs with a mantle of weathering debris and soil, and are subject to less frequent or catastrophic change. The eastern ends of Three Mile Beach and Two Mile Bay are examples.

Many of the significant geoscience features are a direct consequence of erosion from high wave energy, strong winds, and intense rainfall and runoff events. This process exposes the Tertiary rock formations and produces the various cliff and shoreline features.

If sea level remains constant or there is a sea level rise, continued cliff erosion will cause the coastline to retreat, and the area of the present Parks will be reduced. Coastal features will change, especially those with arches, overhanging cliffs or caves. A collapse of the remaining span of London Bridge is to be anticipated. If sea level falls or there is a marked reduction in wave energy along this coastline (e.g. due to climatic change) the rate of coastal recession will reduce and presently active cliffs will degrade into more stable coastal bluffs.

Fragments, slabs or blocks of rock occasionally detach from the cliff face, and linear segments of the cliff fail by falling, sliding or slumping. The joint fracture planes and the weak consolidation of many rocks determine the rate and direction of erosion and the location of cliff failures.

The rate of coastal retreat is uneven. Persistent small-scale erosion is general, but several

specific catastrophic events involving metres of landward retreat have occurred this century. Recorded cliff failures include the steps behind Bakers Oven Rock (1932), the ‘trunk’ of Elephant Rock (1935), a 70 m long cliff section near Sentinel Rock (1939), a sector at The Amphitheatre (1970) and the arch of London Bridge (1990) (section 6.5).

Natural changes in rainfall, and the impact of road works, paving, buildings and foot traffic on vegetation, soils and land surfaces, can alter runoff, infiltration rates and water tables. There could be adverse effects on landforms, particularly cave and other karst formations, and stream channel development. Soft rock formations, limestone pinnacles and fossil locations are sensitive to trampling and vandalism. The integrity and dynamics of the active cliffs could be adversely affected by coastal protection or other coastal engineering works.

Aims

- Protect significant and sensitive geological and geomorphological features and land-forming processes.
- Minimise impacts of visitors and other activities on the significant geological and geomorphological features.
- Provide opportunities for visitors to observe and experience the features and processes of the Parks.
- Improve understanding of the nature, origin and dynamics of the landform and geological features of the Parks.

Management strategies

- *Develop an inventory of geological and geomorphological sites, and their sensitivity to disturbance, to assist in planning visitor facilities including roads, tracks and viewing platforms.*
- *Determine the impact of land uses, both inside and outside the Parks, on their significant geological and geomorphological features and land-forming processes.*

- *Ensure that future developments and facilities do not impact adversely on the Parks’ significant geological and geomorphological features and land-forming processes.*
- *Encourage scientific study and research into the nature, origin and dynamics of the landform and geological features of the Parks.*

4.2 Vegetation

Port Campbell National Park and Bay of Islands Coastal Park contain some of the largest and most important areas of native vegetation remaining between Portland and the Otways.

The flora of Port Campbell National Park has been surveyed and vegetation types mapped (Grant 1987), as has the easternmost 5 km of the Bay of Islands Coastal Park (Westbrooke et al. 1996). There have been other vegetation surveys mostly related to impact assessment (e.g. Duncan et al. 1991; Meredith et al. 1996) or specific research projects. Port Campbell National Park and parts of Bay of Islands Coastal Park are regularly visited by local conservation groups and field naturalists, who have considerable knowledge of the Parks’ flora. The flora of the Parks is therefore well documented, although the sections of Bay of Islands Coastal Park west of Boat Bay require further vegetation survey and mapping. The coastal rock stacks also have not been surveyed. Sites of botanical significance have been identified in Port Campbell National Park (Grant 1987), but no assessment of sites of significance has been undertaken for the Bay of Islands Coastal Park.

Six species of national significance (Scented Spider-orchid, Swamp Greenhood, Clover Glycine, Square Raspwort, Lime Fern, and Metallic Sun-orchid) occur in Port Campbell National Park, along with eight species of State significance (appendix II).

Two species of national significance (Metallic Sun-orchid and Clover Glycine) occur in Bay of Islands Coastal Park, together with three species of State significance (appendix II).

Metallic Sun-orchid and Clover Glycine are listed under the *Flora and Fauna Guarantee Act 1988* (Vic.).

Specimens of the plants are occasionally taken by orchid fanciers. The most important areas for the conservation of Metallic Sun-orchid and Clover Glycine are included within Special Protection Areas (section 3.3).

Because of the extensive depletion of native vegetation in the surrounding region, many plant species in both Parks are of regional significance.

The broad native vegetation communities found within Port Campbell National Park include (after Grant 1987):

- estuarine swamp sedgeland
- cliff top grassland/shrubland
- sand dune shrubland
- heathland
- open forest
- riparian open forest
- dune-swale community
- swamp communities.

Although Meredith et al. (1996) described a range of communities from the Two Mile Bay area at a finer scale, and Duncan et al. (1991) described a range of communities from the Loch Ard Gorge area, also at a finer scale, Grant's community descriptions and mapping remain a useful and relevant management tool.

Westbrooke et al. (1996) defined five communities within the eastern part of Bay of Islands Coastal Park:

- eucalyptus low woodland
- low heath
- coastal heath
- dune complex
- wetland.

Both Parks have had a complex land use history with vegetation having been affected in the past by various combinations of grazing, clearing and altered burning regimes. The open grassland, cliff top grassland/shrubland, sand-

dune shrubland and open forest communities in particular have been severely affected by past disturbance. Such disturbances were significantly reduced after Port Campbell National Park was declared, but have continued until recently in parts of Bay of Islands Coastal Park. Off-road vehicle activity continues to affect the vegetation in some parts of Bay of Islands Coastal Park.

The dune limestone vegetation between the cliff line and high water mark in the area between Point Ronald and Clifton Beach has been largely inaccessible to grazing and recreational access and remains in good condition. This area is included within a Special Protection Area.

The major potential threats to the vegetation in the Parks are inappropriate fire regimes and invasion by weeds. Additionally, some areas of native vegetation have been lost through realignments of the Great Ocean Road (section 8.2.1) and the development of access roads, car parks and other facilities. In the long-term, coastal erosion will also gradually reduce the size of the Parks and the area of vegetation (section 4.1). The Parks are a naturally dynamic environment, and bare or poorly vegetated areas and mobile dunes are likely to have occurred naturally in some places.

Aims

- Conserve native plant communities in their natural condition and maintain and enhance habitat diversity while allowing natural environmental processes to continue.
- Maintain genetic diversity.
- Provide special protection for significant plant species and communities, and sites of botanical significance.

Management strategies

- *Manage Flora and Fauna Guarantee (FFG) listed plant species and communities according to Approved Action Statements, when prepared.*
- *Monitor threatened plant populations and significant sites using the monitoring system VrotPop, in conjunction with NRE,*

Friends groups and naturalists (section 7.1).

- *Manage and monitor Metallic Sun-orchid with an adaptive approach, using either fire (where appropriate and achievable without significant weed invasion) or slashing of vegetation, combined with soil disturbance (Cropper 1993) until the Action Statement is prepared.*
- *Protect Clover Glycine populations from grazing by rabbits. Manage the populations with an adaptive approach, using either fire (where appropriate and achievable without significant weed invasion) or slashing of vegetation until the Action Statement is prepared.*
- *Monitor populations of plants susceptible to collecting by fanciers, and in conjunction with NRE take necessary steps to prevent collecting.*
- *Survey and map the vegetation of the western section of Bay of Islands Coastal Park, the sections of Port Campbell National Park undersampled by Grant (1987) and the larger coastal rock stacks in both Parks.*
- *Encourage research on significant plant species and communities.*
- *Identify, map and protect as necessary, sites of botanical significance in the Parks, including those identified by Grant (1987).*
- *Actively manage vegetation communities to retain habitat and community diversity by giving priority to the control of pest plants and the implementation of ecologically appropriate fire regimes (sections 5.1 and 5.2).*
- *Ensure that records of all significant species in the Parks, including those obtained by conservation groups and field naturalists, are incorporated into the Flora Information System (NRE 1998) (section 7.1).*

- *Ensure that the potential impacts on flora of any future developments in the Parks are fully assessed in the planning phase, and are avoided or minimised by appropriate siting and design. Undertake necessary surveys at appropriate times of the year to ensure that seasonal species (e.g. orchids) are identified.*
- *Survey areas degraded through past land use or development, and, as appropriate, prioritise for rehabilitation and implement revegetation programs.*
- *Encourage adjacent land owners to develop native vegetation buffers alongside the Parks, particularly where the Parks are critically narrow (section 7.2).*

4.3 Fauna

The Parks play a vital role in fauna conservation in the region. They support small populations of one nationally threatened species (Hooded Plover, also FFG listed), and 12 species of State significance, including important populations of Rufous Bristlebird (also FFG listed), Swamp Antechinus, Swamp Skink and Glossy Grass Skink (appendix III).

As well as these threatened species (appendix III), the Parks support a fauna that is regionally important as a major contributor to the conservation of biodiversity in south-west Victoria. Although relatively small, the Parks represent a major area of remnant habitat within a region that has been largely cleared of native vegetation. Avoidance of further loss of habitat is important to species such as Rufous Bristlebird. Retention of the contiguous nature of the vegetation within the Parks is important in ensuring that sub-populations of species do not become internally isolated. The program of developing and enhancing habitat links for Rufous Bristlebirds between the Parks and other nearby areas is important for maintaining the long-term viability of the species in the Parks.

Most of the Parks' significant fauna species do not require special management other than habitat management through the application of appropriate fire regimes and control of pest

plants and animals (sections 5.1 and 5.2). Significant fauna species occur in a wide range of habitats within the Parks, but key habitat areas are:

- high energy beaches and unvegetated cliff top areas or scalds (Hooded Plover);
- sand dune areas on beaches backed by cliffs (Little Penguin rookeries);
- sand dunes and lower talus slopes at Two Mile Bay (Broad-toothed Rat, Rufous Bristlebird);
- mature *Leptospermum scoparium*–*Baumea juncea* heathland and moist gully areas (Rufous Bristlebird);
- other heathland areas that are in good condition (Swamp Antechinus, White-footed Dunnart, Glossy Grass Skink);
- creeks and wetland areas at Port Campbell Creek, Sherbrook River and Two Mile Bay (Australasian Bittern, Lewins Rail, Swamp Skink).

An important maternity cave for the threatened Common Bent-wing Bat occurs just west of Bay of Islands Coastal Park near Lake Gilliar (section 8.2.2).

The fauna of parts of Port Campbell National Park (e.g. Two Mile Bay and Loch Ard Gorge areas) has been surveyed (Twyford 1986, 1997; Duncan et al. 1991; Belcher 1992; Meredith et al. 1996), but there has not been a complete survey of the Park, and some groups (notably freshwater fish, reptiles and amphibians) are poorly documented. Sherbrook River is most likely to contain the most diverse native freshwater fish population in the Parks (I. Smith, pers. comm.). Westbrooke et al. (1996) surveyed the fauna of the easternmost 5 km of the Bay of Islands Coastal Park but the remainder of the Park has not been surveyed.

Eastern Grey Kangaroos occur in both Parks. In Port Campbell National Park, kangaroos shelter in the dense vegetation but frequently move out to adjacent farmland to feed. This also occurs at Bay of Islands Coastal Park but is less of an issue because of the lower numbers of kangaroos. Overall, kangaroo numbers within Port Campbell National Park are not

high in comparison with many other parts of the State, although they appear to have increased in recent years and they are of some concern for some neighbours. The density of the vegetation within the Park makes population assessment very difficult. Destruction permits are available to adjacent landholders from NRE. Control programs need to ensure that Red-necked Wallabies, similar in appearance to small kangaroos but locally uncommon, are not inadvertently killed.

Aims

- Protect native fauna and maintain genetic diversity.
- Provide special protection for significant fauna.
- Maintain fauna habitat diversity and integrity.

Management strategies

- *Manage Flora and Fauna Guarantee listed species according to Approved Action Statements.*
- *If necessary to conserve populations in the Park, on the basis of sound research, protect or actively manage key habitat areas for significant species.*
- *Encourage and support fauna surveys, giving priority to reptiles and amphibians throughout the Parks, Broad-toothed Rat and freshwater fish in areas of appropriate habitat, and fauna in areas not previously surveyed, such as Bay of Islands Coastal Park west of Boat Bay, Port Campbell Creek, coastal rock stacks, and the eastern and western ends of Port Campbell National Park.*
- *Encourage and support research and monitoring of significant fauna in the Parks to identify their distribution and ecological requirements, and manage accordingly.*
- *Encourage and support surveys and research on invertebrate communities in the Parks to identify significant species and*

important sites for invertebrate conservation.

- *Maintain and enhance habitat quality and diversity for the range of fauna species in the Parks, through the control of pest plants and animals and the maintenance of appropriate fire regimes (sections 5.1 and 5.2).*
- *Minimise removal of native vegetation and avoid the creation of barriers to wildlife movements in planning and developing visitor facilities.*
- *Control introduced predators in areas where dense vegetation has been opened up by fire or slashing, or where significant fauna are threatened by predation.*
- *Continue to liaise with neighbouring landholders, landcare groups, local municipalities and others as appropriate to encourage the maintenance, enhancement and addition of ecological corridors (including roadsides) that connect the Parks with remnant habitats in the hinterland; and the protection of Sherbrook River and its tributaries upstream of Port Campbell National Park.*
- *Where required, assist adjacent landholders with kangaroo management through a monitoring program.*
- *Liaise with NRE and support the issuing of destruction permits where appropriate. Seek to ensure that kangaroo control does not impact on Red-necked Wallaby populations.*

4.4 Landscape

The landscape of the Parks is extraordinary. Weather, sea and light often create remarkable visual effects which can have a tremendous impact on visitors. The terrain induces a sense of isolation, which is a vital ingredient of the attractiveness of the area.

The Parks' coastline is one of the most spectacular and unusual in Australia. The section within Port Campbell National Park

contains many of the most outstanding features and has been classified by the National Trust of Australia (Victoria). Details of the landscape and visual qualities have been described in a number of studies including the Town and Country Planning Board (TCPB 1977) and Moss (1985).

The landscape is characterised by a broad flat to gently undulating plain with low windswept heathland vegetation, contrasting dramatically with high vertical and rugged cliffs. The elevation of the plain decreases from east to west, rising again west of Boat Bay in the Bay of Islands Coastal Park. Features such as sinkholes occur, particularly west of Port Campbell Township.

There are attractive wetlands within the valleys of Port Campbell Creek and Sherbrook River.

The narrow width of the Parks affects their visual integrity. Visitors are continually reminded of the Parks' narrowness as views are afforded from the Parks to adjacent farmland. Some inappropriate developments on adjacent land have occurred which, because of the low stature of the coastal heathland, cause visual impacts on the viewscape from within the Parks (section 8.2.3).

Most works disturbing the natural environment are all too obvious to visitors. The open rolling character of the landscape, the low heathland vegetation, and accessibility from the Great Ocean Road and access tracks, all ensure a high level of visibility throughout the Parks.

Access routes and recreational facilities are essential for the welfare and enjoyment of visitors, and to minimise visitor impacts. However, much can be done to minimise the visual impact of facilities by their careful selection, siting and design.

BHP Petroleum is investigating development of the Minerva gas field 12 km offshore from Port Campbell, and options for piping the gas ashore (section 8.1.1). Both the offshore well head and pipeline could have a significant impact on the landscape values of the Parks.

Powerlines in some sections of the Parks protrude high above the surrounding landscape and are a significant visual intrusion along

some sections of the Great Ocean Road (section 8.1.1.).

Aims

- Minimise visual impacts on the natural landscape, especially as seen from the Great Ocean Road and other access routes and viewing points.
- Rehabilitate, remove or ameliorate undesirable visual intrusions, including inappropriate car parks.

Management strategies

- *Develop guidelines for monitoring and managing the landscape values of the Parks and abutting areas in accordance with Parks Victoria guidelines.*
- *Minimise the impact of signs and visitor facilities in the Parks on the natural landscape of the Parks.*
- *Liaise with shires, utility managers and Park neighbours to minimise the impact of existing and new signs and developments on views from the Great Ocean Road and vantage points in the Parks.*

4.5 Cultural heritage

Relatively large numbers of Aborigines populated the plains and coast of the region from the Otway Ranges to Port Fairy. The Girai Wurrung tribe, and its 21 associated clans, was located between Princetown and Warnambool and extended inland to Lake Bolac.

Aborigines concentrated at sites where plentiful supplies of food and fresh water were found, mostly at inland marshes, lakes and river mouths. Dispersed nomadic groups occupied the plains and wooded areas. Only dense forests were unoccupied. The littoral zone in the Port Campbell area, especially about the mouths of watercourses, probably provided supplies for Aboriginal groups visiting the area.

Although no systematic archaeological surveys have been undertaken, a variety of evidence of Aboriginal activities has been found in the Parks, mostly shell middens, some stone artefacts, a few staircases cut into the coastal

cliffs, and at least one burial site. The various shell middens in the Parks are close to coastal access points that are, in some cases, now visitor access points. Some middens are being damaged by visitor access at Childers Cove and Massacre Bay. A midden near Flaxmans Hill in Bay of Islands Coastal Park contains remains of a wide range of small mammals, including species no longer present in the area (J. Seebeck pers. comm.).

Historical records indicate that Aborigines constructed the first steps cut into the soft limestone cliffs to gain access to the shoreline for harvesting shellfish and other foods. European settlers significantly upgraded the steps and developed new steps to improve access to fishing sites.

The archaeological significance of the step sites has not yet been assessed.

All Aboriginal sites are protected under the provisions of the *Archaeological and Aboriginal Relics Protection Act 1972* (Vic.), and the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cwlth).

There are many historic places within and adjacent to Port Campbell National Park and Bay of Islands Coastal Park.

Glenample Homestead, which is adjacent to Port Campbell National Park and managed by Parks Victoria, has considerable historic interest for its role in the early pastoral settlement of this remote coastal location, and particularly for its relationship with the wreck of the *Loch Ard*. Glenample Homestead is historically important and is listed on the Historic Buildings Register.

All that remains of the foundations of Clifton Holiday House is situated in the sand dunes near Clifton Beach, close to but outside the boundary of Port Campbell National Park. Loch Ard Public Cemetery, near the Loch Ard Gorge, contains the remains of a number of victims of the *Loch Ard* disaster, as well as those of early settlers. The Cemetery is not part of the Port Campbell National Park.

The Point Ronald Tunnel and Breakwater flood control works on the Gellibrand River are

located within the Port Campbell National Park.

The Parks' coastline is part of the 'Shipwreck Coast'. Notable wrecks in waters adjacent to the Parks include the *Antares*, *Newfield*, *Falls of Halladale*, *Loch Ard* and *Schomberg*.

Aims

- Protect archaeological and historic sites.
- Provide access to, and interpret, selected archaeological and historic sites, consistent with the protection of the historical values and safety of visitors.
- Develop the tourism potential of the Glenample Homestead complex, consistent with protecting historical values and complementing the development of tourism along the Great Ocean Road.

Management strategies

- *Encourage and support further archaeological studies to identify additional sites requiring management and protection in accordance with Parks Victoria guidelines. Involve local Aboriginal communities and Aboriginal Affairs Victoria (AAV) in identifying, managing and protecting Aboriginal sites.*
- *Liaise with local Aboriginal communities and AAV before commencing works which may cause earth disturbance in the vicinity of archaeological sites, or in areas likely to contain sites.*
- *Undertake archaeological surveys, in co-operation with AAV, before the commencement of track works along the alignments of proposed new or upgraded walking and vehicle tracks,*
- *Develop interpretation for sites of Aboriginal significance, in consultation with local Aboriginal communities and AAV.*
- *Take necessary action to protect Aboriginal middens that are being damaged by visitor access.*

- *Enhance the Parks' historical material with assistance from local historical associations and individuals.*
- *Ensure that any developments at historic places are compatible with, and enhance, the significance of those places.*
- *Ensure that conservation work is supervised and undertaken by properly qualified heritage conservation practitioners.*
- *Manage or conserve significant historic places in accordance with Parks Victoria guidelines including the Burra Charter (ICOMOS 1988).*
- *Develop a master plan (including a conservation management plan) for Glenample Homestead to conserve its fabric and provide for its use as a tourist facility (section 6.3.2) in accordance with Parks Victoria guidelines and Heritage Council approvals.*
- *Ensure that Glenample Homestead is run as a viable operation, thereby ensuring its ongoing maintenance and value.*
- *Liaise with the Maritime Heritage Unit, Heritage Victoria, in relation to promotion, interpretation, protection and management of shipwreck sites.*

4.6 Conservation management

As a result of the Parks' small sizes, narrow linear shapes, histories of disturbance, and high visitor pressures, many of their natural values face ongoing threats.

The natural environment is extremely complex and dynamic. A conservation management framework is needed to support management decision making for protecting and enhancing the natural environment, including biodiversity, landscape and biological, ecological and physical processes. Such a framework will provide for the collection of reliable environmental data, including historical records of past management and land use activities, the identification indicators of the health of broad

elements of the natural environment, the establishment of benchmarks and the monitoring and assessment of change against the benchmarks.

Research and modelling will be needed to identify suitable indicators, measure change and identify cause and effect relationships.

The potential impacts on natural values on increasing visitor use of sites in the Parks are addressed in chapter 6 of this Plan.

Aim

- Develop and apply systems which ensure change is managed to protect and enhance the natural environment.

Management strategy

- *Develop and implement an integrated environmental management plan as part of Park Victoria's Environmental Management System that:*
 - *establishes appropriate benchmarks for current environmental conditions;*
 - *monitors critical changes to the natural environment through measuring of indicators which effectively represent the critical elements of the natural environment;*
 - *identifies thresholds for acceptable environmental change;*
 - *provides predictive models to support sound and integrated environmental and visitor management decision making and incorporates decision support models to improve environmental management;*
 - *triggers appropriate and effective management action to protect and enhance environmental quality.*

5 PARK PROTECTION

5.1 Fire management

The National Parks Act requires the Director of National Parks to ensure that appropriate and sufficient measures are taken to protect parks and humans from injury by fire. Current fire protection measures are in accordance with the Code of Practice for Fire Management on Public Land (CNR 1995a) and with the Otway Fire Protection Plan (CNR 1995b) for Port Campbell National Park and with the Portland Regional Fire Protection Plan (DCE 1990b) for Bay of Islands Coastal Park. These plans were prepared by NRE in consultation with the CFA, other relevant agencies and the public. They include provision for the maintenance of the Parks' system of fire protection tracks and liaison with neighbouring landholders for the common purpose of fire management within the Parks and on adjacent land.

Over the last two decades, fire has become relatively infrequent in Port Campbell National Park but is more frequent in parts of Bay of Islands Coastal Park, mostly in the form of illegal deliberately lit fires or escapes from illegal camp fires. Wood barbecues at Murnanes Bay and in the VicRoads picnic area opposite Crofts Bay in Bay of Islands Coastal Park constitute a fire risk (section 8.2.1). A slashed firebreak has been constructed around the picnic area opposite Crofts Bay. There are no wood barbecues in Port Campbell National Park.

A reasonably reliable fire history has been documented for Port Campbell National Park for the period since its declaration in 1964. All recorded fires have been small and most were fuel reduction burns (mostly close to Port Campbell Township and in the Sherbrook River area), with a few wildfires at scattered localities that were rapidly controlled. There was a period of management burning in 1968–73 and another in 1990–91, but most of the vegetation in the Park has been unburnt for at least 20 to over 32 years. According to the Otway Fire Protection Plan, most of the Park is not planned to be burnt for fire protection purposes, but there are small areas of Priority 2 burning zone at Sherbrook River. In addition, a very small

area near the lookout opposite Port Campbell Township was burnt to reduce fuel in April 1997.

The fire history for Bay of Islands Coastal Park has not been documented. In general, there has been little recent burning at the eastern or western ends but a relatively high number of illegal burns in the section between Radfords and Killeens roads. The impacts of frequent fire on the significant flora and fauna that occur in these areas are not known.

The Portland Regional Fire Protection Plan does not require any fuel reduction burning for fire protection in Bay of Islands Coastal Park.

The low fire incidence at Port Campbell National Park since 1964 has resulted in a change from more open and grassy vegetation to denser heaths and shrublands in the 1960s many areas. Similar changes can be seen in areas of Bay of Islands Coastal Park. There are still considerable areas of grassy, open vegetation in that Park due to the greater incidence of fire in recent times and the presence of grazing until 1985.

Slashing of fire breaks has minimal long-term impacts on heathy vegetation (especially if slashed areas are rotated or allowed to regrow every so often) and can create beneficial conditions for some rare plants. Slashed breaks are preferable to mineral earth breaks. The regional Fire Protection Plans set out the firebreak network for each Park.

The slashed area at the Port Campbell Rifle Range also functions as a firebreak. It is larger than any slashed area in either Park, although it is not shown as a break in the Otway Fire Protection Plan.

Ecologically appropriate fire regimes are needed to maintain flora and fauna species and communities. Regimes which maintain areas at a range of successional stages to provide habitat for both early (e.g. many orchids) and late (e.g. Rufous Bristle bird and Swamp Antechinus) post-fire successional specialists are required. Some areas of the Parks that have been regularly burnt and grazed in the past (e.g. many open grassy and grassland/shrubland

areas) may require a long period without fire to allow their vegetation structure and floristics to return to a more natural state.

To the best of current knowledge the fire regime proposed in this Plan will not have a long-term negative impact on any species of flora or fauna, and can be expected to impact positively on a range of ‘post-fire increasers’ which are now uncommon in the Parks. This fire regime is suitable for all heathland and woodland areas of the Parks except for some areas west of Childers Cove in Bay of Islands Coastal Park. These areas have little plant cover where vegetation is regenerating on areas of extensive wind erosion. The impact of fire at such sites is not known.

Burning is not recommended for dune areas, open grasslands or cliff top grassland/shrublands at present; sufficient infrequent burning of these areas for ecological purposes is likely to occur from wildfires. If such fires do not occur, this may need to be reviewed in the future. Burning is not appropriate in riparian open forest.

Autumn burns will usually lead to more rapid regeneration (because they avoid the summer dry period) and are safer in terms of risk of re-lights. Late summer-early autumn burns are most appropriate for the management of Metallic Sun-orchid (Cropper 1993).

Aims

- Protect human life, property and park values from injury by fire.
- Maintain fire regimes appropriate to the conservation of native flora and fauna.
- Minimise the adverse effects of all fires and fire suppression methods on park values.

Management strategies

- *Develop integrated fire management programs for the Parks that will protect human life and property from injury by fire while enhancing ecological values in accordance with established guidelines based on sound research.*
- *In heathland and woodland areas, fire frequency should not be less than 8 years*

(and then only when required for special management reasons); in most areas, the fire frequency should be 15–20 years.

- *In optimum Rufous Bristlebird habitat and wet gullies, the fire frequency should be either 25 years or no planned burning.*
- *In areas west of Childers Cove in the Bay of Islands Coastal Park, that have low vegetation cover, limit burning to experimental burns in small areas of dense vegetation. Monitor post-fire soil stability and vegetation recovery.*
- *Investigate appropriate burning requirements for non-riparian open forest areas within the Sherbrook River Valley. Aim to establish a mosaic of age classes and control pine wildings (Grant 1987).*
- *Do not burn dune areas or grassland areas at present, but review burning requirements every 10 years.*
- *Where possible, conduct burning in late summer-autumn in preference to spring.*
- *Minimise the adverse effects of wildfires and fire suppression methods on park values through appropriate pre-suppression planning and training.*
- *Continue to provide information on fire regulations and enforce the regulations to minimise illegal burning.*
- *Monitor burn areas and breaks for adequacy of regeneration, post-fire weed invasion, and visitor access and trampling, and take remedial management actions as necessary.*
- *Monitor burn areas and document the effects of burns to assist future fire planning. For planned burns, undertake pre-fire monitoring to facilitate a more detailed assessment of fire effects.*
- *Develop and implement programs to promote the habitat of threatened flora or fauna species or communities using fire, or*

slashing if appropriate, when a requirement has been identified and it does not threaten other significant flora or fauna (sections 4.2 and 4.3).

- *Encourage research into the use of fire for ecological purposes, and the effects of fuel reduction burning on vegetation communities and associated fauna, in the Parks.*
- *Monitor the findings of fire research and review park fire management strategies where appropriate.*
- *Promote public awareness of fire management within the Parks by providing interpretative material and liaising with adjacent landholders.*
- *Remove wood fires at Murnanes Bay to minimise fire risk (section 6.3.3).*
- *Use, where possible, the following least-disturbance strategies for wildfire suppression in the Parks:*
 - *fireline construction using hand crews;*
 - *air attack to drop fire retardant, water or foam;*
 - *back burning from existing roads and tracks;*
 - *using existing roads and tracks or topographic features as control lines.*
- *Avoid, as far as possible, using bulldozers, particularly in the Special Protection Area, in heathlands, on dunes, and on the banks of rivers or estuaries.*
- *Where appropriate, seek to incorporate the above strategies in the regional Fire Protection Plans.*

5.2 Pest plants and animals, and diseases

A total of 174 introduced plant species are recorded from both Parks. Of these 166 occur in Port Campbell National Park and 74 in Bay of Islands Coastal Park (Grant 1987; NRE database 1997b; Westbrooke et al. 1996; C. Meredith pers. comm.). A total of 45 species occurs in both Parks. Twelve species are regionally controlled weeds in the Corangamite or Glenelg Catchment Management Regions (appendix 4). The differences between the two Parks in part reflect the lack of botanical survey of most of Bay of Islands Coastal Park (only the easternmost 5 km has been surveyed intensively) but several other factors are apparent. Many of the weeds only recorded for Bay of Islands Coastal Park are garden escapes, reflecting the proximity of the eastern end of the Park to Peterborough and the legacy of former shacks and associated gardens. Many of the agricultural weeds, especially grasses and herbs identified for Port Campbell National Park, are not recorded for Bay of Islands Coastal Park but are likely to be present.

Few of the major environmental weeds are so widespread as to be virtually impossible to control, but the large areas of Buffalo Grass at the eastern end of Port Campbell National Park may have reached this stage. Over time, others (e.g. Coast Wattle, Coast Tea-tree, Boneseed, Common Dolichus, Kikuyu Grass and African Box-thorn) may also become uncontrollable if appropriate management is not implemented. In some areas, populations adjacent to the Parks provide a constant source of weed propagules (e.g. gardens, pasture areas, pampas grass and wind breaks). Other weed species are localised infestations that could be effectively removed (e.g. Coast Wattle, pines, Cordyline).

Problem pest plants are those with the potential to spread rapidly (often after fire) and to become too difficult to control. These include Boneseed, Gazania, Coast Tea-tree, Ragwort, Coast Wattle, Golden Wreath Wattle, Common Dolichus and Bulbil Watsonia (appendix IV).

Key factors in weed invasion in the Parks appear to be:

- soil disturbance (e.g. tracks, clearing, erosion);
- time since grazing ceased (fewer weeds are present the longer it is since grazing);
- presence of large source populations on adjacent land (e.g. many agricultural weeds);
- too-frequent fire.

Although it appears that many weed seeds are brought into the Parks on vehicles, and Kikuyu, Pampas and Couch Grasses are present on road verges, there is generally very little spread from road and track edges unless some of the above factors are also present.

A pine plantation is located in Port Campbell National Park approximately 2 km inland in the vicinity of Sherbrook River. Thought to have been planted in the 1920s, it is all that remains of a larger plantation of pines that was previously logged.

The trees are starting to senesce and will continue to decline in health, appearance and commercial value. The trees will become a safety concern with branches increasingly dying back, and the occasional tree will blow over. Pines seeding into surrounding heathland are increasing the pest plant management problem.

A range of pest animals occurs in the Parks. Cats and foxes are widespread, and dogs occur in lower numbers. In general, foxes and cats are more significant predators of native fauna than dogs, but dogs in packs can be a problem near Port Campbell and Peterborough and are likely to be roaming pets. Roaming pet cats may be a problem near townships but there are no data to confirm this. Parks Victoria is currently undertaking a cat control program in Port Campbell National Park, and fox control is undertaken on a regular basis in the Park. Feral predator control activities in Bay of Islands Coastal Park are now a major focus of the Friends group.

The density of the heathland vegetation may act to reduce the impacts of introduced predators, which mainly hunt along tracks and in open

areas. In some areas, the mosaic of existing and disused tracks, including vehicle and walking tracks and informal foot-pads, provides an extensive network of pathways for predators. Predators can have significant impacts in recently burnt areas because of the ease of access.

Rabbits are widespread and common, and affect both the Parks and adjacent properties. Current planning to control rabbits will need to take into account the potential effects of rabbit calicivirus. Rabbits and Foxes are targeted species for control programs in both the Corangamite and Glenelg Catchment Management Regions (Corangamite Catchment and Land Protection Board 1997; Glenelg Catchment and Land Protection Board 1997). Cattle and sheep stray into the Parks occasionally, usually through poorly maintained fences.

Six species of introduced birds regularly occur within the Parks (Common Blackbird, Skylark, House Sparrow, European Goldfinch, European Greenfinch, Common Starling). The large numbers of starlings that occur in summer (apparently feeding on the fruits of Coast Beard-heath) can significantly reduce the feeling of 'naturalness' for some visitors, and may compete for nest hollows and cliff habitat with native fauna. There are currently no feasible control methods for these birds.

Cinnamon Fungus is not known in either Park, but is a potential threat.

Dieback caused by *Armillaria* infection is suspected of being present in Port Campbell National Park, but little is known about its occurrence.

Aims

- Control, and where possible eradicate, pest plants and animals in the Parks.
- Protect the Parks from other threats and diseases, in particular Cinnamon Fungus and new infestations of non-indigenous species.
- Minimise the impact of control programs on native flora and fauna.

- Control, and where possible eradicate, non-indigenous plants and animals.
- Restore native vegetation to areas previously infested by introduced plants.

Management strategies

- *Develop and implement a pest plant management strategy, incorporating the following principles:*
 - *prioritise weed species for different areas of the Parks (Westbrooke et al. 1996 have done this for the easternmost 5 km of Bay of Islands Coastal Park);*
 - *control weeds with a high potential to spread and become uncontrollable;*
 - *identify and control isolated infestations before they spread;*
 - *identify weed-free areas;*
 - *minimise the spread of weeds into weed-free areas and reduce the risk of infestation;*
 - *implement a weed mapping and monitoring program based on a Geographic Information System approach;*
 - *develop control strategies in accordance with Parks Victoria guidelines;*
 - *continue to control regionally controlled weeds (appendix 4).*
- *Monitor infestations and the effectiveness of all pest control programs.*
- *Prior to a pest plant management strategy being developed:*
 - *remove Coast Tea-tree as a priority;*
 - *continue to manage pest plants by minimising the spread of weeds into known weed-free area;*
 - *conduct control works outwards from weed-free areas, identifying and controlling isolated infestations before they spread;*
 - *control invasive species (appendix 4), including Coast Wattle, Kikuyu Grass and Buffalo Grass west of Gibsons Steps.*
- *Liaise with the managers of Port Campbell Rifle Range to control Kikuyu Grass, and*

control several infestations within Bay of Islands Coastal Park and prevent further spread.

- *In co-operation with the Glenelg and Corangamite Catchment Management Authorities and adjacent landholders, co-ordinate pest plant and animal control efforts, through the Good Neighbour Program, to complement those on adjacent land. Undertake co-operative programs with neighbours to control rabbits, foxes, ragwort, boxthorn, blackberries and other invasive and regionally controlled weeds.*
- *Encourage research on control methods for Buffalo Grass. Permit experimental control trials to be undertaken in areas east of Gibsons Steps.*
- *Liaise with Park neighbours and the Shires to seek to reduce the planting of invasive species in adjacent areas.*
- *Remove the Sherbrook pine plantation and rehabilitate the area with indigenous vegetation. Control pine wildings.*
- *Maintain cat and fox control programs and concentrate control in areas where predators have good access, including recently burnt areas and along roads and tracks. Continue to encourage community participation in control measures.*
- *Monitor and control feral and wandering dogs in the Parks.*
- *Liaise with neighbours, local communities and Shires to reduce, through education and awareness, the impacts of escaped garden plants and roaming pet cats and dogs.*
- *Control wandering cattle and sheep by liaising with Park neighbours to ensure that fencing is maintained.*
- *Co-ordinate pest plant and animal control efforts through the Good Neighbour Program and with landcare groups to complement those on adjacent land.*

- *Minimise or avoid the introduction and spread of introduced plants and diseases by:*
 - *ensuring appropriate standards of hygiene for vehicles and machinery working within the Parks;*
 - *minimising soil disturbance during wildfire suppression, road maintenance and facility development works.*
- *Continue to control rabbits in the Park in accordance with Parks Victoria guidelines and policy on managing the impacts of the rabbit calicivirus.*
- *Monitor occurrences of fungal infection in the Parks, and take appropriate remedial action where necessary.*

5.3 Soil conservation

A variety of soil types occurs in the Parks, varying mainly with parent material. Some soils are on parent materials that are inherently unstable, such as the coastal dunes or weathered dune calcarenites. These soils are predominantly calcareous, highly alkaline and permeable, and drain readily, thus providing difficult conditions for many plants. Although soils are deeper on the older, more weathered dunes, they are still vulnerable to wind erosion when vegetation cover is disturbed. This leads to rapid loss of the A horizon and removal of surface sands. Adjacent sites may then be buried by sand deposition. The sandy soils are vulnerable to physical disturbance by natural processes and human impact that breaks down the soil structure. In areas of dune calcarenite,

the surface is underlain by an impermeable horizon, often at shallow depth. Stripping of the surface by either wind or water erosion exposes this hard horizon.

Soils developed on the Tertiary limestones have gradational profiles of clay and clay loam with variable amounts of sand. Along many of the cliff tops are thicker clay-rich soils. Clay and loam soils are prone to compaction and dispersion. A combination of human activities and occasional salt spray wetting has damaged or destroyed the vegetation of many cliff top zones, exposing the soil to wind and sheet runoff erosion. These areas are vulnerable to further stormwater erosion from paved surfaces or other stripped areas.

Aims

- Minimise direct disturbance to soils.
- Minimise damage to vegetation and maintain vegetation cover.

Management strategies

- *Identify and map the types of soils, soil deterioration and localities in the Parks.*
- *Develop a classification of soil sensitivity to disturbance in accordance with the strategies above.*
- *Plan visitor movements and other facilities to minimise direct and secondary impacts on soils.*
- *Undertake soil rehabilitation works in accordance with planned rehabilitation programs (section 4.2).*

6 THE PARK VISIT

Port Campbell National Park is one of Victoria's most important tourist destinations attracting large numbers of Victorian, interstate and overseas visitors. The eastern section of Bay of Islands Coastal Park also attracts significant numbers of visitors. The western section of Bay of Islands Coastal Park, more remote from passing traffic, attracts mostly local and regional visitors.

The Twelve Apostles and the Loch Ard Gorge are the 'jewels in the crown' of the region and are outstanding attractions. The Great Ocean Road region is the most visited tourist region in Victoria after Melbourne. The Great Ocean Road Tourism Development Plan (CVTC 1996) identified Port Campbell National Park as one of the key tourist attractions for the region.

6.1 The Park visitor

The Parks attract large and steadily increasing numbers of visitors. Parks Victoria has prepared estimates of current and future use of the Parks and identified some of the implications for park management.

Annual rate of growth in the numbers of visits to sites within the two Parks is an estimated 5.7%, although growth rates are higher at key sites. Current and forecast estimates for the numbers of individual visits to sites within the Port Campbell National Park and Bay of Islands Coastal Park, based on Parks Victoria traffic count and survey data, are as follows:

	Port Campbell National Park	Bay of Islands Coastal Park
1996-97	1 600 000	500 000
2001-2	2 100 000	650 000
2006-7	2 800 000	900 000

Visitors usually visit two or three sites in each Park. The total number of visitors to the Parks is not available.

About 65% of visitors enter Port Campbell National Park along the Great Ocean Road

from the east (including those entering from the Old Princetown Road) and 35% enter from the west (including those joining the Great Ocean Road from the Cobden–Port Campbell Road). In contrast about 80% of visitors enter Bay of Islands Coastal Park along the Great Ocean Road from the west, and 20% enter from the east.

Port Campbell National Park east of Port Campbell Township, and Bay of Islands Coastal Park and Port Campbell National Park west of Port Campbell Township, currently function as separate destinations for high proportions of visitors.

Most visitors travelling from the east to the Twelve Apostles and Loch Ard Gorge sites return by the same route after leaving the sites; only about 20% of these visitors currently continue to Port Campbell Township. A slightly greater proportion of visitors travelling from the west to sites in the western section of the Port Campbell National Park continue to Port Campbell Township. A substantial proportion of visitors reaching Port Campbell continue beyond the township.

Port Campbell National Park receives a relatively high proportion of international and interstate visitors. An Easter 1994 visitor survey indicated that 35% of visitors were from interstate and 10% from overseas. Most of the interstate visitors were from NSW and South Australia, and the majority of overseas visitors were from Europe, North America and Asia.

Park visits are concentrated at a few sites in the Parks, particularly Twelve Apostles, Loch Ard Gorge, the Port Campbell foreshore and London Bridge in Port Campbell National Park, and Bay of Martyrs, the Bay of Islands and the Childers Cove area in Bay of Islands Coastal Park. During summer and autumn, visitor numbers at Twelve Apostles and Loch Ard Gorge often exceed the capacity of the car parking facilities, walking tracks and lookouts, reducing the quality of the visitor experience and creating traffic and park management problems.

Currently orientation information and interpretative facilities in or about the Parks is limited. Less than 5% of Park visitors enter the existing Port Campbell National Park Information Centre.

The economies of Port Campbell, Peterborough and Princetown and surrounding districts are heavily dependent on tourism, and particularly on visitors to the Parks.

Recognising these factors, it is important to set a clear context for the development of visitor facilities which will guide implementation and detailed planning over the next decade and beyond.

Providing for the visitor

Parks Victoria uses an integrated approach to park management to ensure the balance is maintained between protecting the natural and cultural assets of the Parks and enhancing the visitor experience. The planning of visitor facilities takes account of factors such as travel patterns and visitor needs relating to information required before and during a visit, parking, toilets and transport.

Planning also considers likely future changes to visitation, and to the Parks' environment (e.g. re-alignments to the Great Ocean Road) to avoid or limit the need for the future relocation of facilities.

Based on current data, and recognising the significant projected growth in visitor numbers, it is likely that over time the two Parks will increasingly be perceived and visited as a single destination experience, putting pressure on additional areas of the Parks and requiring a sophisticated overall visitor management strategy.

Site capacity analyses and visitor growth forecasts need to be undertaken for all key sites in the Parks. Such analyses and forecasts, in combination with models that predict potential impacts on natural values and visitor satisfaction as a result of increases in visitation at particular sites, will assist detailed planning and the development of management techniques appropriate to the needs of each site (section 4.6). Site capacity analyses will also facilitate the identification of sites most capable of

accommodating visitor growth. Due to current pressures at the Twelve Apostles, this site should be used to pilot methodologies for capacity analyses and visitor growth forecasting for other sites within the Parks (section 6.3.5).

Future visitor management will address the following considerations.

- Information provided through promotional campaigns to encourage visitors to the Great Ocean Road will need to be carefully tailored to support in-park visitor management strategies. In particular any future marketing strategies should emphasise that the parks experience cannot be fully appreciated in one day and encourage visitors to stay at Port Campbell (section 6.2).
- Major orientation and information facilities for the medium-term future should be established at key 'entry points' to the Parks – Boat Bay in the west, the Twelve Apostles in the east, and in the proposed new tourist facility at Port Campbell. Given the linear nature of the Parks, however, and the multiple points of entry, quality orientation and directional signage should also be established at Peterborough and at all other key destinations within the Parks, particularly Loch Ard Gorge (section 6.3.1).
- Additional interpretation information should be located at the key viewing sites, particularly at the Twelve Apostles and Loch Ard Gorge.
- The development of a major tourist visitor facility primarily using private sector investment at or near Port Campbell Township should be actively encouraged to provide a base for visitors to the region. In addition to complementary orientation and interpretation facilities this centre should provide a range of other tourist services. The centre would not be an adjunct to a specific natural 'icon' attraction but a support facility to the Park as a whole and a major regional attraction in its own right (section 6.3.4).

- The current visitor facilities in the Parks should be improved. Visitor car park facilities are inadequate and, in some cases, environmentally inappropriate. There is a clear need to provide toilet facilities and shelters.

Site plans will be prepared for key visitor areas including the Twelve Apostles, Loch Ard Gorge and the proposed major Tourist Centre. A fully integrated approach will take account of:

- visitor needs at the particular area;
- research into likely future visitation including traffic circulation patterns, visitor numbers and visitor segments;
- overall needs of visitors for basic facilities including site orientation, interpretation, toilets and transport;
- thresholds of acceptable changes to natural values and visitor experiences (section 4.6);
- other potential long-term changes to the environment of areas (e.g. re-alignments of the Great Ocean Road);
- current and proposed marketing strategies.

Detailed strategies will be developed for all other major attractions, centred on moving car parking away from sensitive coastal areas as well as improving visitor amenity.

Further research will be undertaken in the medium term to establish the means for containing visitor pressures on viewing areas. This will include the building of a sophisticated visitor management model to better predict visitor growth and impact trends (PV has received Federal funding for this work). The section of Bay of Islands Coastal Park west of Boat Bay, which currently has only limited visitor facilities, will remain largely undeveloped to provide for semi-remote experiences.

In the longer term it will be essential in the interests of the Parks and visitor satisfaction to adopt strategies that contain pressures on the sites of major attractions by means such as distributing visitation among a number of key sites and outside peak times, relocating car parking, and considering alternative transportation, as well as strategic marketing.

Aims

- Provide facilities and services that cater for visitors in accordance with the above overview of future management for visitors.
- Provide a hierarchy of orientation, interpretation and tourist facilities across the Parks.
- Monitor and investigate growing pressures on the Parks and develop strategies to contain these pressures so that natural values are protected and visitor experiences are enhanced.
- Co-operate with other Government agencies and stakeholders in the Parks to conserve the local environment and facilitate development of the local economy.

Management strategies

- *Provide and maintain facilities and services that cater for visitor needs within the capacity of sites and in keeping with the area's distinctive character (section 6.3).*
- *Establish programs to:*
 - *monitor visitor numbers, visitor satisfaction and traffic circulation as a basis for future research and planning of visitor facilities;*
 - *periodically monitor low-use sites to ensure adequate provision of facilities and environmental protection.*
- *Undertake further research into visitor growth for all major visitor attractions in the Parks.*
- *Develop models to predict the likely impacts on visitor satisfaction and the natural environment of alternative visitor management strategies. Give priority to assessing the impacts of potential changes on:*
 - *access arrangements at particular sites;*
 - *site and park marketing;*
 - *the provision of visitor services.*
- *Monitor changes in environmental conditions caused by visitor impacts. Where necessary, take appropriate*

remedial action to control or remedy impacts.

- *Develop Area Site Plans for each key visitor area, including a site capacity analysis, visitor growth forecast and identification of site-specific issues relating to visitor use, such as visitation patterns, circulation and environmental impacts.*
- *Identify management strategies, including relocation and additions to existing facilities where appropriate, to cater for medium-term visitor growth at major sites within the Parks. Ensure that management systems are easily transferable.*
- *Progressively implement priority orientation and interpretation services and tourist facilities in co-operation with the private sector where appropriate (sections 6.3.1, 6.3.2 and 6.3.4).*
- *Permit recreational activities in accordance with table 2.*
- *Encourage visitors to adopt minimal impact techniques and to adhere to codes of conduct appropriate to their activity.*

6.2 Marketing

Marketing has considerable potential to raise interest in the attractions of the Parks, and to increase visitation by Victorian, interstate and overseas visitors to a broader range of attractions within the Parks.

Currently, pre-visit information for Port Campbell National Park and Bay of Islands Coastal Park is in the South-West National Parks map guide brochure, available at major towns along the access routes to the Parks, such as Warrnambool, Apollo Bay, Colac and Geelong. The brochure helps visitors plan their travel route and priority attractions to visit. A Parks Victoria promotional brochure for Port Campbell National Park has also been produced recently.

Future marketing of the National Park will be as a part of a package including the nearby Bay of Islands Coastal Park, and, when established, the Tourist Centre at Port Campbell. The

package will include opportunities to attract a diverse range of visitors to the area.

It is proposed that the marketing strategy for the Parks and related attractions gives emphasis to:

- promoting the Parks as a unique visitor experience;
- developing brand imaging for four or five key attractions including any new tourist attraction at Port Campbell;
- increasing the profile of the Parks' natural and cultural attractions;
- balancing the attraction of the Twelve Apostles and Loch Ard Gorge with other key destinations in the area;
- highlighting related attractions such as the Glenample Homestead, the major visitor attractions in Bay of Islands Coastal Park and the major Tourist Centre at Port Campbell, when established;
- encouraging more visitors to stay longer with an overnight stay in the area;
- supporting in-parks visitor management strategies to control visitor pressures on key visitor sites (section 6.1).

To optimise the experience of Park visitors and enhance the regional and State economies, it will be essential to ensure that the emphases in the Parks Victoria marketing program for the Parks are integrated with the marketing programs of Regional, State and National Tourism agencies.

Aims

- Ensure that Port Campbell National Park, Bay of Islands Coastal Park, Glenample Homestead and the Tourist Centre (when established at Port Campbell) are marketed as one of Victoria's key tourist destinations.

TABLE 2 SUMMARY OF RECREATION ACTIVITIES

ACTIVITY	MANAGEMENT ZONES				OVERLAYS		
	CZ	CRZ	RDZ	EZ	SPA	SMA-P	SMA-UM
Bicycle riding	YC	YC	YC	YC	No	YC	No
Boating	Yes	Yes	Yes	N/A	No	N/A	N/A
Slipping of boats down dunes and cliffs	No	No	No	N/A	No	No	No
Camping (designated areas) and caravanning	No	No	Yes	No	No	No	No
Camping - dispersed	No	No	No	No	No	No	No
Dogs*	No	YC	YC	No	No	No	No
Fires	No	No	No	No	No	No	No
Gas BBQ	No	Yes	YC	No	No	No	No
Fishing	Yes	Yes	Yes	N/A	YC	N/A	N/A
Firewood collecting	No	No	No	No	No	No	No
Hang gliding/paragliding	YC	No	No	No	No	No	No
Horse riding	YC	No	No	YC	No	YC	No
Hunting	No	No	No	No	No	No	No
Intertidal collecting	YC	Yes	Yes	N/A	No	N/A	N/A
Jet-skiing	No	No	No	N/A	No	N/A	N/A
Orienteering/rogaining	No	No	No	No	No	No	No
Picnicking	Yes	Yes	Yes	Yes	YC	Yes	Yes
Rock climbing/abseiling	No	No	No	No	No	No	No
Spearg fishing	Yes	Yes	Yes	N/A	Yes	N/A	N/A
Swimming, surfing, diving and snorkelling	Yes	Yes	Yes	N/A	YC	N/A	N/A
Walking – on formal tracks	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walking – off formal tracks	No	No	No	No	No	No	No

Zones and overlays:

CZ	Conservation	SPA	Special Protection Area
CRZ	Conservation and Recreation	SMA-P	Special Management Area – Pines
RDZ	Recreation Development	SMA-UM	Special Management Area – Utility Management
EZ	Education		

Yes	Appropriate	No	Not appropriate
N/A	Not applicable	YC	Yes (conditional) – refer to relevant section for details
*	Only in Bay of Islands Coastal Park on leashes		

- Provide appropriate motivational and tour planning information to visitors before they undertake their Park visit.

Management strategies

- *Implement a marketing strategy for the Parks in accordance with the above.*
- *Promote, in partnership with Tourism Victoria, Port Campbell National Park as a*

tourism icon and an essential destination for visitors to Victoria.

- *Ensure that Port Campbell National Park, Bay of Islands Coastal Park, Glenample Homestead and the Tourism Centre when established at Port Campbell, are promoted as a single package.*
- *Increase promotion of related attractions such as certain visitor sites in the eastern*

section of Bay of Islands Coastal Park to distribute visitation across all destinations, rather than concentrate solely on key sites such as the Twelve Apostles and Loch Ard Gorge.

- *Strongly promote the need for visitors to stay overnight in the area to fully appreciate the Parks and related attractions.*
- *Develop and distribute pre-visit information and information designed specifically for key target groups. Include information on appropriate vehicular and pedestrian access, favoured sites, codes of behaviour, fire regulations and safety issues.*
- *Continue visitor monitoring and customer satisfaction monitoring to provide a basis for the development of future marketing of the Parks and related attractions.*
- *Integrate the marketing of Glenample Homestead with that of the Parks (sections 4.5 and 6.3.2).*

6.3 Visitor recreation

6.3.1 Orientation

The provision of orientation services is important to facilitate enjoyment of the Parks, particularly for independent car-based travellers. Orientation involves outlining where visitors are located within the Parks, what sites are available to visit, and the features of these sites.

Orientation boards are installed only at the eastern and western entry points to Port Campbell National Park. In Bay of Islands Coastal Park, orientation signage is only available at the car park at the Bay of Islands site.

Tourist radio on the FM band at the eastern and western ends of the Port Campbell National Park advises visitors of park activities, facilities and sites to visit.

Some orientation for both Parks is also in the existing Port Campbell National Park Visitor

Information Centre, located between the camping park and the Great Ocean Road in Port Campbell.

There are four major access routes into the Parks: east and west along the Great Ocean Road, and via the Cobden-Port Campbell Road and Old Princetown Road.

It is important that visitors experience a sense of arrival and that orientation information is provided to visitors entering the Parks along each route before the Park visit is undertaken. This will maximise visitor use and enjoyment of the Parks, and help inform visitors of an appropriate code of behaviour before their Park visit to minimise environmental impacts.

Proposed key locations for visitor orientation are as follows:

- in the Township of Princetown at the eastern entry to Port Campbell National Park: an orientation display. Parks Victoria will encourage a private operator to establish the facility and will supply brochures and other information;
- at Boat Bay at the western entry to the Bay of Islands Coastal Park: as stage 1, a substantial park entry sign on the western approach and a major orientation and information shelter for visitors at the Bay of Islands car park;
- at the proposed relocated Twelve Apostles car park (section 6.3.5) for tourists travelling along the Great Ocean Road and from the old Princetown Road: significant signage and a major sheltered orientation display and information service will be established;
- in the proposed major Tourist Centre at Port Campbell (section 6.3.4) – for traffic entering Port Campbell on the Cobden- Port Campbell Road: significant orientation and display. This facility will also service visitors in transit from one Park to the other;
- in Glenample Homestead (section 4.5) – for traffic entering the Homestead site before the National Park: significant signage and indoor display;

- at other attractions and at Peterborough: standard quality orientation map of the Parks.

Aims

- To orient the independent car-based traveller to the Parks in relation to park features.
- To inform visitors of appropriate codes of behaviour before and during their Park visit.

Management strategies

- *Implement an Orientation Strategy for the Parks in a consistent, co-ordinated format at:*
 - *major road entry points to the Parks (as outlined above), subject to negotiations with VicRoads and private landholders as appropriate;*
 - *key visitor attractions;*
 - *other attractions (table 3).*
- *Develop, distribute and promote quality information materials related to the Parks.*
- *Expand the Tourist Radio to encompass Bay of Islands Coastal Park.*
- *Actively promote visitor use of the Parks Victoria Information Service (13 1963) as a key source of detailed information.*

6.3.2 Interpretation and education

The Parks' diverse natural environment and cultural history provide excellent opportunities for interpretation to enhance visitors' appreciation of the Parks.

In addition, visitors must be informed about:

- recreation activity codes of conduct to minimise environmental impacts;
- suitable access locations to minimise environmental impacts;
- park management strategies, especially when the strategies have high visual impact;
- fire regulations and safety issues;
- the role of Parks Victoria as the Parks' custodian.

Currently, for Port Campbell National Park, interpretation about the key visitor sites, such as

Loch Ard Gorge and the Twelve Apostles, is available in tourist brochures, but little is included about other sites.

Within Port Campbell National Park, basic interpretation is located on the orientation and information boards at the eastern and western entries to the Park and key visitor sites. Some on-site interpretation facilities are also provided at key visitor sites in Bay of Islands Coastal Park.

For Bay of Islands Coastal Park, tourist brochures contain very little interpretative material on the Park. This will be addressed in the future.

Interpretation on both Parks is also available at the existing Port Campbell National Park Visitor Information Centre in Port Campbell. Visitation to this centre is low due to its low visibility. Most visitors undertake the majority of their Park visit before visiting the Centre, as they leave the coast or turn back at the township. The interpretative displays are no longer adequate to effectively enhance the visitor experience.

The restored Glenample Homestead was opened to the public in 1989 as an historic building and as a museum, housing a series of interpretative displays. The building in itself is marvellous, and contains a range of interpretative material, with a particular focus on historic themes (section 4.5).

Glenample Homestead does not have a significant presence, attracting only about 1% of total Great Ocean Road traffic. Its future visitor and tourism role requires careful review in the light of the overall needs of visitors to the Park.

Interpretative walks in the Parks (table 7) include the Discovery Walk between Port Campbell and Two Mile Bay, the section of the Cliff Top Walk between Halladale Point walk and Bay of Martyrs, and at Loch Ard Gorge, where three separate walks focus on

TABLE 3 PROPOSED VISITOR ORIENTATION FACILITIES

CATEGORY	SITE	
	PORT CAMPBELL NATIONAL PARK	BAY OF ISLANDS COASTAL PARK
Major indoor display	Proposed major Tourist Centre at Port Campbell	
Indoor display	Prinetown Glenample Homestead	
Major sheltered display	Twelve Apostles car park	Boat Bay
Information shelter	Eastern entrance Western entrance	
Signage map*	Glenample Homestead Gibsons Steps Twelve Apostles Loch Ard Gorge Beacon Steps Discovery Walk car park Two Mile Bay The Arch London Bridge The Grotto Crown of Thorns Curdies Inlet	Crofts Bay Bay of Martyrs the Bay of Islands Radfords Road Mathiesons Road Childers Cove area (Sandy Bay)

* Provide also at the foreshore in Peterborough Township.

individual themes (geology, the Shipwreck, and flora and fauna).

An historic shipwreck trail has been developed along the coastline between Port Fairy and Moonlight Head. Brochures and signage direct visitors to a number of coastal locations in the Parks near the sites of shipwrecks, including the *Falls of Halladale* (1908) and the *Loch Ard* (1878). There are interpretative plaques at these coastal locations to commemorate the wrecks. Guided interpretative tours by private operators were trialled in Port Campbell National Park during the 1996–97 summer holidays. Interpretative talks and presentations to organised groups are also occasionally conducted by rangers. Coast Action programs are conducted at Peterborough, but to date have not been held within the Parks.

Park education for school and other interested groups is considered in section 7.3.

Aims

- Enhance visitor understanding and appreciation of the Parks through provision of interpretative information.
- Provide varying levels of park educational information to meet a variety of visitor demands.
- Cater to the expectations of both domestic and international independent travellers and coach visitors.

Management strategies

- *Develop a comprehensive and co-ordinated Interpretation and Education Plan for the Parks that:*
 - *promotes visitor understanding and appreciation of park values;*
 - *enhances the visitor experience;*
 - *provides differing levels and styles of interpretation at primary, secondary and other visitor sites (table 4);*
 - *includes a primary interpretative facility at the proposed major Tourist Centre at Port Campbell;*
 - *ensures that interpretative material is diverse, site-specific, imaginative and relevant to the overall park context;*
 - *includes monitoring and maintenance schedules for all interpretative and information facilities;*
 - *provides for the development of specific information for key user and interest groups;*
 - *increases understanding of high visibility management strategies (e.g. fire protection and ecological burning programs);*
 - *informs about, and encourages visitors to follow, codes of conduct and Park Regulations;*
 - *provides information on hazards and safety warnings;*
 - *uses the proposed major Tourist Centre at Port Campbell to assist with park visitor research.*
- *Review the future role of Glenample Homestead in the light of overall visitor needs and movements in the Parks.*
- *Develop informative Park Notes dealing with the Loch Ard wreck and Glenample Homestead stories (liaise with the Maritime Heritage Unit of Heritage Victoria regarding the loan and display of Loch Ard wreck artefacts).*
- *Integrate the interpretation of Glenample Homestead with that of the Parks (sections 4.5 and 6.2).*

- *Explain the importance to visitors of high visibility management strategies, such as fire protection and pest control.*
- *Liaise with and educate commercial tour operators to ensure provision of accurate, consistent and quality interpretative information (section 6.4).*

6.3.3 Day visits

Of the total visits to the Parks, the vast majority are day visits. Additional research is required to identify length of stay in the Parks and at key sites (sections 6.1 and 6.2).

According to ranger observation, the average length of stay at park sites such as at the Twelve Apostles is approximately 15 minutes. It is estimated that, at Loch Ard Gorge, the length of stay is approximately 45 minutes, because of the larger area to explore.

Longer experiences are generally confined to local users frequenting beaches, surf breaks and fishing locations at Bowkers and Clifton Beach in Port Campbell National Park, and Childers Cove and other local destinations within Bay of Islands Coastal Park.

The Twelve Apostles, Loch Ard Gorge and London Bridge are the key visitor destinations within Port Campbell National Park, although none of these offers picnic facilities (table 5). Port Campbell Township is currently the focus of visitors within Port Campbell National Park seeking park information, picnicking and toilet facilities, as well as food, drink and souvenir outlets. A former VicRoads picnic area near the Sherbrook River which was inappropriately located has been closed (section 8.2.1).

The Great Ocean Road Bay of Islands Development Plan (NPS 1994) proposed the development of a major tourist precinct in the eastern 5 km section of the Bay of Islands Coastal Park adjacent to Peterborough. Developments proposed include:

- construction of a Clifftop Walk, commencing in Peterborough and extending westward to Boat Bay;

TABLE 4 PROPOSED VISITOR INTERPRETATIVE FACILITIES

CATEGORY	SITE	FORM AND THEMES
Primary	<ul style="list-style-type: none"> New major Tourist Centre at Port Campbell 	<p>Interpretation to be tailored to specific visitor experiences that highlight the diversity of the environment, history and people of the region. The proposed major Tourist Centre to include a comprehensive overview of the Aboriginal people of the region, and a history of post-European activity.</p>
Secondary	<ul style="list-style-type: none"> Twelve Apostles Loch Ard Gorge (main lookouts) London Bridge The Arch Bay of Martyrs Bay of Islands Glenample Homestead 	<p>Interpretation to be related to the human experience of nature, including:</p> <ul style="list-style-type: none"> the immense power of the sea how long the formations have taken to form how much is eroded each day/year what the area was like in the past and what it may be like in the future human interest stories such as the personal experience of being shipwrecked flora or fauna that visitors may see (e.g. shearwaters, bristlebirds). the custodial role of Parks Victoria.
Tertiary	<p>Sites that are off the main tourist itinerary, and will attract proportionally fewer visitors. They include:</p> <ul style="list-style-type: none"> Gibson Steps Loch Ard Gorge (beach and walks) Sherbrook Estuary Broken Head Port Campbell Discovery Walk The Grotto Massacre Bay 	<p>Interpretation to be site specific. Interpretation of all sites should include opportunities to educate visitors on:</p> <ul style="list-style-type: none"> basic ecology human history fire management vegetation wildlife.

Note: At other sites interpretative material, if provided, will be extremely low-key, touching on-site specific features that cannot be interpreted elsewhere, such as local shipwrecks, bird colonies and specific visitor management issues. Necessary safety and other important information will also be provided (section 6.5).

- development of a series of seven high quality car parks along the Great Ocean Road, providing access to viewing platforms, sections of the Clifftop Walk, and beach access;
 - tourist coach parking, toilets and improved beach access at Crofts Bay;
 - improvements to the degraded boat launching facilities at Boat Bay;
 - development of a western entrance at Boat Bay.
- A three-year program to implement the Bay of Islands Development Plan commenced in 1996. Proposals yet to be implemented were reviewed

and, as appropriate, are incorporated in this Plan (section 6.3, and tables 3, 4, 5, 7, and 8).

Within Bay of Islands Coastal Park, the Bay of Islands and Bay of Martyrs are attractions. Murnanes Bay, near Childers Cove, has the only toilets and picnic facilities in the Park. These facilities are also available outside the Park at Peterborough. A VicRoads picnic area is poorly located on a road reserve near Crofts Bay (section 8.2.1).

Increasing the marketing profile of, and improving the facilities in, locations currently not experiencing high visitation but with the capacity to cater for increased visitor numbers, will help increase duration of stay at such sites, releasing the pressure from key sites such as Twelve Apostles and Loch Ard Gorge. Longer walks leading to the attractions at the Grotto and the Arch in Port Campbell National Park are currently being planned.

Aims

- Establish and maintain day visitor facilities which enhance visitor enjoyment of the Parks and are consistent with protecting park values.
- Provide facilities suitable for visitors with limited mobility.

Management strategies

- *Develop and maintain recreation facilities in accordance with table 5 and figure 5.*
- *Ensure that effluent disposal systems for toilets at Twelve Apostles, Loch Ard Gorge and Crofts Bay do not have a detrimental impact on park values.*
- *Provide gas barbecues at Childers Cove to replace wood fires removed from Murnanes Bay (section 5.1).*

6.3.4 Tourist Centre at Port Campbell

The existing Port Campbell National Park Visitor Information Centre, located between the camping park and the Great Ocean Road in Port Campbell Township, comprises the Park Headquarters, Information Desk, theatre and display area. The Centre has poor visibility

resulting in a low level of visitation compared with general visitation to the Parks. It lacks a wide range of tourist features and is not marketed to encourage people to visit it before visiting the Park. Most visitors undertake their Park visit without visiting the Centre.

Parks Victoria considers that there is a clear need for a major tourist visitor facility in or close to Port Campbell National Park which will provide tourists with a range of visitor experiences, facilities and information about the Parks and the region, and be an attraction in its own right to encourage longer visitor stays. There is also a clear need for better visitor management facilities at the Twelve Apostles, and Loch Ard Gorge, and at other key attractions.

The major facility building at Port Campbell should be of the highest architectural standard and be recognised in its own right as a regional attraction serving a wide range of tourist needs including:

- cultural experiences, including local Aboriginal cultural experiences;
- significant regional orientation/interpretative displays;
- restaurant and casual dining facilities;
- tourist information (Parks Victoria would move its existing park information centre function into this complex);
- indoor and sheltered outdoor viewing areas.

This new Tourist Centre should primarily be established through a private development based on a thorough demand assessment. Parks Victoria would be prepared to provide funds for park information displays in the Centre. Federal funds for tourist services and Aboriginal interpretation would also be sought.

Five alternative Government-owned sites for this development in Port Campbell have been identified (figure 6):

- Port Campbell Point (Public Purposes Reserve, Public Park Reserve and Road Reserve) (Site A);

TABLE 5 EXISTING AND PROPOSED RECREATION FACILITIES

SITE	DISABLED ACCESS	CAR PARK (SPACES)	WALK TRACK	LOOK OUT	BEACH OR SURF ACCESS	TOILETS	PICNIC TABLE	OTHER
Port Campbell National Park								
Gellibrand River	E	E(~8)					E	Retain boat launching ramp.
Bowkers Beach		E(~5)			E			Retain beach access through dunes.
Clifton Beach		E(~6)			E			Retain beach access through dunes.
Eastern entrance	E	E(2)						
Glenample Homestead	E	E(40)	E			E		Provide kiosk.
Gibsons Steps	E	E(14)		E	E			Disabled access to lookout only. Beach access via steps (except during heavy seas).
Twelve Apostles	E	E(36) P(~200)	E	E		P		Remove cliff-edge car parking and rehabilitate site. Construct new visitor amenity facility at car park, and construct walking track/boardwalk from car park to lookouts with underpass under the Great Ocean Road.
Loch Ard Gorge	E	E(~125) P(55-75)	E	E	E	P		No disabled access to beaches. Retain 5 bus and 6 car and caravan parks. Overflow car park north of Great Ocean Road. Remove car parking from road fingers (subject to detailed design).
Sherbrook Plantation		P(185-165)						Existing group camp.
Sherbrook camp								Walking access from Loch Ard Gorge car park.
Sherbrook River (west bank)		E(~5)			E			
Goudies Lookout		E(~6)	P	I				Convert vehicle track west of lookout to walking track.

Table 5 (cont.)

SITE	DISABLED ACCESS	CAR PARK (SPACES)	WALK TRACK	LOOK OUT	BEACH OR SURF ACCESS	TOILETS	PICNIC TABLE	OTHER
Port Campbell Township	E	E(12)	E	E	E	E	E	Proposed major Tourist Centre and information facilities, camping/caravanning facilities, SLSC facilities, toilet facilities, foreshore picnic tables, drinking water, jetty (not in Park) boat launching (off jetty). Retain car parking at Beacon Lookout. If Great Ocean Road is realigned, close car park and investigate possible coastal walk along former road alignment. <i>Napier</i> wreck.
Discovery Walk car park		E(6)	E	E				Retain walking track to Port Campbell or Two Mile Bay.
Two Mile Bay		E(~8)	E		E			Retain Discovery Walk to Port Campbell. Car parking along side of road.
Two Mile Bay (west)		E(~8)		P	I/P			Formalise beach access.
The Arch		E(~10)	E	E				
London Bridge	E	E(29)	E	E				
The Sweepole		P(~2)	P					Convert existing vehicle track to walking track. Construct car park near Great Ocean Road.
The Grotto		E(37)	E	E				Construct new walking track and viewing platforms.
Crown of Thorns		E(~4)	P	I	E			Construct new car park near Great Ocean Road (4 spaces). Formalise walking track along existing vehicle track alignment to maintain access to beach.
Western entrance	E	E(2)						
Curdies Inlet and Newfield Bay		E(12)	E		E			<i>Schomberg</i> and <i>Young Australia</i> wrecks. Retain walking track to The Spit.

Table 5 (cont.)

SITE	DISABLED ACCESS	CAR PARK (SPACES)	WALK TRACK	LOOK OUT	BEACH OR SURF ACCESS	TOILETS	PICNIC TABLE	OTHER
Bay of Islands Coastal Park								
Wild Dog Cove East		E(~15)	E		E			Retain beach access via steps. Upgrade car park.
Wild Dog Cove West		E(~20)	E		P			Upgrade car park. Construct beach access steps.
The Wells		E(~12)	E	E	I			Upgrade surf access.
Halladale Point			E	E	E			Access to surf via steps east of point. Construct walkers' shelter. <i>Falls of Halladale</i> wreck.
Worm Bay		E(10)	E	E	E			Upgrade steps providing beach access.
Bay of Martyrs	E	E(30)	E	E	E			Existing beach access via steps.
Massacre Bay (east)		E(~5) P(10)	E		E			Upgrade car park. Beach access via steps.
Massacre Bay		E(~5)	E	I				Upgrade car park and walking track (board walk over Aboriginal middens).
Crofts Bay East		E(~10) P(~30)	E	E	I	P		Upgrade car parking, lookout and walking tracks. Formalise beach access.
Crofts Bay West		E(~8)	E	E	E			Upgrade car park and beach access.
Bay of Islands	E	E(27)	E	E				
Boat Bay		E(~6)	E	E	E			Existing boat launching. Beach access via boat ramp. Lookout. Parking for cars and boat trailers only. Upgrade car park and boat ramp. Review and develop site and facilities as western entry to Parks (sections 6.3.1, 6.3.12 and 8.2.1).
Dynons Road		E(~10)		I				Slashed vehicle turn-around area north of cliffs. Allow car parking in turn-around area.
Antares (Radfords Road)	E	E(~6)		I/P				<i>Antares</i> wreck viewing site. Formalise lookout. Continue revegetation works.

Table 5 (cont.)

SITE	DISABLED ACCESS	CAR PARK (SPACES)	WALK TRACK	LOOK OUT	BEACH OR SURF ACCESS	TOILETS	PICNIC TABLE	OTHER
Mathiesons Road		E(~8)		P	I			Formalise car park to protect Clover Glycine and Metallic Sun-Orchid. Maintain beach access via informal track. Designate hang glider launch site on cliff (section 6.3.15).
West of Mathiesons Road		I/P(~8)			I			Formalise car park. Maintain beach access via informal track.
Stanhopes Bay		E(~12)		E	E			Beach access via steps.
Dog Trap Bay		I/P(~8)		P	I/P			Close track to west of bay to vehicles. Develop walking track along vehicle track and lookout. Formalise beach access.
Childers Cove area:		E(~30)/ P(~40)	E	E	E	E	E	<i>Children</i> wreck. Existing toilets and water at MB. Beach access via steps and track (MB & CC); informal accesses at SB. Beach accesses to be upgraded (table 7). Formalise lookouts; rationalise track network; develop car parks; maintain existing car park at MB. Retain picnic tables donated by Murnane family at MB. Provide gas barbecue and picnic tables at CC. Remove weeds and revegetate degraded areas, including the re-establishment of Sheoaks to provide shade near picnic facilities. Replace 'Danger' signboard with a more aesthetic sign.
Sandy Bay (SB)		I(~5)/P(5)						
Murmanes Bay (MB)		E(~25):						
Childers Cove (CC).		E(15)/ P(~10)						
Lake Gilllear			I					Liaise with Warrnambool Rifle Club to provide car park and walking track if the proposed rifle range at Lake Gilllear is constructed (section 8.2.2).

E = existing facility; I = informal facility; P= proposed facility

- Old Water Tower Site (National Park) (Site B);
- New Water Tower Site (Crown land and Road Reserve) (Site C);
- Port Campbell Central, in the vicinity of the existing Port Campbell National Park Visitor Information Centre (National Park) (Site D);
- Port Campbell Central in the vicinity of the caravan park and Surf Life Saving Club clubhouse (Site E).

The Government will consider quality proposals from the private sector to develop one of these sites.

Aims

- Develop a world class Tourist Centre attraction highly attractive to all visitor segments, especially international tourists.
- Ensure that the Tourist Centre augments and stimulates visitors' experience of the Parks.

Management strategies

- *Carefully consider any private sector proposals for a major Tourist Centre (figure 6), on one of the following sites, taking into account all relevant factors including maintaining existing uses (table 5), appeal to visitors, impact on the immediate environment, physical suitability of the site for such a development, integration with the township and potential commercial viability:*
 - *Port Campbell Point (Port Campbell foreshore) including a section of the alignment of the Great Ocean Road and a Public Park Reserve and Public Purposes Reserve (Site A);*
 - *site of the old water tower located close to the coast in the section of the Port Campbell National Park within the Port Campbell Township which is to be removed soon (Site B);*
 - *new water tower site on Crown land and old coastal road reserve north of the Great Ocean Road east of the Port Campbell Township (Site C);*
 - *area within Port Campbell National Park with frontage to the Port Campbell*

Creek and to the Great Ocean Road in the centre of Port Campbell Township, partly occupied by the existing Port Campbell Visitor Information Centre (Site D);

- *area within Port Campbell National Park with frontage to the Port Campbell Creek, Tregaea Street and Port Campbell Bay, occupied by the southern section of the Port Campbell Caravan Park, and the Port Campbell Surf Life Saving Club (Site E). The development and implementation of any proposal will be done in conjunction with the Shire, the community and the directly affected parties including the Port Campbell Surf Life Saving Club and the Port Campbell caravan park operator.*

6.3.5 Key attractions

Twelve Apostles Area

The Twelve Apostles site currently experiences the highest visitor pressure of any site in the Parks and trends in visitor numbers suggest that this is likely to continue. Present levels of visitation and the way that these are being managed are having negative impacts on the environment and visitor enjoyment.

To address the current problem of inadequate car parking and basic facilities at the Twelve Apostles, to enhance the visitor experience and to protect the natural values and visual amenity, the following developments are proposed, subject to necessary planning approvals:

- relocate the existing car park and access roads away from the fragile coastal location to a site on private land north of the Great Ocean Road, and extend the size of the car park, subject to negotiation with private landholders. This will alleviate the immediate inadequacies of car parking, significantly improve site safety and provide the option to further extend car parking to cater for some of the growth in future demand. Visual and environmental considerations and visitor capacity at the Twelve Apostles limit the continued extension of car parking, and in the

medium-term a visitor number cap will probably be required;

- establish a visitor amenity facility at the car park integrating toilet facilities with a major sheltered orientation display and signage, information service and interpretation facilities.

Access to the viewing area for the Twelve Apostles from the car park will be via a continuous, sensitively designed and sited walking track and boardwalk, with a level surface for wheelchair access and for the aged and infirm, passing under the Great Ocean Road. The walk will incorporate high quality interpretation, making the trip from the car park a key part of the visitor experience.

The ‘people mover’ concept to link the car park and viewing areas at Twelve Apostles, using the walk or a separate trail will be investigated. The people mover would comprise a small powered vehicle with a number of small carriages.

Detailed site capacity analyses and visitor growth forecasts will be undertaken to guide future management of the site (section 6.1).

Loch Ard Gorge Area

Loch Ard Gorge is also experiencing visitation levels which regularly exceed car parking capacity. Toilets are needed to accommodate high and increasing numbers of visitors and increased lengths of stay.

To address the immediate problem of inadequate car parking, and reduce environmental and visual impacts, the following steps are proposed:

- maintain the existing car park at its current location and establish a over-flow car park on a currently degraded site, north of the Great Ocean Road;
- remove all car parking from the road ‘fingers’ (e.g. the road to Island Archway) and revegetate these fingers, except for a narrower track for pedestrians and a possible ‘people-mover’ service;
- establish a people mover/pedestrian track, passing under the Great Ocean Road and

linking the car park and overflow car park and main lookouts;

- establish toilet facilities at a suitable location;
- investigate a walking circuit that would include new track linking the proposed car park located north of the Great Ocean Road to the interpretative walk leading to the Sherbrook River via the lower Sherbrook River valley.

A visitor cap at Loch Ard Gorge is also considered a likely longer term requirement.

Aims

- Given the increasing visitor pressures on park attractions, develop improved facilities to reduce environmental impacts and to enhance the visitor experience.
- To ensure that environmental values are not compromised, introduce maximum visitor caps at key sites in the medium-and longer term, if necessary.

Management strategies

- *Develop the detailed proposal to relocate the existing car park and access roads at the Twelve Apostles to a site on private land north of the Great Ocean Road, and to develop the accompanying facilities (as outlined above), subject to necessary planning approvals.*
- *Develop a detailed proposal to establish an over-flow car park for Loch Ard Gorge at a degraded site north of the Great Ocean Road, pull back parking away from the cliff edge and develop associated facilities as outlined above.*
- *Encourage walking or cycling between Glenample Homestead and the new Twelve Apostles car park when the Great Ocean Walk is established (section 6.3.8).*
- *Investigate the provision of people mover services at Twelve Apostles, Loch Ard area and Glenample Homestead and, in the medium-term, the linking of those facilities.*

6.3.6 Camping and caravanning

The Port Campbell, Princetown and Peterborough caravan parks, and the Princetown Recreation Reserve, are the most important caravanning and camping sites in the section of coast encompassing the Parks.

The Port Campbell Cabin and Camping Park is valuable to the township economy and is an important facility for Park visitors. It is located close to the eastern bank of Port Campbell Creek, in Port Campbell National Park and within the boundaries of the Port Campbell Township.

The Port Campbell Cabin and Camping Park is leased to a private operator. Conditions in the lease ensure that existing levels of service are maintained and that surrounding areas in Port Campbell National Park are not affected.

Facilities include 15 on-site cabins, powered and non-powered sites, toilets, hot showers and washing facilities. The facilities require continual upgrading to maintain the Cabin and Camping Park to a standard appropriate to such an important tourist facility.

The Cabin and Camping Park is usually full during the Christmas and Easter school holidays. Outside these periods occupancy rates are generally at a moderate level. There is no space available to provide additional sites.

There is a large group campsite in the lower Sherbrook River valley. It is managed for camping associated with adventure and educational activities.

The Parks are generally too narrow, and their natural values too significant, to allow camping in other areas within the Parks although there is potential for camping to be developed on private property adjacent to the proposed Great Ocean Walk. The risk of bush fires in the Parks caused by camp fires is also high (sections 5.1 and 6.3.3).

Aim

- Maintain existing opportunities for camping with minimum impacts on park values.

Management strategies

- *Ensure that existing services in the Port Campbell Cabin and Camping Park are*

maintained, and that standards are improved.

- *Continue to permit group camping at the Sherbrook Camp and monitor its impacts on the park environment.*
- *Do not permit camping elsewhere in the Parks.*

6.3.7 Vehicle access

Most key visitor destinations within the Port Campbell National Park and the Bay of Islands Coastal Park are accessed via the Great Ocean Road and a (usually) short sealed access road within the Parks. A number of formed and unformed tracks lead from the Great Ocean Road to other sites used for fishing and surfing. Vehicular access to the coast to the west of Boat Bay is limited to local roads (figure 4).

Aims

- Provide and maintain appropriate roads and tracks for visitor use and management purposes.
- Increase awareness of the Parks' identity by improving the roadside directional signage.
- Minimise the impact of vehicle use on the Parks' values.

Management strategies

- *Manage and permit use of vehicle roads and tracks in accordance with table 6 and figure 4.*
- *Redirect 4WD track car parks and turning circles away from the coastal edge at the end of the Two Mile Bay West Track to formalise and contain the extent of movement.*
- *Upgrade road and track signage throughout the Parks.*

TABLE 6 MANAGEMENT OF VEHICLE ROADS AND TRACKS

TRACK	CURRENT		FUTURE MANAGEMENT/COMMENT
	CLASS	STATUS	
Port Campbell National Park			
Access roads at Loch Ard Gorge, Twelve Apostles, The Arch, London Bridge and The Grotto	1(s)	O	No change.
Clifton Beach Track	1(u)	O	Resurface track. Close and rehabilitate informal side tracks.
Sherbrook Hill Track	1(u)	O	No change.
No. 1 Road	3	O	No through road. Make MVO.
Locks Road	3	SC	Maintain seasonal closure.
Plantation Road	1(u)	O	No change.
Bakers Oven Track	1(u)	O	Close and rehabilitate informal side tracks.
Goudies Lookout Track:			
- north of Goudies Lookout	1(u)	O	No change.
- west of Goudies Lookout	3	SC	Close to vehicles. Unsuitable for vehicles in wet weather. Likely to be part of the Great Ocean Walk.
Sparkes Gully Track	1(u)	O	No change.
North – South Fireline Track	3	SC	Make MVO. Not required for public access.
East – West Fireline Track	3	O	No change.
Water tower access track	1(u)	MVO	No change.
Two Mile Bay Road	1(s)	O	No change.
Two Mile Bay West Track	1(u)	O	No change, unless Great Ocean Road is realigned.
Point Hesse Track	1(u)	O	Upgrade start of track.
Sweep-hole Track	3	O	Close and convert to walking track. Provide car parking near Great Ocean Road.
10 Chain Reef Track	1(u)	O	No change
Crown of Thorns Track	1(s)	O	Road surface badly degraded. Close to vehicles. Move car park to northern end. Convert to a walking track to provide coastal access.
Bay of Islands Coastal Park			
Firebreak around VicRoads picnic area opposite Crofts Bay	3	MVO	Close and rehabilitate following removal of picnic area.

Table 6 (cont.)

TRACK	CURRENT		FUTURE MANAGEMENT/COMMENT
	CLASS	STATUS	
Dynons Road	3	SC	Section north of Park unsuitable for winter use. Maintain track as a slashed break.
Radfords Road	1(u)	O	No change.
Baileys Road	3	MVO	Maintain track as a slashed break.
Mathiesons Road	1(u)	O	Road upgraded within Park and car park constructed March 1998.
Firebreak track along Park boundary: west of Mathiesons Road	3	O	Formalise access for 500 m west of Mathiesons Road. Do not permit vehicle access more than 500 m west of Mathiesons Road.
Stanhopes Bay to Dog Trap Bay	3	O	Upgrade to 1(u) standard for 300 m west of Stanhopes Bay Track. Formalise car park. Do not permit vehicle access more than 300 m west of Stanhopes Bay Track.
Access track to Sandy Bay (east)	3	O	Informal access track. Close to vehicle traffic. Provide car parking at junction of Childers Cove Road. Allow walk-in access.
Access track to Sandy Bay (west)	3	O	Close informal access track leading to old shack site to vehicles and use as part of Murnanes Bay/Sandy Bay Walking Track. Provide roadside parking near the existing track entrance.
Childers Cove Road	1(s)	O	Maintain car park at Murnanes Bay. Rationalise vehicular access in consultation with local users, taking into account geological risk issues.
Killeens Road	3	MVO	Maintain track as a slashed break.
Other sections	1(u) 3	MVO	Primary purpose is as a fire break. Standard varies from a slashed break to a rough track.

Class:

1 - All weather; (s) - sealed, (u) - unsealed

2 - Dry weather only

3 - 4WD - all weather

Status:

O - Open to the public

SC - Seasonally closed

MVO - Management Vehicles Only

Tracks less than 100 m long that give access to car parks are not included in this table, but figure 4 shows existing, and proposed future use.

- *Liaise with Vic Roads to improve roadside signage to visitor attractions in accordance with directions in the Plan.*

6.3.8 Walking

Walking within Port Campbell National Park and the Bay of Islands Coastal Park is predominantly confined to vehicle tracks in the Sherbrook River Valley, short coastal access tracks around visitor nodes, and the Discovery Walk between Two Mile Bay and Port Campbell. There are also a number of

short walking tracks giving coastal access from car parks (table 7). Two major new walks are proposed for the Parks; the Clifftop Walk in Bay of Islands Coastal Park (between Peterborough and Boat Bay) and a section of the Great Ocean Walk (between Princetown and Port Campbell).

The Clifftop Walk was proposed in the Bay of Islands Coastal Park Development Plan (NPS 1994). A flora and fauna assessment of the areas to be traversed by the walk was undertaken (Westbrook et al. 1996). Archaeological assessments of the sections already constructed were undertaken in conjunction with Framlingham Aboriginal Trust. The walk will offer a variety of coastal experiences, including views of outstanding scenery, enhanced access to beaches and viewing platforms, and a diversity of educational and interpretative information.

The Clifftop Walk will be promoted as both a medium length walk of approximately 5 km and as an easy walk between existing visitor destinations. Uncontrolled foot access by sightseers, and particularly by anglers and surfers who park along the Great Ocean Road and walk into frequented locations at cliff tops, over heathland, and to beaches over dunes, contributes to vegetation degradation, erosion, and occasional littering. These visitors are also placing themselves at risk in areas of high cliffs with sheer drops and inherent instability.

A study to assess the possibilities of a long distance coastal walking track between Anglesea and Portland (O'Shea & Byrne 1989) recommended that a track be developed to take in the area's natural attractions, remoteness, coastal views and maritime history. The section of the walk between Apollo Bay and Port Campbell will be known as the 'Great Ocean Walk'. The Cape Otway to Princetown component of the walking track is currently under construction, using, where possible, beaches and existing walking, horse riding and vehicle tracks.

The section of the Great Ocean Walk from Princetown to Port Campbell will use existing roads and tracks where possible. Minimal

impact construction and maintenance techniques will be used, including construction of sections as a slashed track. Careful planning is needed to ensure minimal impacts on environmental and cultural values and to avoid geologically unstable areas.

The Princetown to Port Campbell section of the Great Ocean Walk will be a one-day walk and will not require overnight camping or accommodation.

Construction of the Great Ocean Walk with clearly visible and posted entrances to direct walkers onto the track, and constructed branch tracks to the more regularly used informal attractions, will help to control undesirable off-track access.

The Great Ocean Walk will link existing visitor destinations, providing a range of day walks between sites for groups and individuals wishing to see sections of the coastline. A link will be provided to Glenample Homestead.

There is no immediate proposal to continue the Great Ocean Walk west of Port Campbell. However, if it were to be extended in the future, the existing Discovery Walk between Port Campbell and Two Mile Bay could be used for a short section. Between Two Mile Bay and Peterborough there are no existing or disused tracks which the route could follow. If the walk were to extend through the western section of Port Campbell National Park, possible routes outside the Park, such as road reserves, would need to be considered, in consultation with Corangamite Shire and adjacent landholders.

West of Peterborough, a coastal walk could combine the Clifftop Walk to Boat Bay with sections of the existing boundary firebreak between Boat Bay and Lake Gilliar. Where there are no existing tracks, a minimal impact track could be provided, such as a slashed break. Bridges would be required to traverse

TABLE 7 MANAGEMENT OF WALKING TRACKS

TRACK	LENGTH	CURRENT STANDARD (GRADE)	ADDITIONAL WORK REQUIREMENTS	FUTURE STANDARD
Port Campbell National Park				
<i>Great Ocean Walk (Princetown to Port Campbell)</i>				
• Princetown to Clifton Beach	2.9 km	existing shire road	Signage.	As is
• Clifton Beach to Gibsons Steps	2.2 km	proposed	Construct track. Give consideration to dune stability.	C
• Gibsons Steps to Twelve Apostles	~1 km	proposed	Construct track. Construct new track south of the Great Ocean Road. Give consideration to cliff stability.	B
• Twelve Apostles to Island Archway (Loch Ard Gorge)	3.3 km	proposed	Construct as a slashed track. Construct new track south of the Great Ocean Road. Give consideration to cliff stability.	B
• Island Archway to Sherbrook River	1.5 km	A1 and A2	Use existing coastal walking tracks. Provide signage.	A1 and A2
• Sherbrook River to Sparks Gully Track	3.0 km	proposed	Where possible, construct track on disused vehicle tracks. Construct remainder as a slashed track.	C
• Sparks Gully Track to Port Campbell	4.0 km	proposed	Use disused track west of Sparks Gully; cross Great Ocean Road, North – South Fireline and East – West Fireline tracks.	C
Glenample Homestead Historic Walk	300 m	B		B
Twelve Apostles/Glenample/Gibsons Steps loop	~2 km	proposed	Construct track from across Great Ocean Road to link with the Great Ocean Walk east of Gibsons Steps.	B

Table 7 (cont.)

TRACK	LENGTH	CURRENT STANDARD (GRADE)	ADDITIONAL WORK REQUIREMENTS	FUTURE STANDARD
Loch Ard Gorge interpretative walks - Geology	450 m	A2		A2
- Shipwreck	700 m			
- Living on the edge	1.6 km			
Goudies Lookout Track (west of lookout)	~1 km	4WD track	Close to vehicles. Construct drainage. Rehabilitate wide sections.	C
Discovery Walk (Port Campbell to Two Mile Bay)	1.9 km	A2 and B	Upgrade entrance from Great Ocean Road car park west of Port Campbell. Upgrade signage.	A2
The Arch	200 m	A1	Provide interpretative material.	A1
London Bridge	300 m	A1		A1
The Grotto	300 m	B	Upgrade.	A2
Beach Access Tracks				
Bowkers Beach	500 m	D	Monitor dune erosion.	C
Clifton Beach	300 m	D	Monitor dune erosion.	C
Gibsons Steps	100 m	A1	Monitor cliff stability.	A1
Sherbrook River (east bank)	200 m	B	Monitor condition of track and steps.	B
Sherbrook River (west bank)	400 m	D	Monitor dune erosion.	C
Rutledge Creek	100 m	C	Rationalise track network.	B
Two Mile Bay	300 m	D	Monitor dune erosion.	C
Two Mile Bay West	300 m	D	Control erosion along upper section.	C
Sweepole Track	150 m	4WD track	Close to vehicles and convert to walking track.	C
Crown of Thorns Track	200 m	vehicle track	Close to vehicles and convert to walking track.	C
The Spit	400 m	D	Monitor dune erosion.	C

Table 7 (cont.)

TRACK	LENGTH	CURRENT STANDARD (GRADE)	ADDITIONAL WORK REQUIREMENTS	FUTURE STANDARD
Bay of Islands Coastal Park				
<i>Clifftop Walk (Peterborough to Boat Bay)</i>				
• Peterborough to Halladale Point	1.5 km	C	Upgrade between Wild Dog Cove and Halladale Point. Provide interpretation.	B
• Halladale Point to Bay of Martyrs	500 m	A2		A2
• Bay of Martyrs to Massacre Bay (west)	1.7 km	proposed	Construct track.	B
• Midden Walk	200 m	D	Construct boardwalk across Aboriginal midden.	A2
• Massacre Bay (west) to Crofts Bay (east)	600 m	proposed	Construct track.	B
• Crofts Bay (east) to Crofts Bay (west)	900 m	proposed	Most of route along beach. Construct beach access points.	B
• Crofts Bay (west) to Bay of Islands	600 m	proposed	Construct track.	B
• Bay of Islands (car park - lookout)	150 m	A2		A2
• Bay of Islands to Boat Bay (Wetlands Walk)	500 m	B	Constructed January 1998.	B
• Boat Bay (car park – lookout)	150 m	B	Constructed January 1998.	B
Radfords Road – track to lookout	20 m	B	Upgrade.	B
Mathiesons Road - beach access track	100 m	C		
Stanhopes Bay - beach access track	20 m	C		
Dogtrap Bay - beach access track	200 m	D	Formalise track.	
Access track to Sandy Bay (east)	150 m	4WD track	Close to vehicles and signpost.	D

Table 7 (cont.)

TRACK	LENGTH	CURRENT STANDARD (GRADE)	ADDITIONAL WORK REQUIREMENTS	FUTURE STANDARD
Sandy Bay (west) - beach access track	200 m	part 4WD track, part new track	Close existing section to vehicles. Construct new section to provide beach access.	
Murnanes Bay to Sandy Bay Cove (west)	700 m	4WD track	Close access to vehicles. Clear overgrown vegetation.	C
Murnanes Bay beach access	50 m	C	Upgrade to improve safety.	
Headland walk between Murnanes Bay and Childers Cove	500 m	D	Close access to vehicles.	B
Murnanes Bay to Childers Cove	150 m	vehicle track	Maintain access for walkers to Childers Cove. (For vehicle access see table 6.)	B
Lake Gilliear area	400 m	proposed	Maintain informal walking access, unless rifle range is constructed, in which case a walkers access track around the safety cone will be constructed (section 8.2.2). Do not permit access near Bat Cave (section 8.2.2).	D

Tracks less than 100 m long are generally not included in the table.

Track standards:

- A1 Fully sealed surface or boardwalk, width 1.5 – 2 m.
- A2 Track well drained with a good surface, up to 1.5 m wide.
- B Track well defined, and benched and drained, up to 1 m wide.
- C Track defined through use, may be benched, drained and cleared in sections.
- D Track or footpath defined through use but with no basic construction.

two creeks and an erosion gully at Stanhopes Bay.

Camping and other walkers' accommodation is available in Peterborough and Warrnambool, but overnight accommodation and camping would need to be developed on private property adjacent to the Park on at least one site between these towns. Bay of Islands Coastal Park is too

narrow to allow camping or other accommodation.

Aims

- Continue the development of the Great Ocean Walk.
- Provide a range of opportunities for walking within the Parks.

- Maintain an appropriate network of coast access tracks.

Management strategies

- *Develop and maintain walking and coast access tracks in accordance with table 7 and allow walking only on tracks provided (other than beach areas).*
- *Develop the Princetown to Port Campbell section of the Great Ocean Walk in accordance with table 7. Where possible, construct the track along existing or disused tracks. Identify routes and construct new tracks, where required, subject to environmental and geological assessment and approval.*
- *Develop the Clifftop Walk from Peterborough to Boat Bay in accordance with the Bay of Islands Coastal Park Development Plan (NPS 1994), subject to archaeological and geological assessments.*
- *Determine the level of demand for an extension of the Great Ocean Walk from Port Campbell to Warrnambool. If it is proposed to extend the Great Ocean Walk west of Port Campbell, identify possible routes in conjunction with Corangamite and Moyne Shires and adjacent landholders.*
- *Develop a loop walking track linking the new Twelve Apostles car park with Glenample Homestead and Gibsons Steps, returning to the Twelve Apostles, using a section of the Great Ocean Walk.*
- *Identify commonly-used locations in Port Campbell National Park that are accessed off-track, and consider the construction of formalised access tracks. Provide parking along the Great Ocean Road and clear directional signage.*
- *Upgrade signposting of walking tracks and control off-track access in the Parks.*

6.3.9 Horse riding

Demand for horse riding in Port Campbell National Park is currently low and is largely confined to riders from adjacent properties using designated public roads, particularly in the Sherbrook River Valley. A tour operator currently has a permit to undertake one tour a year through the eastern section of the Park.

Horse riding occurs in Port Campbell National Park near Peterborough where Hooded Plovers nest. In some instances beach access is gained through highly sensitive areas, such as the Crown of Thorns, causing damage to sensitive vegetation. Horse riding also occurs in areas now included within Bay of Island Coastal Park, on beaches and designated vehicle tracks. Horse riding has traditionally been permitted in Bay of Islands Coastal Park. Many riders ride off tracks, causing damage to sensitive vegetation, and on beaches. The most regularly used beach is at the Bay of Martyrs, where horses access the beach down a steep bank. The surface of Bay of Martyrs beach is solid and is therefore used throughout the year for racehorse training and swimming in the early mornings. The eastern end of the beach provides breeding habitat for Hooded Plovers. Horses are generally confined to public vehicle roads and tracks because off-track riding can damage vegetation and horses' hooves can degrade soft or water-logged ground or track surfaces. Horses can also spread weeds and cause conflicts with other park users. Due to the small size of the Parks, the paucity of suitable horse riding tracks and the sensitivity to damage of vegetation, ground surfaces and archaeological sites, opportunities for horse riding are necessarily restricted.

Aims

- Provide opportunities for both commercial and recreational horse riding, consistent with maintaining park values.
- Minimise environmental impacts caused by horse riding.
- Minimise conflict between horse riders and other park users.

Management strategies

- *Allow horse riding in accordance with table 8.*
- *At Bay of Martyrs, require horse riders to walk horses when on the beach access track and in the area delineated by signs at the eastern end of the beach to protect other visitors and Hooded Plovers.*
- *Introduce a permit system for recreational riders to:*
 - *improve the level of communication between riders and rangers;*
 - *provide riders with information (including a map, Park horse riding regulations, track conditions, and the restrictions on riding locations);*
 - *provide advice on feed types that will minimise the risk of spreading weeds in the Park (section 4.2);*
 - *facilitate monitoring of recreational rider use of the Park.*
- *Make permits available to registered horse riding clubs covering their members, and to individual riders.*
- *Monitor the impacts of horse riding on environmental values (including the Hooded Plover), other users and track conditions. On the basis of this information, determine or adjust appropriate levels and periods of use for specific tracks and areas.*
- *Liaise with horse riding groups using the Park to promote safe, environmentally responsible horse riding practices, and an awareness of other park users.*
- *Encourage use of minimal impact horse riding techniques and adherence to the 'Horse Riding Code' (CNR 1994).*

6.3.10 Cycling

Bicycle riding currently occurs through the Parks, primarily by touring riders using the Great Ocean Road and other public roads. There is the potential for an increase in demand for bicycle touring away from the Great Ocean Road as the area increases in

popularity with touring cyclists. VicRoads is currently studying the level of demand for infrastructure for bicycle touring along the Great Ocean Road, and is assessing the appropriateness of creating a separate bicycle track following the Great Ocean Road.

The 'Mountain Bike Code' (CNR 1993) provides guidelines for safe cycling and for minimising impacts of cycling on park environments.

Aim

- Provide opportunities for cycling while minimising environmental damage and conflicts with other recreation activities.

Management strategies

- *Allow cycling on a multi-purpose track between the Twelve Apostles and Loch Ard Gorge if one is developed.*
- *Permit cycling on all vehicle roads and tracks in the Parks, including management vehicle only tracks. Apply seasonal and temporary closures of vehicle tracks to cycling.*
- *Prohibit cycling on walking tracks.*
- *Liaise with VicRoads regarding the planning and location of a Great Ocean Road bicycle route. Any alignment should be along existing disturbed areas. Ensure that a review of environmental factors is undertaken prior to any work commencing in the Parks.*
- *Encourage use of the 'Mountain Bike Code'.*

6.3.11 Dogs

Dogs are not permitted in Port Campbell National Park unless confined to a vehicle that is in transit through the Park.

Domestic dogs outside cars in Port Campbell National Park and on Port Campbell foreshore, usually dogs with surfers, pose a problem for management.

TABLE 8 MANAGEMENT OF HORSE RIDING

PERMITTED LOCATIONS	ACCESS	NOTES AND CONDITIONS
Port Campbell National Park		
All public vehicle roads and tracks		Seasonal closures may apply.
No 1 Road (Sherbrook River Valley)	via Booringa Road	May be closed during wet conditions.
Bay of Islands Coastal Park		
Bay of Martyrs beach	From the Bay of Martyrs car park, along the Clifftop Walk to the designated sandy track down the dunes to the beach.	Access permitted between dawn and 9AM daily. Access down dunes is steep and suitable for experienced horses and riders only. Sections of the beach may be temporarily closed to horse riding during the Hooded Plover breeding season to protect breeding birds.
Boundary firebreak track (between Radfords Road and the creek situated 1.7 km east of Dynons Road)	via Radfords Road or Dynons Road. The seasonal closure on the southern end of Dynons Road will apply to horses.	Track provides excellent coastal views. Horses are not permitted to leave the slashed track. The creek east of Dynons Road is impassable to horses.

Notes: Recreational horse riding will be allowed from the south end of Blakes Road along existing track and firebreak, and the track along the old creek bed north-west of Flaxmans Hill, to Three Mile Beach, subject to a permit including conditions.

Horse riding is prohibited on all other beaches, management vehicle only tracks and non-vehicular tracks. Horses are only permitted in the Parks during daylight hours.

Dogs are allowed on leashes in parts of Bay of Islands Coastal Park. Dogs are not permitted on Bay of Martyrs beach because of the presence of Hooded Plovers.

Aims

- Permit dogs in Bay of Islands Coastal Park consistent with protecting park values.
- Continue to prohibit dogs in Port Campbell National Park.

Management strategies

- *Continue to prohibit domestic dogs in Port Campbell National Park, except where confined to cars in transit or in car parks.*

- *Allow dogs on leashes in Bay of Islands Coastal Park only:*
 - *in Bay of Martyrs car park and areas east of Bay of Martyrs;*
 - *at Sandy Bay.*
- *Implement an education program for dog owners and visitors to Port Campbell foreshore to ensure that dogs are not taken into the National Park.*
- *Monitor the impact of dogs in Bay of Islands Coastal Park on wildlife and other visitors. Take appropriate management action to control any impacts.*

6.3.12 Boating

The use of small boats off the Parks' coast is hazardous, because of highly changeable weather conditions and frequent heavy seas. Boat launching facilities of various types are located within or adjacent to the Parks at Port Campbell, Boat Bay, Peterborough and Princetown. Boating is also popular on Curdies Inlet, which is outside the planning area.

Port Campbell Bay is a minor port for small boats. The port, jetty and other facilities are not within the Park. Small boats are launched by crane off the jetty. Boat launching from Port Campbell beach (which is within the Park) is restricted to craft operated by the Port Campbell Surf Life Saving Club and other emergency services.

The boat ramp at Boat Bay, in Bay of Islands Coastal Park, is very steep and narrow and difficult to use, and the top of the ramp is close to the Great Ocean Road. Car parking is not permitted on the beach and there is at present only sufficient parking in the Park and on the adjacent road reserve at Boat Bay for a small number of vehicles with trailers.

Moyne Shire manages the boat launching facility on the foreshore reserve at the mouth of the Curdies River at Peterborough. This facility is frequently unusable as a result of sand build-up.

The boat ramp on the Gellibrand River at Princetown is within Port Campbell National Park, although the river itself is outside the Park.

Boats are sometimes slipped down the cliffs or dunes onto beaches in Bay of Islands Coastal Park, resulting in erosion and damage to vegetation. Boats are also sometimes stored in dune areas, damaging fragile vegetation.

Important Little Penguin rookeries in the Special Protection Areas at Flaxmans Hill, London Bridge and Twelve Apostles could be threatened if disturbed by visitors in boats.

Aim

- Provide opportunities for boating in the Parks while minimising environmental

impacts and conflicts with other Park visitors.

Management strategies

- *Continue to permit the launching of boats by the Port Campbell Surf Life Saving Club and other emergency services from Port Campbell beach.*
- *Retain the boat ramp at Boat Bay. In consultation with VicRoads, modify the boat ramp and car and boat trailer parking facilities to provide for safe use by boat users and walkers.*
- *Continue to prohibit parking on the beach at Boat Bay.*
- *Do not permit slipping or dragging of boats down dunes or cliffs. Permit storage of boats only in unvegetated areas.*
- *Prohibit the landing of boats in the Special Protection Areas at Flaxmans Hill, London Bridge and Twelve Apostles.*

6.3.13 Fishing and diving

Rock, beach and estuary fishing are popular recreation activities in the Parks, particularly for residents of the surrounding districts. A range of cliff tops, beaches, rockshelves and streambanks are used as fishing sites. In calm conditions, fishing also occurs from boats, mostly off Port Campbell and Newfield Bays and the Bay of Islands. The Parks' streams are generally not suitable for fishing.

Intertidal collecting occurs on exposed intertidal reefs in the Parks. The intensity of collecting and its impact on the Parks' intertidal ecology are unknown. Given the impact that intertidal collecting has had on the intertidal ecology along other sections of the Great Ocean Road coastline, it would be prudent to set aside some no-take areas within the Parks and to monitor impacts in other areas.

Diving, snorkelling and spear fishing are undertaken in intertidal areas in the Parks and in reef areas adjacent to the Parks. The shore platforms, reefs and shipwrecks off the coastline are of considerable interest to divers.

However, the very dangerous seas and uncertain weather greatly restrict periods of diving. Most scuba diving is done from the shoreline in Port Campbell Bay and Loch Ard Gorge. In calm weather other accessible sites close to offshore reefs are used, particularly Two Mile Bay, Ten Chain Reef and the Bay of Islands.

The activities of some divers and anglers contribute to park management problems such as cliff erosion and the formation of informal access paths through fragile coastal vegetation. The impact of divers on the marine life and historic wrecks has not been assessed. However, it is known that a substantial number of items has been illegally removed from wrecks in the past, and that removals still occasionally occur (section 4.5). Spear fishing is having a substantial impact on the fish populations in Port Campbell Bay and concerns have been raised regarding the impacts on this activity (I. Smith pers. comm.). The impacts of spear fishing in other areas abutting the Parks are not known.

The existing network of roads and tracks gives access to many sections of the coastline (tables 6 and 7).

Aim

- Provide opportunities for fishing and diving in the Parks where it is consistent with the protection of park values.

Management strategies

- *Allow recreational fishing and diving in all areas of the Parks, except Special Protection Areas. Provide access for recreational fishing and diving in accordance with tables 6 and 7.*
- *Liaise with recreational fishing and diving groups to facilitate minimal impacts and promote an understanding of park values.*
- *Liaise with NRE to monitor the impacts of fishing on the ecology of the Parks, and take necessary action to ensure sustainability.*

- *Support programs to manage fish and shellfish populations in a sustainable manner in waters adjacent to the Parks.*
- *Promote the use of responsible methods of rubbish disposal, particularly among the angling community.*
- *Permit intertidal collecting in accordance with Parks Victoria guidelines, except in Special Protection Areas, where intertidal collecting is prohibited.*
- *Monitor levels of intertidal collecting and impacts on intertidal ecology. If necessary, prohibit intertidal collecting in other sections of the Parks.*
- *Prohibit spearfishing in offshore waters within 300 m of the 400 m section of Port Campbell National Park boundary west from Sturgess Point.*
- *Monitor locations and levels of spear fishing, and liaise with NRE on appropriate controls.*

6.3.14 Swimming and surfing

Most of the beaches in the Parks are unsuitable for swimming. However, people swim at a few sheltered locations such as Loch Ard Gorge, Port Campbell Bay, Peterborough, Bay of Martyrs and Childers Cove, and the estuaries of the Gellibrand River and Curdies Inlet adjacent to the Parks.

Surfing is popular at many locations, but particularly at Clifton Beach, Gibsons Steps, 'The Point' (Point Sturgess), Halladale Point and Two Mile Bay. In some locations, in both Parks, surfers contribute to management problems associated with dogs and informal coastal access tracks (sections 6.3.8 and 6.3.12).

Surfers and spectators accessing cliff tops and other vantage points to assess surf conditions or watch surfers have damaged vegetation and Aboriginal sites and caused erosion at a number of locations, including Two Mile Bay and Flaxmans Hill. Surfers and the Friends of the Bay of Islands are assisting Park staff to construct viewing areas and other visitor

facilities near Halladale Point and Flaxmans Hill to reduce these impacts.

Organised surfing events have been held at ‘The Point’ and Gibsons Steps but difficult access and confined parking make management of spectators difficult. Other sites where competitions have been proposed include Two Mile Bay and Halladale Point. At both locations sensitive natural values and archaeological sites within the Parks could easily be damaged by spectators.

Aim

- Provide access for swimming and surfing in the Parks consistent with protecting park values.

Management strategies

- *Continue to permit and maintain access for swimming and surfing in accordance with tables 7 and 8.*
- *Provide access and viewing facilities for surfers and small numbers of spectators at suitable vantage points at popular surfing locations. Ensure that access within the Special Protection Areas is closely monitored and managed.*
- *Educate and encourage surfers and spectators to protect sensitive park values by remaining on formal access tracks and within viewing areas.*
- *Permit organised surfing events to be held where they comply with Parks Victoria guidelines and do not threaten the Parks’ natural values. Do not permit events at sites where crowds could have a detrimental impact on park values and the safety of visitors and other users of the Great Ocean Road.*

6.3.15 Hang gliding

Hang gliders launch from the cliff at the end of Mathiesons Road in Bay of Islands Coastal Park, and land on private property abutting the Park. Because of the narrowness of the Park and the nature of its terrain and vegetation, there are no suitable landing sites that are safe

for both fliers and other Park visitors. Hang gliding is an infrequent activity and the impact on the area is presently low.

There are no sites suitable for launching or landing hang gliders in Port Campbell National Park.

Aim

- Provide an opportunity for hang gliding in Bay of Islands Coastal Park while minimising environmental impact and conflict with other Park visitors.

Management strategies

- *Set aside an area at the end of Mathiesons Road for launching hang gliders, subject to the Victorian Hang Gliding and Paragliding Association arranging landing rights on adjacent or nearby lands.*
- *In conjunction with the Victorian Hang Gliding and Paragliding Association, monitor the safety of hang gliding activities in Bay of Islands Coastal Park.*
- *Monitor hang glider and other visitor use in the Mathiesons Road area. If necessary, permit hang gliding only outside peak visitor periods.*
- *Monitor hang gliding to ensure that there are no adverse impacts on the natural values of the launch area or the adjacent Special Protection Area.*
- *Do not permit hang gliders to land in the Parks, except in emergency situations.*

6.4 Private tourism operations

The Parks have an important role to play in the provision of commercial tourism opportunities for the region and for Great Ocean Road tours. In particular, the Parks offer prime opportunities for nature-based and cultural tourism.

The visitors attracted to the Parks benefit accommodation, restaurant, take-away food, handicraft and souvenir businesses at Port Campbell, Princetown and Peterborough. Four wheel drive, boat and helicopter operators in

the area also benefit from the visitors attracted to the Parks.

Activities currently offered by commercial operators mainly focus on vehicle tours, sight seeing and short walks. The provision of the summer interpretation program by private operators warrants further investigation (section 6.3.2).

A wider diversity of experiences will increase the duration of visits to the area, thereby increasing opportunities for businesses in the surrounding area.

Well-organised tour groups can help interpret park values and minimise impacts. A co-ordinated effort between tour operators and park management can result in the provision of high quality services and ensure that park values are protected.

Often the car parks at key visitor sites in the Parks, such as Twelve Apostles and Loch Ard Gorge, are full of cars and there is nowhere to park buses.

The development of sensitively designed and located additional accommodation on private property adjacent to the Parks to cater for walkers on the Great Ocean Walk would create an opportunity to further integrate recreation in the Parks with regional tourism (section 6.3.8).

Aims

- Provide opportunities for commercial tourism operations, where consistent with protecting park values and improving the quality and range of recreational experiences in the Parks.
- Ensure that private users are not disadvantaged, by establishing a balance between private and commercial use of the Parks.

Management strategies

- *Liaise with local tourism bodies to increase awareness of the Parks and to co-ordinate use by touring groups.*
- *Extend the range of guided activities to be offered to visitors.*

- *Require commercial permit holders to record and present sufficient information about their operations to allow monitoring of the activity.*
- *Encourage commercial operators to assist in the protection of park values and provide appropriate, accurate and quality interpretative information.*
- *Ensure that all commercial tour operators working in the Park are licensed in accordance with the National Parks Act, and trained in nature-based and/or cultural interpretation.*
- *Encourage coach tour operators to visit the Parks at times of low use by other visitors.*

6.5 Public safety

The climate, geomorphology and coastline of the Parks present inherent dangers and risks to Park visitors. Areas of greater remoteness and limited access, such as various locations within Bay of Islands Coastal Park, can increase visitors' vulnerability.

The rough seas of the coastline are hazardous, and the high, steep and active cliff structures are inherently unstable and subject to collapse (section 4.1). The possibility of surface subsidence into limestone caves poses a similar risk.

Visitors risk slipping near cliffs with an abrupt edge or with a convex upper slope over a vertical face. A clay layer that becomes slick when wet occurs at the cliff top in many places, and small ironstone pellets contained in the clay form slippery, gravelly pavements when exposed by surface erosion.

At places where a low water level exposes a narrow beach, there is the risk of visitors becoming isolated by an approaching tide or by strong waves. The cliffs are very difficult to scale because of their steep profile, and they often have an undercut base. The SES uses the Parks to undertake cliff top training exercises (section 8.1.3).

Most of the historic steps in the Parks (with the exception of Gibsons Steps) are severely eroded. As they are often slippery and dangerous after rain, they have been closed to the public. Some steps lead to rock platforms by the sea where high waves are a hazard for the unwary. Steps at some major visitor sites have been rebuilt since the Parks were first proclaimed.

Vehicular traffic can pose a threat to visitor safety at times and sites where vehicular movements and visitors concentrate (section 8.2.1).

Wildfire is a potential hazard during drier times of the year.

Aims

- Promote public safety in the use of the Parks.
- Minimise exposure of visitors to the hazards associated with cliff failure or land subsidence.
- Minimise the possibility of visitors becoming isolated at the cliff base as a result of rising tides or increase in wave action.
- Ensure that natural hazards are not increased by built or other artificial structures.

Management strategies

- *Manage the Parks in accordance with Parks Victoria risk mitigation and emergency management guidelines.*
- *Devise strategies to increase visitor awareness of public safety through the Interpretation and Education Plan (section 6.3.2).*
- *Ensure that Park staff are trained in, and have the ability to assist in, emergency situations.*
- *Examine the sites of cliff-based visitor facilities each spring. Close, and arrange for a geotechnical examination of, any site showing evidence of instability.*
- *Systematically record observations of instability, subsidence, the results of geotechnical examinations, cliff failures and surface subsidences.*
- *Regularly review the locations of all visitor management facilities, including roads and tracks, in the context of coastal dynamics and hazards.*
- *Determine appropriate setbacks from cliff edges for all future coastal facilities.*

7 COMMUNITY AWARENESS AND INVOLVEMENT

7.1 Friends and volunteers

Friends and volunteers are very important assets, fostering community support for the Parks. Through their long-term interest, many friends and volunteers are able to provide important information on past uses and change in the Parks.

Bay of Islands Coastal Park is supported by the Friends of the Bay of Islands, and Port Campbell National Park by a Consultative Group. Both groups make valuable contributions towards protection, conservation, maintenance and development of the Parks.

Port Campbell National Park has received some assistance with revegetation works from the Australian Trust for Conservation Volunteers and other local environmental groups. Other interested groups, such as Warrnambool Field Naturalists Club, Port Campbell Environment Group and Timboon Field Naturalists Club, have had a long history of involvement with the Parks, and make valuable contributions to park management projects. Interested volunteers can make valuable contributions to park management activities, and their assistance is encouraged.

Aim

- Actively encourage volunteer involvement in managing the Parks.

Management strategies

- *Continue to support the Friends of the Bay of Islands.*
- *Encourage the formation of, and support, a Friends group for Port Campbell National Park.*
- *Develop and evaluate a long-term strategy which incorporates the skills and the interests of volunteer groups in park management activities (e.g. conservation and rehabilitation activities). Ensure that groups have input into the strategy.*

- *Encourage volunteer groups to assist in weed management, regeneration, monitoring and conservation programs.*
- *Encourage volunteer groups, in co-operation with Parks staff, to actively pursue alternative sources of funding for park projects, including sponsorship and Government grants.*
- *Liaise with local interest groups to collate and document their knowledge of significant species, communities and other features in the Parks.*

7.2 Community awareness and Park neighbours

Private property abuts the Parks along most of the inland boundaries. The Parks' neighbours are primarily involved in agriculture and some grazing. The properties adjoining the Parks are mostly large; smaller properties are concentrated around Port Campbell and Peterborough Townships.

The adjoining communities' main interests in the Parks relate to the management of fire and pest plants and animals, and the role of the Parks in attracting tourists into the area. The income of many local businesses depends to a greater or lesser extent on tourism in the area. Many local families also have strong historical and cultural links with the Parks. Park neighbours attracted by the natural coastal bush setting are interested in maintaining the Parks' undeveloped character. Many Park neighbours also have a keen interest in the long-term ecological integrity of the Parks.

The way in which neighbouring land is managed can have implications for the Parks, particularly in relation to the control of weeds (section 5.2), drainage and nutrient runoff. Likewise, sound management of fire and pest plants and animals within the Parks can help to minimise potential impacts on Park neighbours (sections 5.1 and 5.2). The Good Neighbour program, which is overseen by Catchment Management Authorities, is the basis for a

productive, co-operative relationship between Parks Victoria and Park neighbours.

In a number of areas adjacent to Bay of Islands Coastal Park, particularly in the Flaxmans Hill area, the natural occurrence of coastal dunes within the Park, combined with an increase and redirection of overland drainage in upstream catchments, has led to the formation of areas of inundation at the interface between Park and farmland. Cutting drainage lines through the Park's dune system to reduce the level of inundation would impact on the natural and scenic values of the Park.

The protection and enhancement of native vegetation by private landholders outside the Parks contributes to the maintenance of the Parks' natural and landscape values (sections 4.3, 4.4 and 8.2.3). Remnant vegetation adjacent to the Parks augments the habitat available for flora and fauna within the Parks. Habitat linkages, on private property and roadsides, to other areas of native vegetation in the Parks' hinterland also help ensure the long-term survival of the Parks' fauna species (section 4.3).

The Parks are thin lineal strips, threatened by the erosive forces of the sea on one side (section 4.1) and impacts from activities on adjacent land on the other. Almost all native vegetation in areas bordering the Parks has long been cleared and few linkages remain to other areas of indigenous vegetation in the region.

In co-operation with adjacent landholders, the Parks' widths could be effectively increased through the establishment of native vegetation adjacent to the Parks. The development of native vegetation buffers could be promoted through a variety of incentives and partnership arrangements with individual landholders.

Aims

- Increase public awareness of management activities undertaken in the Parks.
- Encourage conservation and sound land management practices on private land adjoining the Parks.

- Promote a positive image of the Parks which enhances appreciation of their contribution to the community.
- Maintain the long-term integrity of the Parks by expanding their effective widths in strategically important areas.
- Promote co-operation and good working relations with Park neighbours.

Management strategies

- *Maintain and improve liaison with local community groups and land owners and, as appropriate, involve them in co-operative programs in the Parks.*
- *Apply, and encourage the application of, the Good Neighbour Policy to management issues on or near the boundaries of the Parks.*
- *Encourage adjacent and nearby land owners to re-establish and protect remnant native vegetation (e.g. by the application of voluntary conservation covenants and involvement in the Land for Wildlife scheme).*
- *Promote the establishment and maintenance of habitat linkages to other areas of remnant vegetation in the Parks' hinterland.*
- *Liaise with local communities to promote an understanding of park values and resolve conflicts with adjacent landholders, particularly regarding threats to the Parks from adjacent land management practices.*
- *Identify areas where nutrient runoff from adjacent properties may be entering the Parks, and liaise with relevant landholders to reduce.*
- *Do not permit drainage lines to be cut through the Parks to drain inundation areas on adjacent properties. Liaise with affected landholders to identify alternative solutions.*
- *Liaise with Park neighbours to seek co-operative arrangements to establish and*

maintain native vegetation buffers adjacent to the Parks to increase the effective widths of the Parks.

- *Work co-operatively with Park neighbours to co-ordinate management of cross-boundary issues.*

7.3 Schools and other education

The Parks are an excellent resource for schools, youth and other groups. The entire coastline illustrates dynamic natural processes and constitutes an extensive outdoor classroom. Glenample Homestead, Loch Ard Gorge and other sites bring vividly to life aspects of the European history of the area. Ranger talks and audio visual presentations are offered to schools and other groups at Port Campbell National Park Visitor Information Centre.

The Education Zone in Port Campbell National Park comprises the Education Area recommended by the LCC (1978) (figure 2). The area offers opportunities for school and other groups to undertake natural history studies. It will be used to highlight management issues and practices, give access to a range of habitats within a relatively small area, and provide an area for certain activities such as the marking of plots that would not normally be allowed without a permit.

Approximately 50 school groups visit the Parks each year, but this number could be significantly increased with better educational material.

A large campsite, occupying approximately 5.3 ha, abuts the Sherbrook River, about 100 m north of the Great Ocean Road, in Port Campbell National Park. The site is leased to the Girl Guides Association of Victoria (GGAV), which has right of removal of the buildings on the site. A house and bungalow can provide accommodation for 22 visitors and a further 60 visitors can camp in the clearing surrounding the buildings. The camp is occupied about one-third of the time, mostly by Guide groups.

The camp is well located as a base for environmental, educational and recreational activities, as it is close to the Education Zone in

Port Campbell National Park. It is used by other organisations including school, church and sporting groups from widely scattered locations in Victoria. All groups are charged a small hire fee by the GGAV. More groups might use the camp if they knew of its existence, as it provides inexpensive accommodation in a relatively natural setting, is easily accessible and is safe for young people.

Other accommodation facilities suitable for educational groups in the vicinity of the Parks include Coorimungle Camp and Kangarooobie at Princetown, and the Brucknell Scout Camp north of Bay of Islands Coastal Park.

Aims

- Increase use of the Parks as an educational resource for schools and other groups.
- Increase use of the Parks' existing facilities by educational groups.

Management strategies

- *Maintain and promote use of the Education Zone by educational groups in Port Campbell National Park.*
- *Widely promote the Parks as an environmental education resource.*
- *Prepare a comprehensive Education Kit for the Parks.*
- *Foster links with educational establishments and providers of group accommodation in the adjacent area.*
- *Continue to facilitate the provision of interpretative talks to organised groups.*
- *Liaise with the GGAV to:*
 - *increase use of the Sherbrook River camp by both guides and other groups;*
 - *maintain the camp to an adequate standard;*
 - *maintain adequate fire prevention and protection measures;*
 - *control weeds within the leased area;*
 - *ensure that runoff and effluents from the camp do not affect water quality in the Sherbrook River;*

- *ensure that riparian and aquatic vegetation along the Sherbrook River, adjacent to the camp, is protected.*

8 OTHER ISSUES

8.1 Authorised uses

8.1.1 Public utilities

Along the Great Ocean Road, several sections of overhead powerlines owned by Powercor are situated within the Parks. These have a considerable impact on the gently rolling landscape of the Parks (section 4.4).

Within Port Campbell National Park, South West Water maintains a bore, pump and cooling facility north of the Port Campbell National Park Visitor Information Centre, a water tower east of Port Campbell Township and pipelines in various sections of the Park. South West Water periodically clears vegetation from above sections of pipelines.

A new Port Campbell water storage facility is under construction on a knoll on Crown land east of the Port Campbell Township and north of the Great Ocean Road. The existing Port Campbell water tower, located in National Park to the south, will be demolished soon and the site restored. The Peterborough Tower located adjacent to Bay of Islands Coastal Parks is to be demolished in the near future.

An underground fibre optic cable owned by Telstra runs parallel with the Great Ocean Road within Port Campbell National Park, in Port Campbell Township.

A police station garage and driveway and a police residence are situated in Port Campbell National Park abutting the Great Ocean Road in Port Campbell Township. In 1983, the Governor-in-Council approved an Order under Section 27(2) of the National Parks Act consenting to the then Department of Property and Services constructing the police residence on land in the Park abutting the existing Police Purposes Reserve, and to the then Department of Police and Emergency Services occupying and using the block for police purposes. The house was built in 1984.

In 1983, the then Minister for Conservation agreed to seek legislation to enable excision of the land subject to the Order from the National Park, and the Department of Property and

Services agreed to revoke the reservation of the rear portion of the existing Police Purposes Reserve for inclusion in the Park.

Implementation of these actions awaits survey, to be carried by the Department of Infrastructure. Amendment of the Park boundary would be included in amending legislation to be prepared after approval of this Plan.

Aims

- Minimise the impact of public utilities on park values.
- Ensure appropriate use and licensing of all existing and future public utilities.

Management strategies

- *In accordance with Parks Victoria guidelines, ensure that new and existing public utilities and associated maintenance works are covered by a Section 27 consent which:*
 - *authorises access as necessary;*
 - *includes conditions necessary to protect park values.*
- *Liaise with utility owners to ensure that management and maintenance activities have minimal impact on park values.*
- *Seek excision from the Park of the land referred to in the Order-in-Council of 12 July 1983 and used for police purposes, and addition to the Park of the rear portion of the Police Purposes Reserve, which is not required for police purposes.*
- *Liaise with Powercor to minimise the visual impact of powerlines on the landscape of the Parks and the Great Ocean Road by undergrounding the most visually intrusive sections as practicable.*

8.1.2 Other occupancies

The Port Campbell Surf Life Saving Club (SLSC) occupies a clubhouse on the Port Campbell foreshore, within Port Campbell

National Park, under a tenancy granted under Section 32A of the National Parks Act. The SLSC wishes to extend the existing clubhouse to provide improved facilities.

The SLSC also retains radio communication aeriels on the South West Water tower located in the National Park east of Port Campbell which is to be demolished soon (section 8.1.1). The SLSC will need to re-erect the aeriels at approximately the same height and position to maintain essential communications when the water tower is removed. Effective alternative communication technology is not reasonably available at present.

The Girl Guides Association of Victoria leases a campsite adjacent to the Sherbrook River, north of the Great Ocean Road (section 7.3).

A number of properties adjoining the Parks gain access along tracks through the Parks. These include:

- properties north of Sparks Gully Gravel Reserve and east of Sharps Road;
- C/A 117a, Parish of Narrawaturk (near Crofts Bay);
- properties opposite Crofts Bay (east);
- properties opposite Crofts Bay (west);
- properties opposite Childers Cove and Murnanes Bay;
- holiday shacks near Childers Cove.

BHP Petroleum is investigating development of the Minerva gas field 12 km offshore from Port Campbell. Two well-head options are being considered: a sea floor option and a mono-tower option. A sea floor well-head would be entirely beneath the surface and invisible from the Parks. A mono-tower would protrude 30 m above the sea surface and be visible from most parts of Port Campbell National Park (including key visitor destinations such as the Twelve Apostles) and many areas of Bay of Islands Coastal Park.

Three routes are being considered for a pipeline to bring the gas ashore. All these routes pass through Port Campbell National Park and would have varying degrees of impact on the Parks. BHP activities in the Park associated

with the Minerva gas field will be subject to the *Pipelines Act 1967* (Vic.) and not a Section 27 consent.

Aims

- Ensure appropriate use and licensing of facilities occupying parts of the Parks.
- Minimise the impacts of these occupations on park values.
- Minimise use of the Parks for private access.
- Minimise impacts of the proposed development of the Minerva gas field on park values.

Management strategies

- *Allow a Port Campbell SLSC clubhouse occupancy to continue. If relocation or extension is proposed, investigate options which include public toilets within the clubhouse building.*
- *Liaise with Corangamite Shire to provide an easement for private access east of Sharps Road if the Great Ocean Road is realigned away from the coast near Lace Curtains (section 8.2.1).*
- *Opposite Crofts Bay (east), liaise with Moyne Shire and the affected landholder to seek to relocate the private property access road to the existing easement.*
- *Liaise with Moyne Shire to provide an easement, if the Great Ocean Road is realigned away from the coast, to give private property access opposite Crofts Bay (west).*
- *Continue to allow other existing practical access to abutting freehold land, unless there is alternative access outside the Parks or until the Shire provides legal access. Ensure that land owners maintain tracks at a standard consistent with park values. Assist with maintenance only where necessary for park management.*
- *If development of the Minerva gas field proceeds, liaise with BHP Petroleum and*

relevant statutory authorities, as part of the joint State and Commonwealth Environmental Impact Assessment, to ensure minimum impact upon park values.

8.1.3 Other uses

The Parks are used extensively for commercial filming and photography, applications ranging from use of sites as settings for feature films to still photography. The demands of individual photographers and producers vary greatly. Some photographers and film teams arrive in the Parks with little or no notice and unrealistic expectations of access to sites.

Given the high level of visitor use and sensitive conservation values of the Parks, not all requirements of some commercial photographers can be met.

Considerable time is spent by Park staff in supervising commercial photographers to protect park values and the experiences of visitors. Both site and supervision fees are charged in accordance with Parks Victoria guidelines.

State Emergency Service (SES) personnel undertake cliff top training exercises in the Parks at locations selected to ensure that impacts on park values and visitors are minimal.

There are currently no gravel extraction pits in the Parks, although gravel has been extracted at a number of sites in the past. Bee hives are kept close to the Park boundaries on several adjacent properties, but there are no apiary sites in the Parks. The Parks are not used for Defence Force training. Because of the Parks' narrow widths, intensive recreational use and high conservation values, the above activities are not considered appropriate.

Aim

- Minimise the impact of other uses on park values.

Management strategies

- *Continue to permit commercial photography and filming in the Parks in accordance with Parks Victoria guidelines.*

- *Widely distribute guidelines for commercial photographers and film producers to advise them of park values and restrictions on filming.*
- *Continue to permit SES personnel to undertake cliff top training exercises in the Parks, in accordance with Parks Victoria guidelines and the directions of Park managers.*
- *Do not permit the establishment of apiary sites or gravel extraction pits in the Parks.*
- *Do not permit Defence Force training in the Parks.*

8.2 Boundaries and adjacent uses

8.2.1 Great Ocean Road and other roads

VicRoads is responsible for the Great Ocean Road. Moyne Shire is responsible for managing the majority of roads and tracks that provide public access to Bay of Islands Coastal Park, west of Boat Bay. Corangamite Shire manages roads providing public access to sections of Port Campbell National Park away from the Great Ocean Road. Some sections of the Great Ocean Road and other roads are not located on the gazetted easements. VicRoads has prepared a Draft Roadside Management Plan for the Great Ocean Road, including the sections through the Parks, to assist with environmental aspects of management of the road (VicRoads, undated).

The Great Ocean Road traverses Port Campbell National Park and the eastern section of Bay of Islands Coastal Park, giving excellent access to extensive sections of the Parks for visitors. However, the Road also has diverse and widespread negative impacts on the Parks and the park experience. These impacts include:

- incremental disturbance and attrition of natural values from realignments and gravel stock sites;
- traffic hazards for fauna and pedestrians;
- hazards for turning vehicles entering and leaving the Parks;

- reduction in visual amenity resulting from road works, litter, stone storages, disused alignments and gravel pits.

Sections of the Great Ocean Road have been relocated on many occasions to avoid undercutting by the ocean. VicRoads currently has proposals for relocation of the Great Ocean Road at the Lace Curtains and the eastern entry to Port Campbell Township. VicRoads continually reviews the sub-surface conditions along this section of coastline in order to reduce the risk of a major slip or subsidence occurring, although they do not anticipate any further requirements for realignments in the foreseeable future.

Over time, the gradual movement of the Great Ocean Road inland will provide opportunities to acquire land cut off between Port Campbell National Park and the Great Ocean Road.

Some tourism organisations are concerned that the distance of the Great Ocean Road from the coast between the Bay of Islands and Warrnambool detracts from the tourist experience and reduces visitation to the Parks. Proposals have been put forward over the years for the Great Ocean Road to be extended along an alignment that more closely follows the coastline in this area. Such a development could detrimentally impact on the natural values of Bay of Islands Coastal Park, inappropriately increase visitation in sensitive and semi-remote areas, and reduce the sense of isolation which characterises the section of the Bay of Islands Coastal Park west of Boat Bay. The Victorian Coastal Strategy (NRE 1997) states that it is not desirable to create new roads along cliff tops or primary sand dunes.

There are relatively high numbers of kangaroos in the Murphies area at night, which pose risks to vehicles and their occupants and significant potential impacts on local kangaroo populations. VicRoads, in consultation with Parks staff, has placed special reflectors on the guide posts along the road edge that reflect the light of oncoming cars through 90° so that it shines into the adjacent habitat, thus alerting fauna to the presence of vehicles. No monitoring of the program has been carried out, but anecdotal evidence suggests that it has been effective.

A VicRoads picnic site located north of the Great Ocean Road alignment at Crofts Bay is poorly located and presents a fire risk to the Park (section 5.1). A second VicRoads picnic area, located on an old alignment of the Great Ocean Road, on the western side of the Sherbrook River in Port Campbell National Park, was recently closed because of its inappropriate location. The site is still accessible via the former Great Ocean Road alignment. Fire lighting and weeds on the site threaten the Park.

Aims

- Minimise the impacts of the Great Ocean Road on the Parks.
- Ensure that future realignment and relocation of the Great Ocean Road are compatible with park objectives.

Management strategies

- *Liaise with VicRoads, and Moyne and Corangamite Shires, to develop protocols on issues of joint concern regarding all aspects of management of roads and road reserves encompassed within the Parks, including traffic and pedestrian management, weed and litter control, signage, roadside vegetation and road maintenance material storage sites.*
- *Liaise with Moyne and Corangamite Shires to ensure a co-operative approach to maintenance of park access roads to minimise impacts of road maintenance.*
- *Maintain the roadside reflector program at the Murphies in conjunction with VicRoads, and encourage its expansion to the Sherbrook area and any other areas where road kills are assessed to be high. If installed at other sites, conduct before and after studies to monitor success.*
- *Liaise with VicRoads to:*
 - *close and rehabilitate the Crofts Bay picnic area;*
 - *rehabilitate the former Sherbrook River picnic area and access road.*

- *Seek rehabilitation and incorporation into the Parks of sections of gazetted road easements that are no longer required for roads, in consultation with VicRoads and Moyne and Corangamite Shires.*
- *Liase with VicRoads, the Moyne and Corangamite Shires and appropriate stakeholders in relation to proposals to realign the Great Ocean Road, to ensure that park values are protected.*
- *Seek the co-operation of VicRoads in ensuring that future realignments of the Great Ocean Road are located north of the Parks' boundaries where practicable.*
- *Represent the need to protect the natural and cultural values of Bay of Islands Coastal Park, particularly the opportunities to experience a remote coastal setting, in forums considering proposals for extension of the Great Ocean Road along the coast west of Boat Bay.*
- *Reactivate the Great Ocean Road Princetown–Peterborough Joint VicRoads–NRE Working Party as a VicRoads–PV Working Party for the Princetown to Boat Bay section of the Great Ocean Road.*
- *Liase with VicRoads to finalise the VicRoads Great Ocean Road Management Plan, and seek to ensure that it appropriately addresses issues relevant to the Parks.*

8.2.2 Boundaries

The incremental threats from both the sea (section 4.1) and adjacent land (sections 8.2 and 8.2.3) threaten the long-term integrity and viability of these narrow lineal Parks.

Areas where the Parks are already critically narrow include much of Bay of Islands Coastal Park, especially Boat Bay and Stanhopes Bay, and the Clifton Beach and Gibsons Steps sections of Port Campbell National Park.

In the long-term it will be necessary to counter these threats by encouraging the establishment of native vegetation buffers alongside certain sections of the Parks' inland boundaries.

Opportunities that arise to acquire land of strategic importance to the Parks should be taken for revegetation or for visitor facilities that would require the clearing of highly valuable native vegetation if constructed in the Parks.

Some sections of the Park boundary abutting private property are poorly fenced, allowing stock to enter the Parks.

Fences along the boundary of Port Campbell National Park adjacent to allotments 6–10 in the Township of Princetown appear to be incorrectly located. The Park boundary in this area needs to be surveyed.

Various parcels of Crown land and reserves exist within or adjacent to the boundaries of the Parks. These include Curdies Inlet, the Peterborough Foreshore Reserve, a Cemetery Reserve at Loch Ard Gorge, a Scenic Reserve overlooking Port Campbell Bay, a Public Park Reserve and Public Purposes Reserve on Port Campbell Point, a Water Reserve (and Crown land) east of Port Campbell north of the Great Ocean Road alignment, a Quarry Reserve (now rehabilitated) east of Port Campbell, a rifle range at Two Mile Bay, a Flora Reserve and Recreation Reserve at Princetown, and numerous sections of road reserves. The historic, conservation and recreational values of many of these public lands complement those of the Parks.

The Land Conservation Council Final Recommendations for the Corangamite Study Area (LCC 1978) indicated that the Water Reserve, the old coastal road reserve, unoccupied Crown land between the old coastal road reserve and the Great Ocean Road Reserve, and the Public Park Reserve and Public Purposes Reserve, should all be added to the Park.

The Loch Ard Public Cemetery Reserve (1.75 ha), surrounded by Port Campbell National Park and close to Loch Ard Gorge, is managed by Parks Victoria. The cemetery contains a small number of graves, mostly of former residents of the Princetown area. Although the cemetery was first reserved in 1889, it also contains graves of a number of victims of the *Loch Ard* disaster, which

occurred 11 years earlier in 1878. A number of the graves are marked and most are located along the reserve's eastern boundary.

The cemetery has considerable historic value. The reserve is generally covered in open heathland and supports a diverse small mammal population including Swamp Antechinus (section 4.3).

The site of Clifton Holiday House, built in 1869 shortly after Glenample Homestead for Dr Curdie and his family, the first permanent settlers in the Shire, is in the sand dunes east of Gibsons Steps on private land that is cleared and grazed.

Clifton quarry is to the north-west of the house, on the north side of the track which was once the old Princetown Road. Now closed, the quarry was the source of stone supplied for construction of Glenample and Clifton. The sites have historic value because of their association with Dr Curdie and Glenample.

The Sparkes Gully Gravel Reserve (13 ha), almost surrounded by Port Campbell National Park, is no longer used and the site has been rehabilitated with indigenous vegetation by Park staff. Some further rehabilitation and weed control are needed.

Port Campbell Rifle Range, an occupancy on a strip of Crown land adjacent to the Great Ocean Road less than 2 km west of Port Campbell Township, is also almost surrounded by Port Campbell National Park. The rifle club was established in the mid 1880s during a period of Russian invasion paranoia. The range contains a number of significant flora species.

A proposed amendment L19 to the City of Warrnambool Planning Scheme seeks to locate a rifle range, including rifle abutments, on freehold land immediately adjacent to the western end of Bay of Islands Coastal Park, near Lake Gilliear. The proposal involves relocating the existing Port Campbell Rifle Range. Although the impacts of the development of a single rifle range at the Lake Gilliear site are of concern, Parks Victoria recognises an overall benefit in the closure of the Port Campbell range.

One of only two Common Bent-wing Bat maternity caves in Victoria is near Lake Gilliear on private land adjacent to the western end of Bay of Islands Coastal Park. The cave is considered by many bat biologists to be critical to the conservation of the species in Victoria and it is a site of State biological significance (LCC 1993).

The bats are sensitive to disturbance by people, especially during the summer breeding period. The cave is regularly accessed by people. Protection and management of the site would be facilitated, and park biodiversity increased, by incorporating the site into Bay of Islands Coastal Park.

The Port Campbell Township has an urbanised character. Certain sections of Port Campbell National Park within the township, including the foreshore, caravan park and a site occupied by a police station and garage (section 8.1.1), are used and managed very differently from other parts of the National Park. The foreshore includes the surf life saving clubhouse, and facilities such as the toilet block which are maintained by Parks Victoria although traditionally the responsibility of the local council. Parks Victoria considers retention of the foreshore and caravan park within the National Park is inappropriate, and the National Parks Advisory Council supports the excision of these areas from the National Park.

Aims

- Manage Park boundaries to protect park values.
- Give due consideration to opportunities that arise to improve the integrity of the Parks and their boundaries through acquisition and addition of land to the Parks, and Park boundary adjustments.
- Seek the excision of areas within or adjacent to Port Campbell Township which have little or no natural or cultural value and are for a use that is more appropriately managed under legislation other than the National Parks Act.

Management strategies

- *Identify areas of adjacent land which are important to the long-term integrity of the*

Parks and seek their acquisition (if they become available) and incorporation into the Parks.

- *Recognise land isolated south of the Great Ocean Road by realignments, including old alignments, other road easements and any private land, as important to the long-term integrity of the Parks, and seek its revegetation, acquisition and incorporation into the Parks as opportunities arise.*
- *Liaise with adjoining land owners to ensure that boundary fencing is well maintained in order to exclude stock.*
- *Seek co-operation of the land owners in the survey of the joint boundary of allotments 6 – 10 in the Township of Princetown and Port Campbell National Park, and if necessary move the existing boundary fences.*
- *If the Port Campbell Rifle Range is closed, seek to incorporate the area into Port Campbell National Park. Seek to ensure that populations of significant species are maintained through appropriate management.*
- *Encourage the establishment of a rifle range at the Lake Gilleear site, subject to:*
 - *closure of the Port Campbell Rifle Range;*
 - *undertakings from the proponents to construct walking tracks to, and along, coastal locations in Bay of Islands Coastal Park;*
 - *an assessment of the impacts of the development on environmental values, particularly the continued suitability of the bat cave as a maternity site.*
- *Manage the area containing identifiable graves within Loch Ard Public Cemetery as a historic site in accordance with guidelines as agreed with the Department of Human Services and the Burra Charter of Australia ICOMOS.*
- *Seek to acquire and incorporate into Bay of Islands Coastal Park the site of the Lake Gilleear bat cave. If the site is incorporated:*
 - *implement necessary management to protect the bats;*
 - *do not construct walking tracks in the vicinity of the cave.*
- *Seek to excise from Port Campbell National Park:*
 - *the Port Campbell foreshore;*
 - *the Port Campbell caravan park.*
- *Identify, prioritise and consider for action possible public land additions and boundary adjustments that would improve the integrity of Port Campbell National Park, including,:*
 - *Public Purposes Reserve and Public Park Reserve on Port Campbell Point;*
 - *Water Reserve (and Crown land) east of Port Campbell north of the Great Ocean Road alignment;*
 - *Gravel Reserve at Sparkes Gully;*
 - *the small, undeveloped areas of public land between the Great Ocean Road and the Park within the Township of Port Campbell, west of the Port Campbell Creek, including allotments 2 and 3;*
 - *Loch Ard Public Cemetery.*
- *Request assessment of the significance of the Clifton Holiday House Site and Clifton Quarry. On the basis of this assessment, their potential for interpretation and the best method for conserving these sites, determine whether to seek acquisition of the property for inclusion in the Park.*
- *If acquired, prepare a strategy for the management, interpretation and monitoring of the Clifton Holiday House and Quarry sites.*

8.2.3 Adjacent land use

The majority of the private land adjacent to the Parks is cleared for grazing and dairy production. There is very little remnant vegetation on adjacent private property which complements that in the Park. Inappropriate development of the land has the potential to impact on the Parks' ecological processes and landscape (section 4.4).

Residential development around the Parks is concentrated in Port Campbell and Peterborough, although the Township of Princetown has considerable potential for future expansion. A number of residences and tourism businesses occur on blocks along the Great Ocean Road boundary, some of which impinge on the visual amenity of the Park (section 4.4).

The Corangamite Shire and Moyne Shire planning schemes are currently being reformed to accord with the new Victoria Planning Provisions.

The Victorian Coastal Strategy guides protection and development of the State's coastal areas, including the Parks and adjacent lands (NRE 1997). The strategy will be incorporated into shire planning schemes.

Aims

- Minimise conflicts between park values and surrounding land use.
- Co-operate with landholders adjacent to the Parks in the protection of both private property and public land from fire, pests, visual threats, erosion and other hazards.
- Encourage, and assist as appropriate, land owners to develop and protect natural and cultural values in the vicinity of Park boundaries.

Management strategies

- *Liaise with the Moyne and Corangamite Shires to minimise impacts on the Parks from developments on adjacent land.*
- *Liaise with Moyne and Corangamite Shires in the preparation of new planning schemes and amendments to minimise adverse impacts of developments on park values.*

Seek to incorporate the following aims into planning schemes for areas adjacent to the Parks:

- *protect and conserve the natural and cultural values of the Parks;*
- *protect and enhance the tourism values of the area, particularly those of the Parks.*
- *Develop and maintain contact details of landholders adjacent to the Parks and ensure that they are kept aware of park management issues relevant to their landholding.*
- *Liaise with adjacent land managers to address issues that may affect the Parks or adjoining land.*

8.2.4 Aircraft overflying

There has been a steady increase in the number of low-flying sight-seeing helicopter flights over the Parks over recent years. Three commercial operators presently provide flights originating outside the Parks: two helicopter operators in the Loch Ard Gorge/Twelve Apostles precinct, and a fixed-wing operator at Peterborough. These flights are not subject to direct control by Parks Victoria, but Fly Neighbourly agreements have been negotiated with the two helicopter operators. Both helicopter operators also require a planning permit, which incorporates conditions to protect park values. Many scenic flights operate from other locations along the Great Ocean Road, including Apollo Bay and Warrnambool. Low-level military training flights are also conducted along the Parks' coastline.

The noise and visual intrusion of aircraft flights can be significant, reducing the quality of other visitors' experiences and potentially adversely affecting wildlife. Many complaints have been received from neighbours and other stakeholders at the intrusion of aircraft noise in the vicinity of the Parks. Given the linear character and high visual appeal of the Parks, the number of flights could increase in the future. Airservices Australia (the Federal body responsible for the control of air space) can designate a Fly Neighbourly Advice Area

within which flying restrictions may be determined. Adherence to the restrictions by pilots is voluntary, but compliance is generally good.

Aim

- Minimise the noise and visual impacts of aircraft on visitors and wildlife.

Management strategies

- *Negotiate Fly Neighbourly agreements with aircraft operators who regularly conduct flights over the Park.*

- *Liaise with Airservices Australia to seek to have a Fly Neighbourly Advice Area introduced, including restrictions on flight altitudes near key visitor destinations and other sensitive sites.*
- *Monitor the frequency of flights, noise levels, and impacts of aircraft flying over the Parks on the experiences of other visitors and of fauna considered likely to be affected by aircraft noise.*

9 IMPLEMENTATION

A three-year rolling implementation program will be prepared for the Parks to ensure efficient implementation of this Plan. Priorities for management are identified in table 9 as an initial step in this process.

TABLE 9 PRIORITY MANAGEMENT STRATEGIES

MANAGEMENT STRATEGY	SECTION IN PLAN
Resource conservation	
Protect significant sites and species; undertake or encourage additional surveys where required.	4.1, 4.2, 4.3, 4.5
Map the vegetation of the western section of Bay of Islands Coastal Park.	4.2
Protect Clover Glycine, Metallic Sun-orchid and Little Penguin colonies.	4.2, 4.3
Control introduced predators in strategically important areas.	4.3, 5.2
Encourage fauna surveys.	4.3
Rehabilitate disturbed sites.	4.2, 5.3
Reduce adverse visual impacts and protect the Parks' natural landscapes.	4.4
Involve local Aboriginal communities in managing Aboriginal sites.	4.5
Develop a master plan for Glenample Homestead.	4.5
Park protection	
Develop integrated fire management programs for the Parks.	5.1
Develop and implement a pest management strategy.	5.2
Remove Coast Tea-tree and control other major invasive weed species.	5.2
Co-ordinate pest plant and animal control measures with those of adjoining landholders.	5.2, 7.2
Develop and implement an integrated environmental management plan.	4.6
The Park visit	
Promote the Parks' identity and tourism values.	6.2
Promote a spectrum of sites within the Parks.	6.2
Implement an Orientation Strategy and develop a detailed Interpretation and Education Plan.	6.3.1, 6.3.2
Encourage development of a major tourist centre.	6.3.4
Provide improved visitor facilities at key attractions.	6.3.5
Develop and maintain walking tracks.	6.3.8
Community awareness and involvement	
Support the Friends of Bay of Islands and encourage the formation of a Friends group for Port Campbell National Park.	7.1
Encourage adjacent and nearby land owners to re-establish and protect remnant native vegetation.	4.2, 4.3, 7.2
Maintain and improve liaison with the shires, local land owners and community groups.	7.2, 8.2.3

Table 9 (cont.)

MANAGEMENT STRATEGY	SECTION IN PLAN
Other issues	
Liaise with VicRoads to develop protocols regarding management of the Great Ocean Road.	8.2.1
Monitoring and research	
Monitor significant species and communities.	4.2, 4.3
Encourage research on the use of fire for ecological management, and the effects of fuel reduction burning.	5.1
Monitor critical changes to the natural environment and identify thresholds of acceptable environmental change.	4.6
Monitor visitor numbers and use.	6.1
Monitor, and if necessary control, the impacts of intertidal harvesting.	6.3.13
Monitor geological stability of coastal visitor sites.	6.5

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APPENDIX I SITES OF GEOLOGICAL AND GEOMORPHOLOGICAL SIGNIFICANCE

SITE	FEATURES
Childers Cove to Stanhope Bay	Excellent and accessible exposures of Port Campbell Limestone and Bridgewater Formation dune calcarenite. At Stanhope Bay there is a 5 m thick bed of quartz sand below the calcarenite. The Bay heads are shaped by marine erosion of collapse depressions in the limestone, and small sinkholes and other karst weathering features occur. Small sea cave. Cliff stacks and reefs.
Three Mile Beach	Long straight coastal sector where a thick capping of Bridgewater Formation overlies Port Campbell Limestone. A continuous beach and a backshore dune system with dunes extending part of the way up the cliff face. Stranded parabolic cliff top dunes. An emerged marine platform 3 to 4 m above present sea level at the eastern end.
Armstrong Creek to Flaxmans Hill	Former embayed sector now filled with an unusually wide zone of beach ridges. Transgressive dunes have been blown inland along the gullied mouth of Armstrong Creek. Good exposure of the unconformity between the Port Campbell Limestone and Bridgewater Formation.
Coast between Baileys Road and Dynons Road	Good examples of karst topography and its influence on coastline development. Along this sector there are a number of sinkholes containing lakes and the coast is crenulate with rounded embayment heads occupying former sinkholes. In many places there is a wide stripped zone at the cliff top exposing ironstone gravels.
Bay of Islands	Cusped embayments, complex cliff profiles and numerous rock stacks are excellent examples of cliffed coastline development and karst processes. High level Pleistocene sand deposits and abrasion platform are evidence of uplift.
*Massacre Bay	Good example of karst topography and its influence on coastline development.
*Peterborough Point (including Curdies River mouth, dunes east of mouth and offshore to Schomberg Rock)	Former outlet of Curdies River. Estuarine clays occur beneath dunes.
Crown of Thorns	Port Campbell Limestone is capped by red-brown clay and dune limestone. Large blocks of dune limestone show intricate weathering features.
The Grotto	Excellent example of cliff retreat intersecting several sinkholes leaving a deeply indented coastline. An arch has formed where coastal erosion has formed a cavern. This cave contains boulders apparently deposited at a higher sea level.
London Bridge	Former promontory with double arch. Inner span collapsed in 1990 providing an outstanding and well-documented example of a type of rapid coastal change. Adjacent coastline has large, intact columnar subsided blocks of limestone.
The Arch	Natural arch with a floor about 8 m above sea level resulting from exposure of a sinkhole by coastal erosion. Prominent exposure of red-brown clay overlying Port Campbell Limestone.

Appendix 1 (cont.)

SITE	FEATURES
Two Mile Bay	A line of bluffs 250 m inland are remnants of a cliffed coastline developed during a higher sea level about 100 000 years ago. Between the bluffs and the shoreline is a swampy lowland, a long sand ridge and an older high-level (emerged) shore platform. A modern shore platform, only partly exposed at low tide, extends seaward for over 400 m to water depths of 12 m. The geomorphology and the sediments at Two Mile Bay preserve evidence of longer term coastal evolution in a region where contemporary high energy processes has removed that evidence from most other places. This is the most extensively preserved assemblage of such features in the Parks.
*Beacon Steps	Exposure of Port Campbell Limestone containing harder nodular layers. Wide stripped cliff top zone.
Sentinel Rock and adjacent coast	Good example of a large cliff stack. Coast to the west was the site of a major slope failure in 1939.
Goudies Lookout	Twin long, narrow promontories of vertical cliffs with prominent ledges and undercut at the base. Very active marine erosion site.
Bakers Oven Rock	Site of cliff failure in storm in 1932. Small creek crosses cliff edge in hanging valley.
Sherbrook River mouth	Stream valley cut to sea level with dunefield at the mouth.
Rutledge Creek	Well-preserved fossil specimens of the crab <i>Ommatocarcinus corioensis</i> are found in the Port Campbell Limestone at this site.
Broken Head to Loch Ard Gorge	Deeply indented coastline with vertical cliffs, narrow promontories, gorges, elongated stacks, blowhole and sea caves with stalactites and stalagmites. Outstanding site with good examples of Tertiary geology and a variety of active coastal processes.
The Twelve Apostles	Series of high cliff stacks with vertical to overhanging cliffs. An outstanding and spectacular example of the processes of development of a high, active cliffed coastline in relatively soft rocks.
Gibson Steps and Gibson Beach	Cliff section shows contact between the Gellibrand Marl and the overlying Port Campbell Limestone. This is the type section locality of Gellibrand Marl. Several small faults occur in the rocks. Pleistocene dune limestone occurs at the top of the cliffs and water seeping through this limestone has deposited calcium carbonate flowstone curtains over the lower sectors of the cliff.
Clifton Beach to Point Ronald	Exposures of the gradational contact between the Clifton Formation and the overlying richly fossiliferous Gellibrand Marl. This is the type locality of the Clifton Formation and includes a clear exposure of a prominent nodule bed. Overlying the Gellibrand Marl are Pleistocene dune calcarenites with fossil soil horizons that are particularly well exposed at Point Ronald.

* Site may not be in, or may only partly be in, the Parks.

APPENDIX II THREATENED FLORA SPECIES

SCIENTIFIC NAME	COMMON NAME	STATUS	PCNP	BICP
<i>Baumea laxa</i>	Lax Twig-sedge	r	Y	
<i>Caladenia fragrantissima</i> ssp. <i>fragrantissima</i>	Scented Spider-orchid	Re	Y	
<i>Diuris palustris</i>	Swamp Diuris	v	Y	
<i>Exocarpus syrticola</i>	Coast Ballart	r	Y	Y
<i>Glycine latrobeana</i>	Clover Glycine	V v (FFG)	Y	Y
<i>Haloragis exalata</i>	Square Raspwort	V v	Y	
<i>Lasiopetalum schulzenii</i>	Drooping Velvet-bush	r		Y
<i>Logania ovata</i>	Oval-leaf Logania	r	Y	
<i>Orthrosanthus multiflorus</i>	Morning Flag	r	Y	
<i>Pneumatopteris pennigera</i>	Lime Fern	V v	Y	
<i>Pterostylis tenuissima</i>	Swamp Greenhood	V v	Y	
<i>Sarcocornia quinqueflora</i> ssp. <i>tasmanica</i>	Beaded Glasswort	e	Y	
<i>Stipa hemipogen</i>	Half-bearded Spear-grass	r		Y
<i>Thelymitra benthamiana</i>	Blotched Sun-orchid	r	Y	
<i>Thelymitra epipactoides</i>	Metallic Sun-orchid	E e (FFG)	Y	Y
<i>Triglochin minutissimum</i>	Tiny Arrow-grass	r	Y	

Status categories from Gullan et al. (1990):

E - endangered in Australia

V - vulnerable in Australia

R - rare in Australia

e - endangered in Victoria

v - vulnerable in Victoria

r - rare in Victoria

Y - species occurs in this Park

(FFG) listed under the Flora and Fauna Guarantee Act 1988

PCNP Port Campbell National Park

BICP Bay of Islands Coastal Park

APPENDIX III THREATENED FAUNA SPECIES

SCIENTIFIC NAME	COMMON NAME	STATUS	PCNP	BICP
Mammals				
<i>Antechinus minimus</i>	Swamp Antechinus	LR	Y	Y
<i>Mastacomys fuscus</i>	Broad-toothed Rat	LR	Y	
<i>Miniopteris schreibersii</i>	Common Bent-wing Bat	Vul, (L)		Y*
<i>Potorous tridactylus</i>	Long-nosed Potoroo	LR		Y
Birds				
<i>Accipiter novaehollandiae</i>	Grey Goshawk	LR	Y	
<i>Ardea alba</i>	Great Egret	End, (L)	Y	Y
<i>Botaurus poiciloptilus</i>	Australasian Bittern	End, (N)	Y	
<i>Dasyornis broadbenti</i>	Rufous Bristlebird	LR, (L)	Y	Y
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	End, (L)	Y	
<i>Pezoporus wallicus</i>	Ground Parrot	Vul, (L)	Y	
<i>Rallus pectoralis</i>	Lewin's Rail	End, (N)	Y	Y
<i>Thinornis rubricollis</i>	Hooded Plover	V, End, (L)	Y	Y
Reptiles				
<i>Egernia coventryi</i>	Swamp Skink	Vul	Y	
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink	LR	Y	

Source: NRE (database) 1998

Status (NRE 1998):

End endangered in Victoria

V vulnerable in Australia

Vul vulnerable in Victoria

LR lower risk — near threatened in Victoria

(L) listed under the Flora and Fauna Guarantee Act

(N) nominated for listing under the Flora and Fauna Guarantee Act

Y - species occurs in this Park

PCNP Port Campbell National Park

BICP Bay of Islands Coastal Park

* Lake Gilleear bat cave immediately west of BICP

APPENDIX IV MAJOR ENVIRONMENTAL WEEDS

SCIENTIFIC NAME	COMMON NAME	THREAT STATUS		DISTRIBUTION	ABUNDANCE	
		PCNP	BICP		PCNP	BICP
<i>Acacia longifolia</i> var. <i>sophorae</i>	Coast Wattle	S	P	PCNP: Sherbrooke River, Sparkes Gully Spasmodic, mainly roadsides, BICP: Wild Dog-Crofts Bay	F	U
<i>Acacia saligna</i>	Golden Wreath Wattle	S	P	PCNP: Princetown area BICP: Opposite Wild Dog/Bay of Martyrs - seedlings actively controlled; used as windbreaks in adjacent land	C	U
<i>Agapanthus praecox</i>	Agapanthus	S	S	Localised around old residences (Peterborough-Boat Bay-Crofts Bay)		M (locally C)
<i>Agrostis capillaris</i>	Brown-top Bent	S	S	PCNP: Widespread, BICP: Widespread Baileys-Dynons Rds	C	M
<i>Aira caryophyllea</i>	Silvery Hair-grass	S	S	Widespread, BICP: western areas		M
<i>Aira praecox</i>	Early Hair-grass	P	P	Western areas		M
<i>Allium triquetrum</i> *	Three-cornered Garlic	P	P	Dog Trap Bay		F
<i>Aloe coccinea</i>	Century Plant		P	Childers Cove; ongoing control of suckers		F
<i>Ammophila arenaria</i>	Marram Grass	M	S	PCNP: eastern and western ends of park on dunes, BICP: Throughout on well-drained dunes	M	C
<i>Anagallis arvensis</i>	Pimpernel	M	S	PCNP: Widespread but sparse, BICP: Widespread	U	C
<i>Arctotheca calendula</i>	Cape Weed	N		Widespread in disturbed areas	M	
<i>Arum italicum</i>	Arum	P	P	Western end of Peterborough around wetlands; spreading; control underway		C(locally)
<i>Aster subulatus</i>	Aster-weed	P	P	Peterborough-Childers Cove in wet areas		C(locally)
<i>Avena fatua</i>	Wild Oat	N	N	Flaxmans Hill (after fire)		U
<i>Avena sativa</i>	Oat	N	N	Flaxmans Hill (after fire)		U
<i>Briza maxima</i>	Large Quaking-grass	P		Widespread	C	

Appendix IV (cont.)

SCIENTIFIC NAME	COMMON NAME	THREAT STATUS		DISTRIBUTION	ABUNDANCE	
		PCNP	BICP		PCNP	BICP
<i>Briza minor</i>	Lesser Quaking-grass	P	P	PCNP: Widespread, BICP: Childers Cove	C	U
<i>Bromus catharticus</i>	Prairie Grass	P	P	Childers Cove-Lake Gilliar		U
<i>Bromus diandrus</i>	Great Brome	N		Adjoining Port Campbell Township	F	
<i>Cakile edentula</i>	Sea Rocket	N	N	Widespread on foredunes		M
<i>Cakile maritima</i>	Beach Rocket	N	N	PCNP: Western fore dunes, BICP: Widespread on foredunes	M (locally)	M
<i>Carduus pycnocephalus</i> ^*	Slender Thistle	N	N	PCNP: Widespread but sparse, BICP: Walking tracks, some sink holes	U	M
<i>Carduus tenuiflorus</i>	Thistle	P	N	PCNP: Great Ocean Road	C	M
<i>Centaureum erythraea</i>	Common Centaury	N	N	PCNP: Widespread but sparse, BICP: Widespread	U	C
<i>Cerastium glomeratum</i>	Common Mouse-ear Chickweed	S	S	Widespread in disturbed areas		U
<i>Chenopodium murale</i>	Sowbane	P	P	Widespread in disturbed areas		U
<i>Chrysanthemoides monilifera</i> ^*	Bonseseed		S	Crofts and Boat Bay, mainly disturbed areas, active control program		U
<i>Cirsium vulgare</i> ^*	Spear Thistle	P	P	PCNP: Great Ocean Road, BICP: Walking tracks, some drained sinkholes; associated with rabbits	C	M
<i>Convolvulus arvensis</i> *	Common Bindweed	P	P	PCNP: 1 km east of Peterborough, BICP: Roads, tracks, disturbed area; mainly eastern end	M (locally)	M
<i>Conyza bonariensis</i>	Tall Fleabane	N	N	PCNP: Roadsides, disturbed areas, BICP: Patchy	U	F
<i>Conyza canadensis</i>	Canadian Fleabane	N	N	PCNP: Roadsides, disturbed areas, BICP: Patchy	U	F

SCIENTIFIC NAME	COMMON NAME	THREAT STATUS		DISTRIBUTION	ABUNDANCE	
		PCNP	BICP		PCNP	BICP
<i>Coprosma repens</i>	Taupata (Mirror Bush)	S	S	PCNP: Sparse throughout Park but common on Port Campbell foreshore, BICP: Garden escape at Peterborough, Shack Road, etc; active control	C	U
<i>Cortaderia selloana</i>	Pampas Grass	S	S	PCNP: Entire Park, particularly close to GOR, BICP: Apparently eradicated	C	F
<i>Cotoneaster</i> sp.	Cotoneaster	S	S			F
<i>Cotula coronopifolia</i>	Water Buttons	S	S	PCNP: Wet areas, BICP: Wetlands, low lying areas	U	M
<i>Critesion murinum</i>	Barley-grass	P		Gibson Steps/12 Apostles	M	
<i>Cupressus macrocarpa</i>	Monterey Cypress	S	S	Between Kineens Rd and Lake Gilleear; active control		U
<i>Cynodon dactylon</i>	Couch	M	S	PCNP: Disturbed areas adjacent to roads and car parks, BICP: Shack sites at Crofts and Boat Bay	M	M
<i>Cyperus eragrostis</i>	Drain Flat-sedge	P	P	Drains near Peterborough		U
<i>Dactylis glomerata</i>	Cocksfoot	S	S	Wetlands near Peterborough		M
<i>Daucus carota</i>	Carrot	N		Clifton Beach	U	
<i>Delairea odorata</i>	Cape Ivy	S	S	Only known from Boat Bay; active suppression		F
<i>Diplotaxis tenuifolia</i> ^*	Sand Rocket	M		Great Ocean Road	M	
<i>Dipogon lignosus</i>	Common Dolichus	M		Tip site	F	
<i>Ehrharta erecta</i>	Panic Veldt Grass	P			N	
<i>Erica lusitanica</i>	Spanish Heath	S		Sherbrook plantation	C	
<i>Erica quadrangularis</i>	Angled Heath	P			N	
<i>Euphorbia paralias</i>	Sea Spurge	S	S	Common on foredunes		C

Appendix IV (cont.)

SCIENTIFIC NAME	COMMON NAME	THREAT STATUS		DISTRIBUTION	ABUNDANCE	
		PCNP	BICP		PCNP	BICP
<i>Gazania linearis</i>	Gazania	P	P	PCNP: 1 km east of Port Campbell, BICP: Garden escapes, car parks; Peterborough-Childers Cove	F	C (locally)
<i>Genista monspessulana</i> ^*	Montpellier Broom	P			N	
<i>Hainardia cylindrica</i>	Common Barb-grass	P	P		N	N
<i>Helminthotheca echioides</i>	Ox-tongue	S	S	Patchy on road sides and disturbed areas		U
<i>Holcus lanatus</i>	Yorkshire Fog	S	S	Patchy except for larger population at de Littles where it is moderately common		U
<i>Hypochoeris glabra</i>	Smooth Cat-ear	N	S	PCNP: Widespread, BICP: Widespread	C	C
<i>Hypochoeris radicata</i>	Cat-ear	N	N	PCNP: Widespread, BICP: Widespread	C	C
<i>Kniphofia uvaria</i>	Red Hot Pokers	P	P	Wild Dog Cove, Childers Cove; active suppression		U
<i>Lagurus ovatus</i>	Hare-tail	S	S	PCNP: Widespread in sandy areas, BICP: Irvines Corner-Boat Bay on road sides	M	U
<i>Lavatera arborea</i>	Tree Mallow	-			N	
<i>Leontodon taraxacoides</i>	Hairy Hawkbit	N		Disturbed areas	U	
<i>Leptospermum laevigatum</i>	Coast Tea-tree	P	S	PCNP: Port Campbell Beach and the Arch/Lace Curtains, BICP: Scarce in east and actively controlled; heavy infestation in west, including on adjacent private land (where planted as wind break); not considered controllable at present	C	F (east), C (west)
<i>Leucanthemum maximum</i>	Shasta Daisy		S	Most sinkholes; active control		C (locally)
<i>Lycium ferocissimum</i> ^*	African Box-thorn	P	S	PCNP: Princetown, BICP: Patchy - Dogtrap Bay, Lake Gilleear, east of Stanhopes Bay; active control	C	F
<i>Marrubium vulgare</i> ^*	Horehound	P		Point Hesse area	F	

SCIENTIFIC NAME	COMMON NAME	THREAT STATUS		DISTRIBUTION	ABUNDANCE	
		PCNP	BICP		PCNP	BICP
<i>Myosotis sylvatica</i>	Wood Forget-me-not		S	Crofts Bay-Wild Dog Cove, Childers Cove (shack sites)		U
<i>Oxalis articulata</i>	Bent Wood-sorrel		P	walking tracks, disturbed sites		U
<i>Papaver somniferum</i>	Opium Poppy		N	Crofts Bay (shack site)		F
<i>Paraserianthes lophantha</i>	Cape Wattle	S	S			U
<i>Paspalum dilatatum</i>	Paspalum	N		Widespread	F	
<i>Paspalum distichum</i>	Water Couch		S	Peterborough in wet areas		M (locally)
<i>Pennisetum clandestinum</i>	Kikuyu Grass	S		Widespread, particularly along GOR	C	
<i>Phalaris aquatica</i>	Toowoomba Canary-grass		S	Some road sides, Radfords-Baileys Rds; active control		U
<i>Pinus pinaster</i>	Cluster Pine	S		Pine plantation	M	
<i>Pinus radiata</i>	Monterey Pine	S	S	PCNP: Pine plantation, BICP: Lake Gilleear & Killeens Rd; controlled	M	F
<i>Pittosporum undulatum</i>	Sweet Pittosporum	M		Boorunga Road	F	
<i>Plantago coronopus</i>	Buck-horn Plantain	P	S	PCNP: Widespread, BICP: Crofts Bay; controlled	M	F
<i>Plantago lanceolata</i>	Ribwort	S	S		N	N
<i>Plantago major</i>	Greater Plantain	N		Widespread	M	
<i>Populus alba</i>	White Poplar	M		Pine plantation	F	
<i>Reseda luteola</i> *	Wild Mignonette	M		Point Hesse	F	
<i>Romulea rosea</i>	Common Onion-grass	S	S	Flaxmans Hill & western areas in heavy soils		U
<i>Rorippa nasturtium-aquaticum</i>	Two-row Water-cress	S	S	Creek west of Boat Bay		U
<i>Rubus discolor</i>	Blackberry	M	S	PCNP: Isolated occurrence, BICP: Childers Cove & Dog Trap Bay; active control	F	F

Appendix IV (cont.)

SCIENTIFIC NAME	COMMON NAME	THREAT STATUS		DISTRIBUTION	ABUNDANCE	
		PCNP	BICP		PCNP	BICP
<i>Rumex crispus</i>	Curled Dock	N	N	Flaxmans Hill		U
<i>Senecio elegans</i>	Purple Groundsel	S	S	Most dunes		C
<i>Senecio jacobea</i> ^*	Ragwort	S	P	PCNP: Widespread, with heavy infestation at Sherbrooke, BICP: Crofts Bay-Boat Bay; active control	C	F
<i>Senecio vulgaris</i>	Common Groundsel		N	Road sides, mainly in east		U
<i>Solanum nigrum</i>	Black Nightshade	N (s)	S	PCNP: Widespread, BICP: Disturbed area	F	U
<i>Sonchus asper</i>	Rough Sow Thistle	S	S	Disturbed areas		U
<i>Sonchus oleraceus</i>	Sow Thistle	S	S	Disturbed areas		U
<i>Sporobolus indicus</i>	Indian Rat-tail Grass		S			N
<i>Stenotaphrum secundatum</i>	Buffalo Grass	S	S	PCNP: Princetown-Gibson Steps, BICP: Crofts Bay, Boat Bay, Childers Cove, Wild Dog Cove (old shack sites)	C	M (locally)
<i>Taraxacum officinale</i> spp. agg.	Dandelion	P	P	Baileys Road-Flaxmans Hill		M
<i>Trifolium campestre</i>	Hop Clover	S	S	Walking tracks		U
<i>Trifolium dubium</i>	Suckling Clover	S	S	Walking tracks		U
<i>Trifolium fragiferum</i>	Strawberry Clover	P	P	Walking tracks		U
<i>Trifolium repens</i>	White Clover	S	S	Walking tracks		U
<i>Trifolium resupinatum</i>	Shafted Clover		P	Walking tracks		U
<i>Verbascum verbatum</i>	Twiggy Mullein	S	S	Crofts Bay-Curdies River, on graded roadsides		M
<i>Vicia sativa</i>	Common Vetch	S	S	Flaxmans Hill dunes and previously cultivated areas		U
<i>Vinca major</i>	Blue Periwinkle	S		Port Campbell tip and south of bridge on Port Campbell Creek	C (locally)	
<i>Vulpia bromoides</i>	Squirrel-tail Fescue	M				N

Appendices

Appendix IV (cont.)

SCIENTIFIC NAME	COMMON NAME	THREAT STATUS		DISTRIBUTION	ABUNDANCE	
		PCNP	BICP		PCNP	BICP
<i>Watsonia meriana</i> ^*	Bulbil Watsonia	S	P	PCNP: Port Campbell Township, Locks Road, BICP: Flaxmans Hill-Childers Cove	C	F
<i>Zantedeschia aethiopica</i>	White Arum Lily	P	P	PCNP: Western dunes, BICP: Wetlands in eastern areas; active control	M	U

PCNP = Port Campbell National Park;

BICP = Bay of Islands Coastal Park

^ = Regionally controlled weed in Glenelg Region;

* = Regionally controlled weed in Cornagamite Region

Threat status:

S = currently a serious threat to park values;

P = potential future threat to park values;

M = currently a moderate threat to park values;

N = not considered a threat to park values.

Abundance:

C = common;

M = moderately common;

U = uncommon;

F = a few individuals;

N = unknown.