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Merri Marine Sanctuary



Management Plan May 2007

**MERRI MARINE SANCTUARY
MANAGEMENT PLAN**

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Acknowledgement of *Country*: In their rich culture, Indigenous Australians are intrinsically connected to the continent – including the area now known as Victoria. Parks Victoria recognises that the sanctuary is a part of *Country* of the Traditional Owners.

Parks Victoria is grateful to all those organisations and individuals who have contributed to this Management Plan. Special thanks go to members of the Merri Marine Sanctuary Management Plan Advisory Group: John Amor, Lynda Avery, Alecia Bellgrove, Matt Bowker, Joe Chatfield, Ian Fitzgibbon, Nathan Gass, Antoinette Hanna, Lionel Haradine, Phillip Kerr, Laurie Laurenson, Neil Martin, Julie Mondon, Marg O’Toole and Phillip Younis.

Note

Technical terms used in this plan are explained in the **Glossary** at the end of the plan.

Disclaimers

This plan is prepared without prejudice to any negotiated or litigated outcome of any native title determination applications covering land or waters within the plan’s area. It is acknowledged that any future outcomes of native title determination applications may necessitate amendment of this plan; and the implementation of this plan may require further notifications under the procedures in Division 3 of Part 2 of the *Native Title Act 1993* (Cwlth).

The plan is also prepared without prejudice to any future negotiated outcomes between the Government/s and Victorian Indigenous communities. It is acknowledged that such negotiated outcomes may necessitate amendment of this plan.

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FOREWORD

Merri Marine Sanctuary is one of Victoria's newest protected areas. It is unique and forms an important part of Victoria's system of Marine National Parks and Sanctuaries. This area protects a range of marine habitats including rocky reefs, intertidal platforms and sandy habitats, and provides visitors with the opportunity to experience and discover marine environments.

The care of Merri Marine Sanctuary is not a task for the government alone, nor only for those who live on the coast. It is a task for the whole Victorian community. This Management Plan sets out the ways in which we can work together to learn about, protect and sustain an important part of our marine environment.

Indigenous communities, particularly the Gundidj Mara and Kirrae Whurrong, have an ancient connection to this sea *Country* and aspire to maintain and build on this cultural connection.

The people of Warrnambool and surrounding areas have been actively involved in the development of this management plan. I wish to thank the members of the Merri Marine Sanctuary Management Plan Advisory Group for their valuable contribution to the plan, and also wish to thank those individuals and organisations who made submissions on the draft plan and I look forward to the community's ongoing support for the management of Merri Marine Sanctuary.

JOHN THWAITES MP
Minister for Environment, Water and
Climate Change

APPROVED MANAGEMENT PLAN

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

The plan provides the basis for the future management of Merri Marine Sanctuary. It was finalised following consideration of the five submissions received on the Draft Management Plan.

PETER HARRIS
Secretary to the
Department of Sustainability and Environment

MARK STONE
Chief Executive
Parks Victoria

INTRODUCTION TO THE MARINE ENVIRONMENT

Victorians are custodians of some of the most remarkable, diverse, and culturally important marine environments on Earth. These include deep open water, shallow embayments, rocky reefs, canyons, seagrass meadows, tidal sandflats and mudflats, and estuaries, and they support more than 12 000 known species. Around 90% are found only in the waters of southern Australia.

Broadly speaking, Victoria has responsibility for the waters which extend offshore to three nautical miles and cover around 70 000 square kilometres. Marine National Parks and Marine Sanctuaries make up about 5% of this area, but protect a range of significant species and important habitats, as well as maritime artefacts and evidence of past Indigenous occupation and use.

The vast, three-dimensional marine environment has characteristics that are very different from those of the land and atmosphere. The fundamental physical properties — pressure, temperature, salinity, density and availability of nutrients and gases — are all very different. There are also great differences in the types of substrates, and the physical and biological processes that occur, such as tides, currents, light penetration, erosion, sedimentation, oxygen uptake, life cycles and even the food chains.

The organisms that occupy the marine environment are different. On land, vascular plants dominate, but in marine habitats they are very rare, occurring only in very shallow water on sheltered coastlines. In most marine environments, their ecological roles in photosynthesis and oxygen production are undertaken by algae, which range in size from giant kelps to minute single-celled species. Other single-celled organisms such as diatoms, cyanobacteria, dinoflagellates and forams, together with invertebrate larvae and marine fungi, make up most of the abundant marine plankton that is the basis of all marine food chains.

As on land, invertebrates, including molluscs (e.g. octopuses, abalones, snails), crustaceans (e.g. crabs, lobsters, tiny amphipods) and echinoderms (e.g. sea cucumbers, sea stars and sea urchins), dominate the marine fauna, but

insects — the most abundant invertebrates on land — are almost absent. The dominant vertebrates are fish, although mammals and reptiles also inhabit the marine environment and many birds inhabit both realms.

Although they are very different physically and biologically, the land, atmosphere and marine environments are interconnected. Water and gases are transferred between oceans and the atmosphere. There are animals with both marine and freshwater life stages, and some species breed in estuaries where fresh water from the land mixes with oceanic salt water. Fresh water and sediments from catchments far inland are dispersed into coastal waters, bringing with them nutrients needed to maintain inshore marine ecosystems, but also pollution from human activities.

The sea interconnects marine habitats over great distances. Tides and currents move sediments, plankton and organic matter into and through habitats, along with flotsam, jetsam, ballast water and oils from catchments or inshore waters, released from ships on the open seas or washed from the shores of other countries. Many marine animals migrate long distances, passing freely into and out of Victorian waters and spending much of their lives in the open ocean.

A vision for Victoria's system of Marine National Parks and Marine Sanctuaries

‘A world-class system of Marine National Parks and Marine Sanctuaries that conserves the diversity of Victoria's marine environments, protected and enjoyed by Victorians and visitors, forever.’

This vision is detailed in the *Marine National Parks and Marine Sanctuaries Management Strategy 2003–2010* (Parks Victoria 2003a). It is described in the following extract:

The vision for Victoria's system of Marine National Parks and Marine Sanctuaries is to maintain marine ecosystems in their natural state, enjoyed by visitors and protected from the effects of inappropriate activities. The system will safeguard representative examples of undisturbed natural marine habitats, respect cultural heritage values, and be a place of inspiration, enjoyment and renewal for all

people. The system will complement our world-class national parks system on land.

This vision aims to preserve the diversity of our marine environment, its flora and fauna, its natural beauty, and the diversity of activities that may be enjoyed there. It is a vision that invites all Victorians to become involved, to take pride in our Marine National Parks and Marine Sanctuaries, and to share in their stewardship' (Parks Victoria 2003a).

Contribution of Merri Marine Sanctuary to the state-wide system

Merri Marine Sanctuary is one of four Victorian marine protected areas in the Otway Bioregion. The Merri River estuary, offshore islands, subtidal reef and intertidal reef create a diverse and ecologically significant environment. It is an important site for education and for fostering appreciation of Marine National Parks and Marine Sanctuaries.

Implications for management

The differences and connections in the marine environment mean that Victoria's Marine National Parks and Marine Sanctuaries must be managed somewhat differently to land environments. Natural, recreational and cultural values may be affected by the use of both land and marine areas some distance away, over which sanctuary managers have no

direct control. Impacts on one marine habitat can quickly affect another, and human activities and natural events on land and in the atmosphere can have widespread consequences for the marine environment. Boundaries in the ocean can be difficult to define, and the effects of human activities can be hidden from view. Like the atmosphere, but in contrast to land, the marine environment is a common resource for which there is no private ownership and few natural or artificial barriers to movement. Many of the strategies used to concentrate the impacts of recreational activities in terrestrial parks (e.g. creation of walking tracks and picnic areas) are not feasible in the marine context.

Conservation of cultural places and objects is also a challenge because it is difficult to identify an underwater place or monitor activities that take place on the open sea or under water. Sea *Country* and cultural connection to, or past use of, underwater places which were exposed prior to sea level rise, must also be considered.

The long-term protection of the Marine National Parks and Marine Sanctuaries relies on the support and goodwill of the community, together with the help of coastal managers and government agencies. The plan seeks to foster a strong sense of custodianship of the sanctuary and to strengthen its protection while respecting cultural and community associations with the area.

SUMMARY

This Management Plan covers Merri Marine Sanctuary, located near Warrnambool in south-western Victoria.

The sanctuary protects values that include a range of marine species and environments, Indigenous cultural values and non-Indigenous cultural values. These values, and the sanctuary's close proximity to the city of Warrnambool, make this an important site for the development of community awareness of Marine National Parks and Marine Sanctuaries, community education, and community involvement.

Indigenous communities have a long association with the area and its resources. There are many important cultural sites nearby and there are also likely to be submerged sites and artefacts within the sanctuary. The spiritual relevance of sea *Country*, the coast, and marine life is of fundamental importance to the Indigenous people of the area and is reflected in an ongoing involvement in the management of the islands and adjacent coastal reserves.

During the 19th century, the waters of the sanctuary were a part of the port of Warrnambool, which was a hub for agricultural trade. Human-induced changes such as the construction of a sea wall and breakwater, and the altered flow of the Merri River have permanently affected the hydrodynamics of the area.

Merri Marine Sanctuary contains a mixture of habitats, including intertidal reef, sand, shallow reef and rocky overhang. These areas provide a nursery for many fish species and a habitat for many algae species, hardy invertebrates and shorebirds. The adjacent islands provide nesting areas for Little Penguins, Little Pied Cormorants and Short-tailed Shearwaters and roosting areas for transient seabirds such as the Pacific Gull.

Merri Marine Sanctuary provides one of the few locations on this wild coastline where people can see marine life and learn about Marine National Parks and Marine Sanctuaries. The sanctuary provides opportunities for visitors to learn about intertidal marine life, enjoy beach activities

and water sports, and experience wild coastal landscapes and beautiful underwater scenery.

The sanctuary will be managed as a world-class marine protected area for conservation and appropriate recreation consistent with its status. It contributes to the overall maintenance of marine biodiversity in the Otway bioregion by protecting small examples of several marine habitats.

Management will seek to maintain the overall biodiversity of the marine ecological communities, establish a sound basis of scientific knowledge, and ensure ongoing community support, including agency partnerships.

Major management directions for the sanctuary include:

- protection of natural processes, including competition, predation, recruitment and disturbance, to ensure an overall benefit to the biodiversity and variety of marine ecological communities in Merri Marine Sanctuary
- progressive development of baseline information about marine biodiversity, marine habitats, threatening processes and management requirements
- opportunities for visitors to observe marine life, undertake water sports and learn about the sanctuary
- opportunities for members of local communities, including interest groups, government agencies and Indigenous communities, to have an active role in management
- increased awareness among the community of the location and values of the sanctuary
- recognition of Indigenous cultural heritage associated with the sanctuary, and respect for the views of the Traditional Owners and cultural obligations of Indigenous people
- integration of Traditional Owners' knowledge, interests and rights and aspirations for the sanctuary in planning

and management, in cooperation with relevant Indigenous communities

- work collaboratively with agencies, the community and stakeholders to assist in the sanctuary's management and complementary management of adjacent areas.

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1 INTRODUCTION

1.1 Location and planning area

The Merri Marine Sanctuary is on the Victorian south-west coast near Warrnambool, approximately 260 km west of Melbourne (figure 1).

The sanctuary (25 ha) includes areas below the mean high water mark between Thunder Point in the west and Breakwater Rock in the east. It extends from the footbridge on the Merri River to the south-west for approximately 200 metres. The sanctuary surrounds Middle Island and Merri Island (figure 2).

1.2 Creation of the sanctuary

Merri Marine Sanctuary forms part of the system of 13 Marine National Parks and 11 Marine Sanctuaries in Victorian waters. The selection of these areas was based on more than 10 years of research, investigation and community consultation by the former Land Conservation Council (LCC) and Environment Conservation Council (ECC), summarised in the Marine, Coastal and Estuarine Investigation Final Report (ECC 2000). The recommendations of the ECC accepted by government (Government of Victoria 2002) included reservation of the new parks and sanctuaries under the *National Parks Act 1975* (Vic.). Merri Marine Sanctuary was included on Schedule 8 of the National Parks Act on 16 November 2002 (appendix 1).

When created, much stronger penalties were applied for all forms of fishing, including shellfish collection in Marine National Parks or Marine Sanctuaries, than apply for taking or damaging of other fauna, plants or objects from these areas.

Merri Marine Sanctuary includes areas between the high and low water mark that were formerly part of the Thunder Point Coastal Reserve.

1.3 Plan development

This first Management Plan for Merri Marine Sanctuary was prepared by Parks Victoria, with significant input from the Merri Marine Sanctuary Management Plan Advisory Group and other stakeholders. It takes into account existing information, reports and research

findings that relate to the sanctuary and is informed and supported by a range of best-practice management systems.

The strategies outlined in this draft plan have been guided by the statewide *Marine National Parks and Marine Sanctuaries Management Strategy 2003–2010* (Parks Victoria 2003a).

The plan includes information about the values of the adjacent Middle Island and Merri Island and acknowledges Warrnambool City Council's management strategies. There is a separate management plan for Middle Island produced by the Coasts and Rivers Advisory Committee and Warrnambool City Council, which has an emphasis on conservation of the Little Penguin (CRAC & WCC 2001). This plan does not review or propose new management strategies for the islands.

The plan is a strategic guide for future management of Merri Marine Sanctuary. As a public document, the plan establishes how Parks Victoria will protect the natural and cultural values of the sanctuary, and describes the services and facilities that will be provided to help visitors enjoy, appreciate and understand the sanctuary in ways that are consistent with this. The plan also serves to inform the community about the sanctuary, encourage interested groups to become involved in management programs, and encourage cooperative land management and participation in community-based programs between Parks Victoria and managers of areas adjacent to the sanctuary.

As a working document for the sanctuary, the plan informs Parks Victoria's development of Corporate Plans, serves as a framework for subsequent detailed planning, and governs management activities.

The Draft Management Plan was published for public comment in 2006, and five submissions were received (appendix 2).

Where necessary, further consultation with the community and stakeholders was undertaken.

Key changes made to the Draft Plan in preparing this Final Management Plan included:

- the addition of references to Coast Action/Coastcare's Marine Care Program where appropriate
- permitting appropriate Defence Forces training activities.

The final management plan will direct future management of Merri Marine Sanctuary, until reviewed.

2.1 Regional context

Merri Marine Sanctuary forms part of a representative system of 13 Marine National Parks and 10 other Marine Sanctuaries in Victoria, established within the broader context of a National Representative System of Marine Protected Areas (NRSMPA). The NRSMPA contributes to the establishment of a global representative system of marine protected areas (ANZECC TFMPA 1999).

Merri Marine Sanctuary forms part of the Otway marine bioregion. The sanctuary is one of five Marine National Parks and Marine Sanctuaries in the marine bioregion, as identified by the Interim Marine and Coastal Regionalisation for Australia (IMCRA). This regionalisation identified 60 marine bioregions, five of which apply to Victorian waters (IMCRA Technical Group 1998). The Otway bioregion encompasses waters from the coastline to the edge of the continental shelf and extends in an arc from Cape Jaffa in South Australia to Cape Otway in Victoria, and to King Island and the north-western tip of Tasmania. The sanctuary is less than 1% of the total protected area within this bioregion.

Merri Marine Sanctuary is characterised by cold water, high wave energy, a steep offshore gradient, and nutrient upwellings associated with the edge of the continental shelf (IMCRA Technical Group 1998).

Indigenous tradition indicates that the sanctuary is situated near the boundary between *Country* of Gundidj Mara and Kirrae Whurrong people. These Traditional Owner groups share a strong interest in the sanctuary.

As part of the Merri River catchment of the Hopkins basin, the sanctuary is strongly influenced by activities within the Glenelg Hopkins Catchment Management Authority's area of responsibility.

The area abutting Merri Marine Sanctuary is a mixture of coastal heathland, wetland, farmland and urban areas. The Merri River flows directly into the sanctuary at Stingray Bay. Two adjacent islands, Middle Island and Merri Island, which are surrounded by the sanctuary, are managed by Warrnambool City

Council and are not a part of Merri Marine Sanctuary (section 7.2).

The foreshore adjacent to the sanctuary is within the City of Warrnambool. The sanctuary is within Tourism Victoria's Great Ocean Road product region. Warrnambool, Port Fairy and surrounding areas provide a range of camping and accommodation opportunities close to the sanctuary. The Great Ocean Road product region receives 14% of all tourist visits to Victoria, comprising 2.6 million domestic overnight visitors, 4.6 million domestic day visitors, and 164 000 international overnight visitors (Tourism Victoria, unpublished data).

The Merri Marine Sanctuary protects approximately 1 km of the coastline between Thunder Point and the Warrnambool breakwater. The values of the sanctuary are complemented by four other Marine Protected Areas in the Otway marine bioregion, including:

- Twelve Apostles Marine National Park
- Discovery Bay Marine National Park
- The Arches Marine Sanctuary
- Rivoli Bay Rock Lobster Sanctuary, in South Australia.

There are a range of other natural attractions in the region, including:

- Lady Bay, Lady Bay foreshore and the promenade
- Logan's Beach whale viewing area
- Merri River and Merri River Wetlands
- Lake Pertobe wetlands, playgrounds and picnic areas
- Thunder Point Coastal Reserve including Middle Island and Merri Island
- Tower Hill Reserve.

2.2 Sanctuary significance and values

Merri Marine Sanctuary makes a valuable contribution to Victoria's parks system, which aims to protect viable, representative samples of the State's natural marine and terrestrial

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

The sanctuary is assigned the International Union for the Conservation of Nature and Natural Resources (IUCN) Category III of the United Nation's List of National Parks and Protected Areas. Category III areas are managed primarily for conservation of specific natural features.

The area included in the sanctuary is significant to many people in the community, especially the Gundidj Mara and Kirrae Whurrong, who are connected to their custodial lands. Indigenous communities have a long and close connection to this area. Spiritual perspectives of this connection are reflected in the story of creation. Middens adjacent to the sanctuary show how generations collected and used marine species as a food source.

Other important values for the sanctuary are as follows:

- the Merri River, wetlands, islands and headlands near the sanctuary form an interesting landscape which extends underwater to create a diverse environment for algae, fish and invertebrates
- the intertidal area at Pickering Point is particularly diverse, colourful and is accessible during low tides. It is a fascinating site for exploring rock pools and has often been used by schools.

2.3 Evidence of past use

Fresh water, a range of food sources and access to intertidal areas made the area around the sanctuary an important site for many generations of Indigenous people. Much archaeological information has been lost because the coast has retreated, but middens and artefacts found on the coastal reserve adjacent to the sanctuary demonstrate the importance of the sanctuary as a source of marine food resources for Indigenous communities over thousands of years (L. Haradine, pers. comm. 2005).

The sanctuary is a key element in the culture of Indigenous communities and the history of Warrnambool. Through years of use and

enjoyment, many people have developed a social connection and an appreciation of the area's special values.

People from Warrnambool and nearby communities also used the area as a source of seafood. There is anecdotal evidence that the size and abundance of the fish, abalone and rock lobster collected in the area have declined significantly over the years.

The shipping trade developed at Warrnambool in the early 1840s. Early photos show sailing ships anchored in the area now known as Stingray Bay. Middle Island was the site of a light station and cottage, which have been relocated to Flagstaff Hill Maritime Museum. There are many shipwrecks in the vicinity of the sanctuary and remnants of a steel barge in the sanctuary.

Before construction of the breakwater and viaduct road, Breakwater Rock was an island. The new Merri River course was constructed in the 1860s to minimise the build-up of sand around the port. Sand has continued to accumulate in the area to the south of the sanctuary, creating a significantly altered coastline in this area (Gill 1984). Thunder Point and Pickering Point have been eroded significantly, ultimately resulting in these areas being reserved as Crown land and reshaped and revegetated.

Early photographs also show that intertidal areas within the sanctuary, including Pickering Point and Picnic Cave, were used for education and recreation. Picnic Cave has now collapsed, but the remnants of an old stairway into the area are still visible. An aquarium adjacent to the sanctuary was open to the public until the early 1980s.

Before the creation of the sanctuary, shore-based fishing, spear fishing and rock lobster and abalone collection occurred in these waters. Middle Island has been a popular site for swimming and diving. Impacts associated with these activities, and increasing tourism, brought about the construction of the Middle Island boardwalk.

2.4 The sanctuary visitor

Sites within and adjacent to the sanctuary are among a series of medium-profile attractions which many Warrnambool visitors incorporate into a short tourist drive. The lookouts,

walking tracks and carparks adjacent to the sanctuary are also used for a range of recreational activities by locals. Although significant numbers of people visit the sanctuary and adjacent sites, their visit is usually associated with established destinations such as Thunder Point which were well known prior to the creation of the sanctuary. Visitors are often unaware that this area is a marine sanctuary (Goyen & White 2003).

During the warmer months, and particularly during holiday periods, many people visit the area known as Stingray Bay, a small beach within the sanctuary (below the mean high water mark). At times this unpatrolled beach is a very popular area for swimming, walking and beach activities.

Many visitors also explore rock pools near Pickering Point. Low tides coinciding with calm conditions and holiday seasons can result in significant numbers of people accessing the intertidal area.

During the cooler months of the year relatively few people visit the sanctuary, although the walking tracks and lookouts surrounding the sanctuary allow large numbers of 'non-contact' visitors to see the sanctuary without actually entering it.

The sanctuary is one of the most popular scuba diving areas around Warrnambool. Areas around Middle Island and Pickering Point are also used for snorkelling. Increasing residential development nearby may result in more visitors accessing the area on foot for passive recreational activities.

The sanctuary is likely to gradually become more popular with vehicle-based tourists, who can view the sanctuary from Pickering Point and Thunder Point. Their visit is usually short and they might not see any information about the sanctuary. Facilities adjacent to the sanctuary are summarised in figure 2. The sanctuary complements Thunder Point and other nearby destinations by providing visitors with a marine perspective.

The sanctuary is one of the few locations in the area where people can see marine life close up, without diving. The intertidal life, penguins, Short-tailed Shearwaters and seals can regularly be seen by visitors in the sanctuary. Its proximity to Warrnambool means that it is

an extremely important site for groups and individuals to discover, enjoy and learn about Marine National Parks and Marine Sanctuaries.

2.5 Legislation and ECC recommendations

Legislation

Merri Marine Sanctuary is reserved and managed under the provisions of the National Parks Act. The Act requires the Secretary to DSE to preserve and protect the natural condition of the sanctuary and its natural, cultural and other features and, subject to this, to provide for the use of the sanctuary by the public for enjoyment, recreation and education. Appropriate research activities are also provided for under the Act. The National Parks (Park) Regulations 2003 apply to the Merri Marine Sanctuary.

All forms of extraction, including recreational and commercial fishing and shellfish collection, are prohibited within the sanctuary under the National Park Act and regulations. A Statewide Compliance Strategy and a Regional Compliance Plan have been developed in partnership with Fisheries Victoria to manage compliance with the no-fishing provisions within the sanctuary (section 8.3).

The objects and provisions of the National Parks Act set the framework for the management of Merri Marine Sanctuary (appendix 1). Specific legislation and ECC recommendations accepted by government also govern particular aspects of the management of Merri Marine Sanctuary as described below and in subsequent sections of the plan.

The *Parks Victoria Act 1998* (Vic.) enables management services for Merri Marine Sanctuary to be provided by Parks Victoria on behalf of the Secretary to DSE.

The *Coastal Management Act 1995* (Vic.) applies to the use and any development of the whole of the sanctuary.

The *Archaeological and Aboriginal Relics Preservation Act 1972* (Vic.) and the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cwlth) apply to the sanctuary and protect all Aboriginal cultural heritage values including places and objects. It is an offence to damage, interfere or endanger an Aboriginal site, place or object without

obtaining prior written consent from the scheduled Aboriginal Community (section 5.1)

The *Native Title Act 1993* (Cwlth) applies to the management of the sanctuary.

The *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) applies to the whole of the sanctuary with respect to actions that have, will have, or are likely to have a significant impact on matters of national environmental significance.

The *Parks Victoria Act 1998* (Vic.) enables management services for Merri Marine Sanctuary to be provided by Parks Victoria on behalf of the Secretary to DSE.

Other legislation, and policies and guidelines (section 2.6) at both the Commonwealth and State levels apply to management of the sanctuary and specific activities and uses.

ECC recommendations

The former Environment Conservation Council (ECC) in its *Marine, Coastal and Estuarine Investigation Final Report* recommended the creation of the Merri Marine Sanctuary for its ecological significance and value for public appreciation and education, (ECC 2000).

The ECC also made a number of recommendations that relate to the sanctuary. The recommendations included:

Recommendation B Use of Merri Marine Sanctuary (B1) in accordance with the general recommendations for Marine Sanctuaries.

R3 Planning and management relating to traditional interests and uses in coastal marine areas will be based on recognition and respect for the traditional relationship of Aboriginal people with the land and sea.

R13 Further research will be undertaken on biological community composition and structure, both within and external to marine protected areas, with an emphasis on assessing the impacts of harvesting marine fauna.

R14 Assessments will be made and strategies developed for protection of vulnerable or threatened marine species and communities, using the provisions of the

Flora and Fauna Guarantee Act 1988 (Vic.) as appropriate.

R18 Measures will be implemented by responsible agencies to reduce the risk of marine pest species arriving in Victoria, and to ensure a rapid and effective response in the event of an introduction.

R26 Public land and waters will continue to be available for a wide range of tourism and recreational uses. Development should not preclude public access to foreshore and offshore areas, other than to meet safety and security requirements that cannot be achieved in other ways.

2.6 Policies and guidelines

The sanctuary is managed in accordance with Parks Victoria's operational policies and as appropriate, consistent with other relevant policies and guidelines, including:

- *Heritage Management Strategy* (Parks Victoria 2003b)
- *Indigenous Partnership Strategy and Action Plan* (Parks Victoria 2005)
- *Guidelines for Working with Aboriginal Communities and Protection of Cultural Sites* (Parks Victoria 2002a)
- *National Strategy for Ecologically Sustainable Development* (COAG 1992)
- *National Strategy for the Conservation of Australia's Biological Diversity* (ANZECC 2001)
- *Victoria's Biodiversity Strategy* (NRE 1997)
- *Victoria's System of Marine National Parks and Marine Sanctuaries Management Strategy 2003–2010* (Parks Victoria 2003a).

The Merri Marine Sanctuary is also managed within the broader context of a number of other plans and strategies, including:

- *Glenelg Hopkins Regional Catchment Strategy 2003–2007* (Glenelg Hopkins CMA 2003)
- *Management Plan for Middle Island with Emphasis on Conservation of the Little Penguin* (CRAC & WCC 2001)

-
- *Nature Based Tourism — Directions and Opportunities for Victoria 2000–2003* (Tourism Victoria 2000)
 - *Policy for Sustainable Recreation and Tourism on Victoria’s Public Land* (NRE 2002a)
 - *Warrnambool Coastal Action Plan* (WCB, WWC & Connell Wagner 1999)
 - *Victorian Coastal Strategy* (VCC 2002).

3 STRATEGIC DIRECTIONS

3.1 Sanctuary vision

A future visitor to Merri Marine Sanctuary finds a prominent and well-recognised marine sanctuary, comprising species and habitats typical of the bioregion which are in excellent condition.

Ongoing scientific research and monitoring programs have established a detailed and increasing knowledge of the management requirements of the local ecosystem. Ongoing community and government partnerships have helped establish a scientific basis for management. The values and benefits of this well-known sanctuary are respected and appreciated, through public education and interpretation of the sanctuary's values.

3.2 Zoning

A park management zoning scheme is normally used to define areas where various types and levels of use are appropriate. However, management zones do not need to be defined in Marine National Parks and Marine Sanctuaries because the management aims for these areas are clearly outlined in the National Parks Act and are consistent across all Marine National Parks and Marine Sanctuaries (section 2.5 and appendix 1).

In this sanctuary, an intertidal Special Protection Area overlay is used to highlight special protection and additional management requirements.

The Special Protection Area characteristics are listed in table 1. The boundary of the special protection area is shown in figure 2.

3.1 Management directions

Major management directions for the sanctuary are outlined below.

Natural values conservation

- Natural processes, including competition, predation, recruitment and disturbance, will be protected to ensure an overall benefit to the biodiversity and variety of marine ecological communities in Merri Marine Sanctuary.

- Identified threats to the sanctuary will be minimised through addressing the outcomes of ongoing monitoring, risk assessment and, where feasible, complementary adjacent, coastal and catchment management.
- Compliance with legislated provisions that prohibit extractive activities, including fishing and shellfish collection, will be ensured through education, information, community support, and improved surveillance and enforcement.
- Research and monitoring to improve the scientific basis for management, including baseline data collection, marine habitat mapping and threat assessment, will be undertaken as outlined in the statewide Management Strategy (Parks Victoria 2003a) and through collaborative research links.
- Impacts of changes to water quality will be minimised through cooperation with catchment managers and other relevant agencies.
- A sensitive intertidal community near Pickering Point will be protected by minimising recreational access to the location.

Cultural values conservation

- Indigenous places and objects will be protected from interference or damaging activities.
- The Traditional Owners' knowledge, interests and rights in the waters and land, and aspirations for *Country*, will be reflected in the sanctuary's management, in accordance with legislation and policies.
- Historic relics and places will be conserved by protecting them from damaging or inappropriate activities.

TABLE 1 MANAGEMENT OVERLAY

OVERLAY	AREA / LOCATION	VALUES	GENERAL MANAGEMENT AIM
Special Protection Area	Approximately 1 ha west of Pickering Point: approximately 4% of the sanctuary (figure 2).	Discrete intertidal community requiring special attention.	Protect intertidal community from trampling by minimising recreational access.

- Indigenous cultural obligations relating to *Country* will be respected, and their knowledge promoted and interpreted in accordance with the views of the Traditional Owners.
- Research into Indigenous and historic cultural heritage of the sanctuary will be encouraged and supported as appropriate, in consultation with the Indigenous and wider communities.

The sanctuary visit

- Increased public awareness and appreciation of the sanctuary and its values will encourage more people to visit or view the sanctuary.
- Visitors will have opportunities to learn about the sanctuary and its special values.
- Visitor understanding and appreciation of the sanctuary's natural and cultural values will be enhanced by a range of information services and interpretation and education programs.
- Recreation opportunities will be provided in accordance with table 2.
- Visitor enjoyment will be enhanced by appropriate management of recreation activities.
- Visitors will be encouraged to adopt minimum impact techniques and to adhere to industry-developed standards appropriate to their activity.
- Visitors will have opportunities to observe marine life, enjoy water sports and participate in other recreational activities compatible with conservation objectives.

Community awareness and involvement

- Friends, volunteers, Indigenous and other community groups will be encouraged and supported to participate in areas of sanctuary management that relate to their interests.
- An awareness and understanding of the sanctuary's values, its management and the rich and diverse knowledge and aspirations of the Traditional Owners, and a sense of custodianship, will be developed among local communities and visitors.
- Strong collaborative partnerships will be developed with the Traditional Owners to facilitate the reflection of their knowledge, rights, and interests and aspirations, in the sanctuary's planning and management.
- Strong relationships will be developed and maintained with people, groups and communities with strong connections with or interests in the sanctuary, as a basis for encouraging their appropriate participation in the sanctuary's management.
- Strong collaborative partnerships will be developed and maintained with people, groups and communities with strong connections with or interests in the sanctuary and institutions to ensure that protection of the sanctuary is fully integrated and coordinated with the activities of other groups.

TABLE 2 SUMMARY OF RECREATIONAL OPPORTUNITIES

ACTIVITY	SANCTUARY	PICKERING POINT SPECIAL PROTECTION AREA (4% OF SANCTUARY)
Aircraft landing / launching (incl. hang-gliding, paragliding)	N	N
Aircraft over flying	Y	Y
Anchoring (section 6.3)	Y	N/A
Beachcombing (no collecting)	Y	Y
Bait collection	N	N
Bird watching	Y	Y
Boat launching / landing (no facilities, no vehicle access) (section 6.2)	Y	N
Camping	N	N
Chainsaws / Generators	N	N
Filming / Photography	Y	Y
Cycling	N	N
Diving / Snorkelling	Y	Y
Dogs / Dogs on leads	N	N
Driving on beaches	N	N
Education/Guided activities (section 6.8)	Y	Y
Feeding wildlife	N	N
Fires on beaches	N	N
Fishing (all forms)	N	N
Fossil collection	N	N
Horse riding	N	N
Licensed tours	Y	Y
Mooring	N	N
Motorised boating (general)	Y	Y
Nature photography / Painting	Y	Y
Non-motorised boating	Y	Y
Personal watercraft / Jet skiing	Y	Y
Prospecting / Metal detecting	N	N
Rockpool rambling	Y	Y
Sailing	Y	Y
Scenic viewing / Sightseeing	Y	Y
Sea kayaking (incl. launching/landing)	Y	Y
Shell collecting	N	N
Surfing	Y	Y
Swimming	Y	Y
Windsurfing / Kite surfing	Y	Y
Whale watching	Y	Y
Walking (intertidal zone – beach)	Y	Y
Walking (intertidal zone – rock platform)	Y	Y

Key:

Y Yes, subject to overlay prescriptions and conditions prescribed by legislation, permits or elsewhere in the plan.

N Not permitted.

N/A Not applicable.

4 STRATEGIES FOR NATURAL VALUES CONSERVATION

4.1 Geological and geomorphological features

The prominent geological features within and around Merri Marine Sanctuary are the remnants of a ridge system that has been progressively eroded and dissected by the pounding waves of the Southern Ocean. A string of offshore islands, including Middle Island and Merri Island, have been cut off from the mainland. A third island known as Breakwater Rock was connected to the mainland during the construction of the viaduct road. These islands are surrounded by a shore platform encompassing intertidal reefs around Pickering Point and extending out beyond the breakwater to the Annabella Reefs (Bird 1993).

The geology in this area consists of sand dunes above sandstone and calcarenite cliffs. These cliffs have been progressively hardened into calcarenite by the action of carbonates which have moved through the sandstone in groundwater. As storms gradually erode softer rock in the wave zone, rock platforms containing rock pools and gutters have been formed (Bird 1993).

The collapse of cliffs over time has left a maze of boulders in the sanctuary and jagged rocks along the shoreline. Picnic Cave, east of Thunder Point, collapsed in 1950, leaving a large heap of boulders (Gill 1984). There are many crevices, caves and overhangs under the shoreline, below the low tide mark. In the deeper waters (5–10 metres), there are significant areas of sand interspersed with areas of calcarenite reef.

Limited hydrogeographical data is available for this area. There are no known sites of geological or geomorphological significance in the sanctuary (Buckley 1993). The geological features of the sanctuary are key determinants of the habitats available for benthic biota (section 4.4).

Depth, the compositions of substrates and locations of reefs may also be important in managing threatening processes such as pollution. Coastal modifications such as dredging, stormwater disposal or construction activities could impact on sensitive geological

values through changes to natural patterns of erosion and deposition. Present visitor impacts are not thought to have a significant effect on geological values.

These islands and headlands are significant elements of *Country* for the Traditional Owners.

Aim

- Protect geological and seabed features in the sanctuary from damaging activities.

Management strategies

- *Manage visitor activities to minimise impacts on sensitive geological values.*
- *Disseminate detailed geological information about the sanctuary from the statewide habitat mapping program (section 4.4), to interested educational and other groups or individuals.*

4.2 Catchment and water quality

Water composition within Merri Marine Sanctuary is complex and extremely dynamic, and is influenced by many natural and human-induced factors. Currents predominantly carry water from the west and south towards the sanctuary. Continuous mixing of water on this coastline generally minimises cumulative pollution impacts, but a major pollution event at sea such as an oil spill could be catastrophic. The underwater impacts of pollution are often obscured and can remain undetected.

Pollution of the sanctuary could be derived from:

- estuaries, including the Merri River and Hopkins River
- the Warrnambool wastewater outfall
- marine waters outside the sanctuary.

Estuaries

Water from the Merri River estuary flows directly into the sanctuary at Pickering Point. The catchment of the Merri River and Spring Creek covers approximately 100 000 ha (Glenelg Hopkins CMA 2004). The land is used mainly for dairy, cattle and sheep farming

but also includes the Warrnambool urban area and a number of small townships. Lake Pertobe and Merri River Wetlands periodically drain into the river (Glenelg Hopkins CMA 2004).

The Merri River estuary is one of four Victorian estuaries classified as 'extensively modified' by the National Land and Water Resources Audit (EPA 2004a). A significant proportion of Warrnambool's stormwater flows into the river and sanctuary. Polluted runoff from accidental spills or inappropriate construction could release pollutants, which would reach the sanctuary with little warning.

Warrnambool City Council's stormwater management plan, prepared prior to the creation of the sanctuary, seeks to minimise pollutants transported into the Merri River and the sea (WCC 2001).

The present-day section of river known as the Merri River Cutting was constructed in 1859 in an attempt to prevent sand accumulation in the harbour (Sayers & Yule 1987). It was thought at the time that sand was being blown into the river where it ran parallel to coastal dunes. The Merri River Cutting diverts water inland from the old course but enters the bay at the same location as the old river course. During floods the river also follows the old river course and occasionally flows into the ocean at an old outlet known as Rutledge Cutting to the west. The river is occasionally opened artificially at Rutledge Cutting.

The Hopkins River estuary flows into the ocean about 5 km to the east of the sanctuary. Water from the Hopkins River is diffused significantly by the time it reaches the sanctuary, and is thought unlikely to pose a major threat to sanctuary values.

Sediment sampling in the Merri River has found particularly high concentrations of zinc and lead, and there have been several blue-green algae blooms in the river in recent years. An environmental audit of the Merri River estuary (EPA 2004a) identified that catchment activities adversely affect the estuary and that lack of biological and water quality data significantly reduced the opportunity to quantify impacts. This study made recommendations which aimed to reduce risks to the estuary. If pollutants enter the river or are released from sediments, the river could

funnel them into the sanctuary, resulting in potentially devastating impacts.

Because of the poor condition of the Merri River estuary and its proximity to the sanctuary, the estuary is an important concern for sanctuary management. Sanctuary values and potential estuary-borne threats need to be considered in the management of the Merri River estuary.

The sanctuary is within the Glenelg Hopkins Catchment. The Glenelg Hopkins Regional Catchment Strategy 2003–2007 (Glenelg Hopkins CMA 2003) provides a strategic management framework for the protection of assets within the catchment and recognises the threats posed to marine environments from catchment activities. The Victorian River Health Strategy provides a framework for improving the health of waterways (NRE 2002b). An estuary management plan for the Merri River is to be developed by the Glenelg Hopkins CMA.

Marine pollution

Marine pollution, especially oil spills, is a significant threat to natural values, aesthetics and public safety. An oil spill in the vicinity of the sanctuary could have serious impacts, including the oiling of Little Penguins, accumulation over the Pickering Point intertidal area and loss of recreation opportunities for visitors. Responses to pollution at sea are guided by the National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances (AMSA 1998).

As the manager of around 70% of Victoria's coastal areas, Parks Victoria plays a significant support role in the response to marine incidents (section 8.3). Responses to marine incidents often require a diverse range of skills and resources, involving coordination between multiple agencies including Parks Victoria and members of the community. In Victorian waters the *Victorian Marine Pollution Contingency Plan* (VICPLAN) (MSV 2002) outlines broad response arrangements to a potential oil or chemical spill. Oil or chemical spills in or near the sanctuary are reported and managed in accordance with the Port of Portland Region *Marine Pollution Contingency Plan* (section 8.3).

Litter can entangle or smother marine flora and fauna. Littering is illegal within and outside the sanctuary. Potential sources of litter include:

- litter from urban areas carried to the sanctuary by stormwater systems and the Merri River
- rubbish left on beaches or blown into the sanctuary from adjacent areas
- flotsam and jetsam from vessels within or outside the sanctuary (section 4.3).

Promotion of sanctuary values can help to increase awareness of the need to prevent litter entering the sea.

Litter tends to accumulate on the Stingray Bay Beach and on the sandy floor of the sanctuary, and lodges amongst rocks. Periodic litter collection prevents injury to visitors, maintains the aesthetic value of the area, prevents injury to wildlife, and prevents the recirculation of litter into the marine environment. Mechanical clean-up of litter could remove biological material that provides food or shelter for marine organisms or helps to sustain biological processes. It has not previously been undertaken in the sanctuary.

Potential impacts of marine pollution on marine flora and fauna include:

- smothering and light reduction caused by sediments
- changes in algal composition as a result of nutrient enrichment with nitrogen and phosphorus
- entanglement in and ingestion of litter, particularly thin plastics, by marine fauna.

Wastewater

The Warrnambool wastewater outfall, which is 500 m west of the sanctuary, is managed by Wannon Water. The outfall discharges approximately 10 mega litres of wastewater per day, consisting of domestic sewage, milk processing wastes, and abattoir and light industrial wastes. Wastewater was untreated until 1991, but has been treated to secondary standard since 1996 (WCC 2001).

Discharges from the outfall must comply with the State Environment Protection Policy – Waters of Victoria and a waste discharge

licence issued by the Victorian EPA (section 8.3). Wannon Water has a monitoring program to assess the impact of the outfall (Water Ecoscience 2002c). It also undertakes a range of preventative measures, including community education, and seeks to optimise treatment efficiency and minimise pollution of the sea.

Monitoring results indicate that the outfall has a minimal impact on the natural values of the sanctuary or public safety, but the close proximity of this outfall is cause for concern (Water Ecoscience 2002a; b). Unforeseen impacts are also possible and should also be considered.

Aims

- Minimise the impact of threatening processes that occur in the catchment and Merri River.
- Minimise unnatural fluctuations in the water quality of the sanctuary.
- Minimise the impact of pollution and litter on sanctuary values.

Management strategies

- *Work collaboratively with agencies including the Western Coastal Board, Glenelg-Hopkins CMA, Wannon Water, DSE and DPI and other relevant groups (section 8.3) to:*
 - *identify and research threats to sanctuary values associated with water quality*
 - *establish and monitor water quality targets for the sanctuary*
 - *develop and implement consistent and cooperative education programs encompassing a marine pollution theme*
 - *minimise the threat of pollution impacts on sanctuary values.*
- *Cooperate with Warrnambool City Council to improve protection for sanctuary values when the Warrnambool Stormwater Management Plan is reviewed.*
- *Cooperate with the South West Regional Waste Management Group in specific initiatives to prevent and manage land-*

based pollution likely to impact on the sanctuary.

- *Where necessary, and in an appropriate manner, remove litter from the sanctuary to protect public health and sanctuary values, in conjunction with adjoining land managers and community groups where appropriate.*
- *Do not permit the mechanical clean-up of Stingray Bay Beach unless necessary to ensure public health and safety, or as part of a response to an oil or chemical spill.*

4.3 Hydrodynamics

The mean surface water temperature varies seasonally in the Otway marine bioregion from 14 to 18°C. The coastline faces south towards the wild storms and south-westerly swells of the Southern Ocean. The West Wind Drift causes a predominantly easterly current through the sanctuary, but this changes from time to time depending on weather conditions (IMCRA Technical Group 1998).

High tides, storms and larger swells sometimes cause significant sand movement. The mouth of the Merri River is often closed, but freshwater inflow also influences local hydrodynamics and sand movement.

Modifications to this area, including the construction of the breakwater, have resulted in a significant accumulation of sand adjacent to the sanctuary. In the past, the harbour area was regularly dredged, and the sand was deposited adjacent to the sanctuary, west of the Stingray Bay car park. Dredging in the sanctuary is now prohibited. Local hydrodynamics have established equilibrium since the modifications made to this area (sections 2.3 and 6.2).

Because further human-induced changes to local hydrodynamic processes could affect the values of the sanctuary, any proposals for new infrastructure, including artificial reefs, will generally be inappropriate in Marine National Parks or Marine Sanctuaries. Research on local hydrodynamics would facilitate improved understanding and protection of sanctuary values. Natural hydrodynamic events such as storm surges and regular sand erosion or deposition are considered to be ongoing natural processes.

The *Warrnambool Foreshore Urban Design Framework* identifies potential commercial developments in the breakwater area and yacht club adjacent to the sanctuary (WCC & Connell Wagner 1999). Structural modifications to the breakwater, marina construction, dredging and construction projects could impact on hydrodynamics unless carefully planned and managed (section 7.2).

A large wooden baffle is located near the sanctuary boundary at the mouth of the Merri River. The intended role of this structure is unclear, but it is unlikely to affect sanctuary hydrodynamics.

Aim

- Minimise impacts on sanctuary values from human-induced changes to local hydrodynamics.

Management strategies

- *Work with Warrnambool City Council to minimise potential impacts on sanctuary values from modifications to harbour, breakwater and yacht club areas.*
- *Do not permit the construction of new infrastructure in the sanctuary.*
- *Liaise with research partners and other interested institutions and agencies to focus research on local hydrodynamics that facilitates improved understanding and protection of sanctuary values.*

4.4 Habitats and communities

The natural values of the sanctuary, including the diversity and abundance of waterbirds and aquatic species which provide seasonal food sources, are an intrinsic element of *Country*. Traditional Owners maintain a sophisticated knowledge of the communities and species. Key species such as the Southern Right Whale are totem species for the local Indigenous people and have great spiritual significance.

All forms of extraction, including recreational and commercial fishing, are prohibited within the sanctuary. The feeding of animals, including fish and birds, is not permitted in Marine National Parks or Marine Sanctuaries.

Current research and ongoing monitoring is targeted at collecting baseline biological

information that will be used to understand long-term changes in population, abundances, community structure and ecological processes during the life of this plan. Further research on threatening processes and knowledge gaps would facilitate improved understanding and protection of communities.

As a part of the Victorian Subtidal Reef Monitoring Program, a long-term monitoring site has been established within the sanctuary. Where appropriate, research and monitoring compares this site with others outside the sanctuary boundaries, including one adjacent to the Warrnambool Breakwater (Hart et al. 2004; Edmunds & Hart 2005). The results will enable an assessment of the ecological condition of the sanctuary to be made.

The Deakin University Underwater Club and other local scuba divers have commenced a community-based monitoring program in the sanctuary (section 8.2) (Koss et al. 2005). This program, known as Sea Search, complements the Victorian subtidal reef monitoring program.

All species recorded within the sanctuary or nearby that are listed as threatened or protected by international agreements or other legislation (e.g. JAMBA, CAMBA) are either birds or large marine mammals, including the Humpback Whale and Southern Right Whale. This reflects the current vertebrate focus of threatened species management.

Environmental management within the sanctuary takes a habitat-based rather than species-based approach. Management of marine ecological communities within the sanctuary, rather than threatened species, is also likely to protect and enhance threatened species populations. Whole-of-habitat management may also result in the protection of species not yet identified because of their rarity, cryptic nature, or lack of search effort.

Subtidal soft sediment communities comprise approximately half of the sanctuary's sea floor. No surveys have been undertaken specifically on these communities. Commonly seen species include the Draughtboard Shark, Southern Eagle Ray and Sea Mullet.

The Victorian Subtidal Reef Monitoring Program provided the first survey of subtidal reefs in Merri Marine Sanctuary (Hart et al. 2004). The sanctuary supports the second-

highest number of algal species in subtidal reefs monitored on the western Victorian coast. String Kelp, which forms areas of kelp forest and provides important habitat for other species, is present. The most common invertebrate species are molluscs. Compared to other monitoring sites, very low numbers of Black-lip Abalone were recorded. Sea Sweep, Pot-bellied Seahorses and Southern Rock Lobster are frequently seen on subtidal reefs in the sanctuary.

Pelagic communities are not a large component of the sanctuary, however Bottlenose Dolphins and Australian Fur Seals are two common pelagic species here.

Intertidal reefs, particularly the Pickering Point intertidal reef, are very diverse (Handreck & O'Hara 1994). An intertidal monitoring site is to be established at Pickering Point intertidal reef as part of a statewide monitoring program. This will provide important information about the condition of the reef and help to identify any long-term impacts or change.

Sun-bleached red coralline algae form a carpet of colour over the rock platform, and shallow pools are fringed by Sea Lettuce and Neptune's Necklace. At the edge of the reef is Bull Kelp and Bubble Weed. Common invertebrates include snails, limpets, crabs and anemones. A survey of the reef by Handreck and O'Hara (1994) found over 80 species of invertebrates, which was the highest of the calcarenite reef sites surveyed in the Warrnambool area. The western portion of Pickering Point intertidal reef is particularly diverse (A. Bellgrove, pers. comm. 2005) and has been designated a Special Protection Area (sections 3.2 and 6.5).

The sandy beach community at Stingray Bay is unsurveyed. It is frequently visited by feeding shorebirds. Life on sandy beaches is not obvious but these habitats support many invertebrate species. This sandy beach could be affected by litter or other pollutants carried by the Merri River, and by illegal activities such as the collection of worms for bait (section 4.2).

Middle Island and Merri Island, both surrounded by the sanctuary, are nesting sites for Little Penguins, Black-faced Cormorants and Short-tailed Shearwaters (Overeem 2000). Many other bird species such as Pacific Gulls

are also often seen here. Vegetation consists of coastal species, including Seaberry Saltbush, Beaded Glasswort, Coastal Pigface and Cushion Bush (Overeem 2000). Little Penguins and Short-tailed Shearwaters are vulnerable to predation from foxes and dogs, and rats may destroy eggs (section 4.6). The eggs, young and burrows of penguins and shearwaters can be destroyed by trampling. Soil erosion and invasion of weed species on the islands is also a threat to nesting species and other vegetation (section 8.3).

A separate management plan for Middle Island, identifies management needs for the protection of the Little Penguin (CRAC & WCC 2001).

Aims

- Protect marine ecological communities and indigenous flora and fauna, and allow natural processes to continue.
- Improve knowledge of marine ecological communities, flora and fauna and threatening processes to improve management, protection and appreciation.

Management strategies

- *Continue the long-term subtidal reef habitat monitoring program within and adjacent to the sanctuary, as part of the Victorian Subtidal Reef Monitoring Program.*
- *Establish and implement a long-term intertidal reef habitat monitoring program in the sanctuary as part of statewide marine habitat monitoring programs.*
- *Map habitats at scales suitable for management purposes, in accordance with statewide habitat mapping programs.*
- *Implement priority actions from approved action statements or recovery plans to address threats to threatened species or communities listed under the Flora and Fauna and Environment Protection and Biodiversity Conservation Acts.*
- *Assess the major threats to the sanctuary's habitats and communities, and develop risk management responses as appropriate.*

- *Work with Traditional Owners to identify and where appropriate, integrate Indigenous knowledge into management programs.*
- *Manage visitor activities to minimise impacts to flora, fauna and communities particularly in relation to compliance with no-fishing provisions and disturbance to intertidal reefs (sections 6.1, 6.2 and 8.3).*
- *Liaise with research partners and other interested institutions and agencies to direct potential research into key threatening processes and major knowledge gaps.*
- *Provide advice and support to Warrnambool City Council, through involvement in the Middle Island Steering Committee, for the protection of Middle Island and Merri Island natural values with emphasis on conservation of the Little Penguin (section 4.6).*

4.5 Landscape and seascape

The landscapes and seascapes associated with the sanctuary are part of a key element of the local coastal setting. They are also an intrinsic element of *Country* of the Traditional Owners. The rugged coastal landscapes and seascapes associated with the sanctuary make an important contribution to local lifestyles and the local tourism industry.

Views out to sea and over the sanctuary from the Thunder Point lookout in particular are an attraction for many visitors to Warrnambool. Visitors also enjoy landscapes and seascapes from walking tracks, lookouts near Pickering Point or from boats. The reefs and waters of the sanctuary are key elements of this landscape and seascape.

People see the sanctuary from different perspectives. Tourists are primarily involved in a visual sanctuary experience from key vantage points overlooking the sanctuary. Local residents have a variety of interests, ranging from scientific to recreational. Many boat users also have a strong affinity with the beauty of the coast, an awareness of local landmarks and an appreciation of sea conditions in and around the sanctuary. Divers and snorkellers see the sanctuary as a fascinating, underwater experience, full of marine life.

Key visual experiences include:

- large south-westerly swells crashing into reefs and rocky shores
- the wild Southern Ocean
- an array of underwater colour, diversity and discovery
- a variety of colours, textures and patterns associated with rock pools, rocks and rock platforms.

The *Warrnambool Planning Scheme* (WCC 2003), which includes a significant landscape overlay on the adjoining coastal strip, provides a framework for assessing proposals for developments that could have an impact on the landscapes associated with the sanctuary (section 7.2). Development in the Breakwater Precinct could affect landscape values associated with the sanctuary. A local planning policy for the Breakwater Harbour Precinct (WCC 2003) also provides direction for protecting the coastal landscape in the vicinity of this tourist and development precinct (section 7.2).

The *Great Ocean Road Region Landscape Assessment Study* (DSE 2003a) was prepared as a component of the *Great Ocean Road Region – Land Use and Transport Strategy 2004* (DSE 2004b). The assessment of seascapes associated with the sanctuary was not within the scope of the study. However, it did make recommendations for landscape protection at Warrnambool.

Boundary markers and signs could affect landscape values. Careful design of signs for the coastal setting and prevention of multiple signs through coordination with council should minimise these problems (section 6.1).

Landscape character types are used to broadly characterise different landscape types. The sanctuary is within Landscape Character Type 3, Western Coastal Cliffs Precinct 3.2, Nirranda Coast and Hinterland. The coastal cliffs landscape is of State significance (DSE 2006). Further details about landscape management objectives and guidelines will be provided in the municipal reference document for the area.

Siting and Design Guidelines for the Victorian Coast (VCC 1998) provide guidelines to assist in the protection of coastal landscape values.

Aims

- Protect landscape and seascape values.
- Minimise the visual impact of signs, infrastructure and management activities associated with the sanctuary.

Management strategies

- *Liaise with Warrnambool City Council to minimise the visual impact of infrastructure on the landscape and seascape values of the sanctuary (section 7.2).*
- *Work with Traditional Owners to identify and protect significant landscapes from management and visitor activities, and where appropriate, include in interpretation and education programs (sections 5.1, 6.1 and 7.2).*

4.6 Marine and other pests

Over 100 exotic marine species are known to have become established in Victorian marine waters (Hewitt et al. 1999). Some have become marine pests. A survey of marine pests has not been undertaken in the sanctuary, or in the adjacent harbour area. However, there are no prominent pest species known to be present.

Marine pests can have a devastating impact on Marine National Parks and Marine Sanctuaries. The introduction of marine pests into Victorian waters is listed as a potentially threatening process on Schedule 3 of the Flora and Fauna Guarantee Act (FFG). Victoria's management priorities in relation to marine pests are set out in the relevant FFG Action Statement (NRE 1999b).

Prevention of marine pest invasions is the most effective management option. Prevention involves reducing the risk that a pest will be introduced to the sanctuary. In a very limited number of cases, with specific criteria, control measures may be attempted for established pest populations generally as part of a coordinated regional or national response. However, experience elsewhere has shown that proposals to control established marine pests need to consider fully their likely effectiveness. The interconnectedness of the marine environment and the ability of many marine pests to migrate over long distances mean that control measures may be feasible only in limited circumstances. For example,

using techniques that are successful on land, such as physical removal by hand, might make the situation worse, as some marine pests regenerate fully from fragments dislodged during removal. Where implemented, control measures will meet national guidelines for managing marine pests. Because of the possibility of misidentifications or exacerbating the pest problem, control measures will need to be part of authorised programs. In some cases, further nationally coordinated research is required into control measures.

Victorian marine pest emergency management arrangements (*Interim Victorian Protocol for Managing Exotic Marine Organism Incursions*) (NRE 1999c) will form the basis for responding to new introductions and existing incursions of marine pests (section 8.3). The adoption of the *Waste Management Policy (Ships' Ballast Water)* (EPA 2004b) for Victorian waters will help reduce the risk of marine pest incursions from ships' ballast water. Emergency responses to marine pest outbreaks in Victoria are managed as part of agreed national arrangements for marine pest emergencies. The Consultative Committee for Introduced Marine Pest Emergencies provides national oversight. Parks Victoria actively supports the protocol by adopting best practice within the organisation and educating and informing the community about prevention measures.

Marine pests could be transported to the nearby harbour on boat hulls or equipment. The harbour is managed by Warrnambool City Council and is used by smaller commercial and recreational vessels. These vessels generally operate locally, but smaller vessels from elsewhere visit from time to time. The application of pest prevention strategies in the harbour is the primary focus for the protection of the sanctuary from marine pest incursions.

A spinid worm is present within sand sediments in the area, but its impact on these communities has not yet been assessed (L. Avery pers. comm. 2005). Port Fairy Port is 30 km to the west of the sanctuary and the Port of Portland is 100 km to the west. A survey of marine pests at Port Fairy has not been undertaken. A survey in the Port of Portland found a sabellid worm, which was considered the only confirmed exotic species abundant

enough to cause a significant ecological impact (MAFRI 1997). Currents could transport pests towards the sanctuary, but most marine pests are unlikely to survive in this environment for sufficient periods to recolonise at the sanctuary. However, marine pests could colonise in adjacent aquatic areas such as the Merri River or Lake Pertobe and spread into the sanctuary (section 7.2).

Vessel cleaning and maintenance guidelines to help prevent the spread of marine pests (DSE 2004a) aim to reduce the risk of spreading marine introduced pests by providing practical solutions for vessel operators for cleaning gear and hulls. Supporting initiatives include *EPA Victoria's Cleaner Marinas Guidelines* (EPA 1998).

Parks Victoria Rangers, Fisheries Victoria Fisheries Officers, community-based organisations (e.g. dive clubs), and visitors play an important role in the monitoring and early detection of marine and other introduced pests in the sanctuary.

Foxes, dogs and cats present a serious risk to the viability of Little Penguins and Short-tailed Shearwater and Black-faced Cormorant populations on Middle and Merri Islands. Foxes have been responsible for the loss of large numbers of Little Penguins in recent years. Pest animal management on these islands is the responsibility of the Warrnambool City Council, guided by the management plan for Middle Island, which focuses on the conservation of the Little Penguin (CRAC & WCC 2001) (section 8.3).

Parks Victoria provides support for integrated pest animal management programs where appropriate. The coordination of pest animal programs between agencies and across land tenures can be challenging, and Parks Victoria is committed to working cooperatively with Warrnambool City Council on this issue.

Aims

- Minimise the risk of introduction of marine pests by human activities, and their subsequent establishment in the sanctuary.
- Establish arrangements for the detection of new incursions within the sanctuary in support of Victorian marine pest management arrangements.

- Implement national or Victoria-wide control arrangements as they relate to the sanctuary.
- Protect birds and other wildlife within and adjacent to the sanctuary from pest animals.

Management strategies

- *Support DSE in educating Parks Victoria staff, Fisheries Officers and the community to identify marine pests.*
- *Encourage community groups, researchers, licensed tour operators and contractors to integrate the identification of marine pests into their activities and to report any sightings.*
- *Ensure that the detection of marine pests is reported in accordance with Victorian pest management arrangements and recorded on Parks Victoria's Environmental Information System and other relevant databases.*
- *Establish an ongoing program to minimise the risk of marine pest introduction and subsequent spread that addresses improving the understanding of the potential means of introduction and spread and formalising arrangements for prevention, reporting, monitoring and response.*
- *Undertake authorised pest programs only where research indicates that control or eradication is feasible and likely to be effective or as part of a coordinated regional or national response.*
- *Avoid translocation or new introductions by promoting boat-cleaning protocols for all recreational boats and contractors (section 6.3) in accordance with the DSE brochure 'Aquatic Pests: Treat 'em mean – keep your boat clean'.*
- *Ensure that management vessels operating in the sanctuary are maintained according to Victorian Government boat-cleaning protocols (DSE 2004a).*
- *Include boat-cleaning protocols in contracts, licences or permits of contracted vessels, research vessels and licensed tour operator vessels operating in or near the sanctuary.*
- *Provide advice and support to Warrnambool City Council, through involvement in the Middle Island Steering Committee, for the management of pest animals which present a risk to Little Penguins, Short-tailed Shearwaters and other species on Middle Island and Merri Island.*

5 STRATEGIES FOR CULTURAL VALUES CONSERVATION

5.1 Indigenous cultural heritage

The *Maar* (the people) of south western Victoria are part of a nation of tribes and clans extending across the region. The *Maar* have a long and close relationship with sea *Country*, which they aspire to maintain and progress in partnership with Parks Victoria.

Indigenous tradition indicates that the sanctuary is within the *Country* of the Peek Wurrung. Indigenous tradition indicates that the sanctuary is part of the *Country* of the Gundidj Mara and the Kirrae Whurrong. The Kirrae Whurrong are represented by the Kirrae Whurrong Native Title Group. The Gundidj Mara people belong to an area extending from the Hopkins River to the South Australian border. Kirrae Whurrong belonged to an area from Warrnambool extending east to the Gellibrand River. The clan thought to have lived in the vicinity of the sanctuary at the time of European arrival was Yarrer gundidj. This clan is a part of the Dhauwurd wurrung language group, speaking the *Big wurrung* (Kelp lip) dialect (Clark 1990).

Despite a violent and tragic history since early European contact in the 1830s and 1840s, Indigenous communities remain in the Warrnambool area. Local Indigenous communities include Framlingham Aboriginal Trust, Kirrae Whurrong Native Title Group, Gunditjmara Aboriginal Co-operative and Worn Gundidj Aboriginal Co-operative.

The *Maar* creation story illustrates the spiritual connection of the Gundidj Mara with the sea. This story explains how *Punjil* created 'earth, trees, man and woman'. '*Palian*, brother of *Punjil*, made all seas, rivers, creeks and waters, also all the fish in the oceans, seas and rivers. He governs the waters, was always in the waters, walking, bathing, and going over the seas.' This story also demonstrates the connection with nearby Deen Maar Island and the afterlife.

Language and other aspects of Indigenous cultural heritage are relatively well documented in south western Victoria. This provides opportunities to regenerate some aspects of culture which have been partially lost. The language used in this plan is extracted

from a dictionary of local languages (Gunditjmara 1996). Other cultural information is derived from (Dawson 1881) and representatives of local indigenous communities (L. Clarke pers. comm. 2004, L. Haradine pers. comm. 2004).

The Yarrer gundidj utilised a range of *toolart* (food) from the *meerteeyt* (sea), including *yarram* (crayfish), *tyaleek* (abalone) and *yeerrarr* (saltwater fish). Adjacent lakes, rivers and wetlands were also rich in perennial and seasonal foods such as *kooyang* (eel) and *moorrong* (Yam Daisy). Some marine species, including *koontapool* (whales), bear special significance as totems for the Yarrer gundidj. The name of the sanctuary, 'Merri', is derived from the word for stone. There are *woorn* (camp) sites in Thunder Point Coastal Reserve adjacent to the sanctuary, but older aspects of the archaeological record have been destroyed during the natural erosion of the coastline. Cultural material could still be present beneath the waters of the sanctuary.

Indigenous people are concerned about the state of *Country* and their role in its protection. Local Indigenous communities have been involved in the development of cultural interpretation and other projects at Middle Island and Thunder Point Coastal Reserve. Framlingham Aboriginal Trust and Winda Mara Aboriginal Corporation have prepared the Kooyang Sea Country Plan, which seeks to establish partnerships with relevant agencies for the protection of sea *Country* values (FAT & WMAC 2004).

Parks Victoria respects views of the Traditional Owners and seeks to integrate their knowledge, interests, rights and aspirations for *Country* in planning and management of the sanctuary (Parks Victoria 2005). Parks Victoria protects Indigenous places and objects from disturbance and damage in partnership with the Traditional Owners and in cooperation with the scheduled Aboriginal community and AAV (section 8.3), and in accordance with relevant legislation including the Archaeological and Aboriginal Relics Preservation Act and the Aboriginal and Torres Strait Islander Heritage Protection Act. Guidelines for Working with Aboriginal Communities and Protection of

Cultural Sites (Parks Victoria 2002a) guide the development of management programs to ensure the protection of cultural sites.

It is an offence to damage, interfere with or endanger an Aboriginal site, place or object without obtaining prior written consent from the scheduled Aboriginal community.

Issues relating to the protection of such cultural heritage and the involvement of the scheduled Aboriginal community are approached in accordance with these Acts. Under the Commonwealth Act, the Framlingham Aboriginal Trust is the scheduled Aboriginal community.

Works programs are assessed to integrate relevant Indigenous practices and minimise the potential for impact of management activities on Indigenous cultural heritage, in consultation with the Traditional Owners and the scheduled Aboriginal community.

Issues relating to Native Title including management actions are dealt with according to the Native Title Act (section 2.5).

Aims

- Protect Indigenous places and objects from interference or damaging activities.
- Support the views of the Traditional Owners in managing the sanctuary.

Management strategies

- *Respect the views of the Traditional Owners and the cultural obligations of Indigenous communities.*
- *Integrate the Traditional Owners' knowledge, interests, rights and aspirations for Country, in all planning and management in consultation with the scheduled Aboriginal community and in accordance with Parks Victoria's operational policies (sections 4.1, 4.4, 4.5, 6.1, 7.1 and 8.2).*
- *Maintain confidentiality in respect of Indigenous cultural obligations, knowledge, places, objects and aspirations, in accordance with the views of the Traditional Owners (sections 6.1 and 8.2).*
- *Share detailed habitat information about the sanctuary and in collaboration with the*

relevant Indigenous communities and in liaison with AAV, target protection and other management activities (section 4.4).

- *Collaborate with the Traditional Owners when developing interpretive programs and to identify Indigenous cultural heritage suitable for promotion and interpretation (sections 6.1 and 8.2).*

5.2 Maritime and other cultural heritage

There are no registered shipwrecks or other registered non-Indigenous cultural sites within the sanctuary. However, the waters of the sanctuary have an extensive history as a harbour and therefore there is a high likelihood of unrecorded sites and relics. There are a number of shipwrecks recorded in waters surrounding the sanctuary, including Lady Bay. The locations of many of these wrecks are unknown. Early photographs of the area are archived in Warrnambool's History House.

In the early 1840s, Breakwater Rock, Middle Island, Merri Island and surrounding reefs formed the only shelter in Lady Bay but did not provide sufficiently safe anchorage. In 1850, a jetty 180 metres long was built to the north of the river mouth. It was damaged by storms and broke up in 1862 (Bird 1993). The current breakwater was completed in 1890, allowing the transport of agricultural produce to steamships by a horse-drawn tramway (Sayers & Yule 1987).

The Merri River diversion project (section 4.2) formed the river's current course and was completed in the 1860s. A lightstation and cottage were erected on Middle Island in 1859 but were later relocated to Flagstaff Hill Maritime Museum.

The remnants of a small steel barge used to transport the lightstation to Middle Island are located in the sanctuary, but their significance has not been assessed.

Any places of historic and cultural significance are managed in accordance with the Burra Charter of Australia ICOMOS and the provisions of the *Heritage Act 1995* (Vic.) and Parks Victoria's *Heritage Management Strategy* (Parks Victoria 2003b). Heritage Victoria has primary responsibility for the management of shipwrecks within the sanctuary (Heritage Victoria 2006) in

accordance *Historic Shipwrecks Act 1976* (Cwlth). Parks Victoria has established a Memorandum of Understanding with Heritage Victoria, which identifies respective roles and responsibilities with regard to protection, compliance and interpretation of shipwrecks and shipwreck artefacts.

Aims

- Conserve and protect places and values of historic and cultural significance.
- Encourage learning and understanding about the historical heritage of the sanctuary.

Management strategy

- *In conjunction with Heritage Victoria, assess the significance of the remnants of the steel barge in the sanctuary.*

6 STRATEGIES FOR VISITORS

6.1 Information, interpretation and education

Providing information, interpretation and education can help orientate and inform visitors, increase visitor enjoyment and satisfaction, foster an understanding and appreciation of the sanctuary's special natural and cultural values, build understanding of management activities, and help visitors to experience the sanctuary in a safe and appropriate manner. Parks Victoria delivers information, interpretation and education to visitors by various means, including its website, ranger patrols, Marine Notes, signage, tourism brochures and other publications, displays, and licensed tour operators. These services may be developed and provided in collaboration with other agencies.

Having a representative system of Marine National Parks and Marine Sanctuaries in Victoria presents a unique opportunity to communicate the features and benefits of a statewide system of marine protected areas with visitors and the broader community. At the same time, a range of information, interpretation and education products that are specific to the key features of the sanctuary will be provided.

Trampling has the potential to threaten sensitive intertidal communities if visitor numbers and activities are not carefully managed. Parks Victoria (2003c) has developed Minimal Impact Guidelines (available on the Parks Victoria website, www.parkweb.vic.gov.au) in partnership with providers of education to help manage these activities, and works with the Department of Education to encourage schools to notify Parks Victoria (on 13 1963) of any intended school group visits. Prior notification will allow teachers to obtain relevant education materials and advice on suitable sites, and enable Parks Victoria to monitor the number and timing of visits.

Orientation and Information

Orientation helps visitors to navigate as they approach or enter the sanctuary, and to understand appropriate and safe behaviour.

Key orientation information for the sanctuary is available:

- at www.parkweb.vic.gov.au
- in Marine Notes
- on signs at the breakwater boat ramp
- via shore-based boundary markers (section 7.2)
- via signage at most access points (figure 2).

Because of its small size and location, Merri Marine Sanctuary is easy to demarcate for boat users. However, visitors can access the sanctuary from many points on land, so it is difficult to provide comprehensive visitor orientation and information signage.

Interpretation

Most Marine National Parks and Marine Sanctuaries in south-western Victoria are off-shore and difficult to access without specialised skills and equipment. Merri Marine Sanctuary has a large intertidal reef with good visitor access, and is close to Warrnambool, making it a good location for marine interpretation, except for the Special Protection Area near Pickering Point (sections 3.2 and 6.5) and in rough weather (section 6.2).

An annual summer interpretive program is implemented through the Coast Action / Coastcare program. Warrnambool and the Merri Marine Sanctuary are an important focus for this program. Important topics to be integrated into information, interpretation and education programs for the sanctuary include:

- the location of, and activities permitted in, the sanctuary
- the diverse natural values (section 4.4) and significant cultural values (sections 5.1 and 5.2)
- human impacts on the sanctuary and their management.

Education

Local schools have often used the sanctuary and Pickering Point intertidal area for education activities. Deakin University and

South West TAFE also use the sanctuary regularly (section 8.3). Parks Victoria frequently delivers education activities, including rockpool rambles, to local schools.

The sanctuary offers a range of education and interpretation options, but restricted access and exposure to extreme weather make planning for schools very difficult. Schools are encouraged to notify Parks Victoria of any intended school group visit. This alerts teachers to relevant safety information, education resources and protection guidelines for the Pickering Point Special Protection Area (sections 6.2 and 6.5).

The provision of a partially sheltered outdoor classroom at the old aquarium site has been suggested as a way of enhancing sanctuary visits by school groups (section 7.2).

Aim

- Promote and encourage visitors and students to discover, enjoy and appreciate the sanctuary's natural and cultural values in a safe and appropriate manner through information, interpretation and education.

Management strategies

- *Work collaboratively with Warrnambool City Council to provide appropriate visitor orientation, safety messages, interpretation and minimal impact information at visitor access sites in Thunder Point Coastal Reserve. Collaborate with the Council and DSE to review existing signage at Stingray Bay, Pickering Point, Thunder Point, and Middle Island and develop and implement a signage plan for each site. Priorities include:*
 - *review of signage about access to Middle Island*
 - *an interpretive sign about the intertidal values of the sanctuary at Pickering Point (section 6.5)*
 - *consolidation where appropriate*
 - *themes consistent with adjacent precincts and sympathetic to the coastal setting.*
- *Investigate opportunities to further increase awareness of the sanctuary in the local community through Deakin*

University, South West TAFE, schools, Coast Action / Coastcare's Marine Care Program, media, events and arts projects.

- *Provide and support high-quality opportunities for a range of user groups to discover, experience and understand the sanctuary's natural and cultural values.*
- *Develop an educational and interpretive program which complements the existing Coast Action / Coastcare summer interpretive program. Deliver messages to visitors about the following values and themes:*
 - *appreciation of the diversity and beauty of our local marine life*
 - *the potential effects of human activities on the sanctuary, especially pollution carried into the Merri River*
 - *Indigenous tradition and practices, and the importance of the marine environment to local Indigenous communities (section 5.1)*
 - *the importance of appropriate visitor behaviour in protecting the flora, fauna and ecosystems in the sanctuary*
 - *safety issues relating to access and activities in the sanctuary.*
- *In partnership with Shipwreck Coast Tourism and other groups, investigate and develop innovative and stimulating alternatives for interpreting the sanctuary at locations outside the sanctuary.*
- *Continue to encourage and support educational and interpretation activities by other groups and organisations that improve community understanding of the marine environment and that benefit the sanctuary, including Coast Action / Coastcare.*

6.2 Access

Victoria's Shipwreck Coast is characterised by difficult and sometimes dangerous navigation and access. The partial shelter from south-westerly swells provided by Middle Island and Merri Island was the catalyst for the development of this area as a harbour (Sayers & Yule 1987). Its proximity to Warrnambool means that it is generally accessible for local residents, school groups and other visitors.

The sanctuary can be visited by boat, but its small size, the prevailing swell and a number of prominent reefs make it safe only under calm conditions. There are no boat launching facilities in the sanctuary. A boat ramp near the breakwater provides access for vessels with trailers, and the harbour provides anchorage for larger vessels. Vehicles are not permitted on any beaches in the sanctuary (section 6.3).

Scuba divers and snorkellers can access the sanctuary at Breakwater Rock and Pickering Point, or from the beach in Stingray Bay. Stingray Bay also provides access for swimming, surfing and other activities.

There are several car parks adjacent to the sanctuary. Walking tracks and steps at Thunder Point Coastal Reserve provide foot access to the sanctuary (figure 2). All access infrastructure, including roads, car parks, walking tracks, steps and boardwalks, are managed by Warrnambool City Council (sections 7.1, 7.2 and 8.3). At low tide, visitors on foot can access Stingray Bay beach and the Pickering Point intertidal area, but at high tide the sanctuary is completely submerged. There is currently a drop at the bottom of steps which provide access to the Pickering Point intertidal area.

The sanctuary adjoins a number of well-known visitor attractions and landmarks. There is visitor information on Middle Island provided by the Warrnambool City Council and on the adjacent Thunder Point Coastal Reserve. A coordinated and planned approach to visitor orientation is required to ensure clear visitor information is available about all attractions in the vicinity. Signage which is well planned and consistently themed will also help to establish a sense of arrival for visitors to the sanctuary (section 6.1).

Visitors to Middle Island must walk along Stingray Bay beach and wade through a channel at low tide to reach the island. This can be dangerous if visitors attempt to cross through deep water, during unpredictable sea conditions or if they are unprepared for this activity. Further, visitors need to give consideration to the sea and tide conditions on their return from the island (sections 6.5, 6.9 and 8.3).

Aim

- Support and manage the provision of appropriate and safe access to the sanctuary.

Management strategies

- *Work collaboratively with Warrnambool City Council on issues relating to access to the sanctuary from adjacent land.*
- *Negotiate an agreement with Warrnambool City Council for ongoing maintenance of the access steps to the Pickering Point intertidal area.*

6.3 Recreational boating and surface water sports

The sanctuary is sometimes used for sail boarding, surfing, sea kayaking and recreational boating, including the use of personal watercraft. Fishing is prohibited within the sanctuary.

Vessels are permitted to pass through the sanctuary, and normal boating regulations and safety guidelines apply in these waters. Marine Safety Victoria and the Victoria Police are responsible to ensure operators abide by recreational boating regulations (sections 6.9 and 8.2). There are rules to ensure personal watercraft are not operated within 50 metres of swimmers. As in all Victorian coastal waters, a speed limit of five knots applies within 200 metres of the water's edge in the sanctuary (MSV 2005).

State Environment Protection Policies prohibit vessel operators from discharging sewage, oil, garbage, sediment, litter or other wastes to surface waters in any Victorian waters. While the EPA has primary responsibility for pollution management, Parks Victoria supports the provision of waste receiving and pump-out facilities at marinas, ports, and other suitable sites.

Parks Victoria undertakes land-based patrols of the sanctuary to monitor compliance with the National Parks (Park) Regulations 2003, increase awareness of the sanctuary, promote opportunities for participating in management and provide marine interpretive advice. Department of Primary Industries Fisheries Officers undertake regular water-based patrols and work closely with recreational boat users (section 8.3).

Generally, recreational boating has little impact on sanctuary values, but infrequent incidents such as oil spills, discharges of sewage or other pollutants, introduction of marine pests and disturbance to wildlife could be significant. The potential for anchor damage is considered to be minimal. Because of the low level of boating activity in the sanctuary, there is unlikely to be any demand for moorings.

Aim

- Provide opportunities for recreational boating activities in the sanctuary, while protecting natural and cultural values.

Management strategies

- *Permit boating and surface water sports in the sanctuary in accordance with table 2 and the five knot speed restriction within:*
 - 50 m of a swimmer
 - 100 m of a vessel or buoy with a 'diver below' signal
 - 200 m of the shoreline
 - 300 m of a whale or dolphin.
- *Permit the hand launching of sea kayaks and canoes, but do not permit vehicle-assisted launching of boats from sanctuary beaches.*
- *Continue to permit anchoring in the sanctuary. Monitor use and take appropriate action to reduce any impacts on natural values if necessary.*
- *Liase with Marine Safety Victoria to assist with recreational boating safety (section 8.3).*

6.4 Diving and snorkelling

Snorkelling and scuba diving enable visitors to experience the underwater habitats and view species and habitats that are difficult to observe from above the surface, particularly smaller or cryptic animals such as seahorses, pipefish, sea urchins, nudibranchs, sponges, octopuses and cuttlefish.

The sanctuary provides some good areas for shore-based scuba diving and snorkelling, especially when the wind is from the north. The islands also provide some protection from swells. Divers can access the sanctuary from

Stingray Bay, Pickering Point or Breakwater Rock. Virtually all of the sanctuary is accessible to divers, who enjoy exploring caves, crevices and diverse habitats supporting a range of interesting species (section 6.8).

Several local operators provide dive charter services and are licensed to operate in the sanctuary.

Educating divers and snorkellers about minimal impact practices, particularly those new to these activities, will help minimise impacts and assist with sanctuary management. Divers should refer to the Dive Industry Victoria Association (DIVA) *Code of Practice for Commercial Providers of Recreational Snorkelling & Scuba Diving Services in Victoria* (DIVA 2004) or the Scuba Divers Federation of Victoria (SDFV) *Codes of Practice: General Operating Guidelines for Recreational Scuba Diving and Related Activities* (SDFV 2005). Snorkellers should refer to the *Snorkelling, SCUBA diving, and wildlife swims - Adventure Activity Standards* at www.orc.org.au (ORC 2004).

Divers and snorkellers need to be aware of the no-take provisions in the sanctuary and can assist in the early detection of marine pests in the sanctuary (sections 4.6 and 8.2), and the detection of unrecorded cultural places and objects.

Aim

- Provide opportunities for diving and snorkelling that are consistent with the protection of sanctuary values.

Management strategies

- *In conjunction with local dive clubs, encourage the use of clean diving equipment to prevent the translocation of marine pests (section 4.6).*
- *Promote compliance of snorkellers and recreational divers, including licensed tour operators, with relevant codes of practice and Adventure Activity Standards.*
- *Integrate minimal impact messages into local diver training courses and existing information, interpretation and education programs (section 6.1).*

6.5 Swimming and shore-based activities

Stingray Bay is an extremely popular area during summer holiday periods for swimming, walking and other beach activities, particularly for family groups and children.

Currents and waves around the islands make safety deceptive and swimming in this area hazardous (Short 1996) (sections 6.2 and 6.9).

Stingray Bay Beach is not patrolled. Life Saving Victoria and the Warrnambool Surf Lifesaving Club provide seasonal, volunteer beach patrols at the Warrnambool Surf Life Saving Club on Lady Bay approximately 2 km north-west of the sanctuary. Visitors are encouraged to swim at this beach during patrol periods (section 6.9).

Diving and jumping from elevated rocks in the sanctuary has been a common activity in the past. This activity is inherently dangerous (section 6.9).

At low tide, the intertidal reef at Pickering Point is exposed and accessible by foot. The South West Intertidal Habitat Assessment and Education Project undertaken in 2000–2001, showed that visitor numbers at this site were relatively high and that there was a noticeable change in habitat type over the study period (Arundel & Fairweather 2002). The reason for this change is unclear, but is cause for concern. Further research, particularly to quantify the impact of trampling, would facilitate improved management of the intertidal area.

The intertidal area west of the Pickering Point Access stairway is visited less frequently. It is significantly more diverse than the areas close to the stairs and has a more complex rocky surface structure that helps to support this diversity (A. Bellgrove pers. comm. 2005). In a long-term study examining the effects of human trampling on intertidal assemblages, Keough and Quinn (1998) suggested that zoning marine reserves into high and low access areas is a suitable management strategy to control trampling impact. In accordance with this, the intertidal area west of the Pickering Point access stairway has been designated as a Special Protection Area to minimise trampling of the rock surface and the associated sensitive community.

When required, accumulated rubbish will be removed from the accessible intertidal areas, rocky shores and beaches within the sanctuary (section 4.2).

Camping and lighting fires on beaches within Marine National Parks and Marine Sanctuaries will not be permitted.

Aim

- Provide opportunities for appropriate shore-based recreation activities that are consistent with the protection of sanctuary values.

Management strategies

- *Permit recreational activities in accordance with table 2.*
- *In conjunction with Warrnambool City Council and the Warrnambool Surf Lifesaving Club, promote the patrolled beach in Lady Bay outside the sanctuary as the preferred swimming location for visitors to the sanctuary.*
- *Encourage visitors to adopt safe and minimal impact practices, as identified in the brochure 'Living Between the Tides' (DPI undated), and discourage use of the Pickering Point Special Protection Area.*
- *Liaise with research partners and other relevant agencies and research institutions to highlight research needs in relation to the impact of trampling on the Pickering Point intertidal area.*
- *Review the management of Pickering Point intertidal reef, subject to the results of any future research on the impacts of trampling.*
- *In conjunction with Warrnambool City Council, advise visitors of the risks associated with, and discourage, diving and jumping from elevated rocks.*

6.6 Dogs and horses

Dogs and horses are not permitted in the sanctuary, which is consistent with management of the adjacent part of Thunder Point Coastal Reserve and the situation before the creation of the sanctuary.

Dogs are known predators of Little Penguins and Short-tailed Shearwaters on Middle Island

and Merri Island. Their nesting areas, as well as intertidal reefs and Stingray Bay Beach, need to be protected from dogs. The presence and scent of dogs may disturb and prevent birds roosting and feeding at low tide. Dogs can also kill or disturb penguins, shearwaters and other birds that come ashore in the sanctuary. Some visitors to the area, particularly family groups with small children, may be annoyed or intimidated by unrestrained dogs. Dog droppings are a potential source of pollution (section 4.2).

Dogs on leads are permitted on nearby Lady Bay Beach east of the breakwater from 1 May to 31 October each year (figure 2). There are also opportunities for walking dogs on nearby Promenade Walk. Further information about suitable areas for walking dogs and responsible dog ownership is available via the City of Warrnambool's website, www.warrnambool.vic.gov.au (section 7.2).

Training and swimming of horses is permitted in nearby Lady Bay at specified times. Stingray Bay Beach is small and generally unsuitable for horse riding. There is also potential for conflict between horses and other visitors at this site.

Aim

- Minimise impacts on sanctuary values and conflicts with visitors from dogs and horses.

Management strategies

- *Do not permit dogs or horses in the sanctuary, unless confined to a vessel.*
- *Prevent and minimise the presence of dogs in the sanctuary by:*
 - *improving signage*
 - *ranger patrols*
 - *media and public awareness campaigns*
 - *liaison with Warrnambool City Council staff.*

6.7 Other activities

Coastal areas around Warrnambool are becoming increasingly popular for air sports, including hang-gliding, paragliding, gliding and flying ultra light aircraft. Stingray Bay

Beach is unsuitable for landing or launching hang-gliders, paragliders and other aircraft because of its small size and high visitor use.

Commercial and private joy flights regularly operate along the coast, particularly during weekends and summer holiday periods. Aircraft noise, particularly from low-flying aircraft, may be annoying to sanctuary visitors and could disturb nesting birds.

Aim

- Ensure that air sports do not interfere with other activities within the sanctuary.

Management strategies

- *Do not permit hang-gliders, paragliders, ultra lights or other aircraft to take off or land in the sanctuary.*
- *If aircraft intrusion becomes a problem for visitors or disturbs nesting birds, negotiate a 'Fly Neighbourly' agreement through Air Services Australia with local operators.*

6.8 Tourism services

Licensed tour operators play a key role in nature-based tourism in Victoria by offering guided park tours and supported recreation activities, and information that promotes sanctuary values and appropriate use.

Licences for tour operators, which are issued by Parks Victoria, include conditions that detail access, permitted activities and site-specific restrictions. Licensed tour operators must also adhere to relevant Adventure Activity Standards and industry standards for safety (section 6.9).

Several dive charter operators occasionally operate in the sanctuary. Unlicensed operators are not permitted to undertake commercial activities in the sanctuary. There are potential commercial opportunities, including those that could be offered by the Traditional Owners and relevant Indigenous communities and for education activities based around the Pickering Point intertidal area.

Aim

- Provide opportunities for and encourage provision of external tourism services

while minimising impacts on natural and cultural values.

Management strategies

- *Ensure all tour operators using the sanctuary are licensed and promote awareness of Adventure Activity Standards and Minimal Impact Guidelines.*
- *Continue to work with licensed tour operators and the tourism industry to assist with the delivery of appropriate sanctuary information.*
- *Encourage licensed tour operators to develop and deliver activities that enhance protection of the sanctuary and visitor experiences (sections 6.1 and 8.2).*
- *Monitor activities and use of tour operations to ensure compliance with permit conditions.*

6.9 Public safety

Visitors are exposed to a number of natural hazards when they visit the sanctuary. Some can be unaware of local conditions; others may not be proficient in an activity. Many risks are inherent to activities undertaken in the natural environment particularly the sea but when combined with inappropriate activities or behaviour can threaten visitor safety (sections 6.2, 6.3 and 6.5).

Visitors need to be aware of safety risks to ensure that they enjoy a safe visit. Public information and education programs are one of the most effective ways to promote safety. Generally, signs are used to convey safety messages to visitors (section 6.1). A strategic and integrated approach to safety signage with Warrnambool City Council is essential to ensure visitors to the area receive clear and consistent messages (section 6.1). Visitors and managers of adjacent land may also help to identify safety issues.

Industry-developed adventure activity standards are being produced for a range of adventure activities that can be undertaken in the sanctuary. Parks Victoria encourages compliance with these standards to help ensure visitor safety.

The responsibilities for responding to emergency incidents in Victoria and Victorian waters are outlined in the *Emergency*

Management Act 1986 (Vic.). Parks Victoria is not the lead agency for most emergency response situations. Instead it supports other agencies, including the Department of Sustainability and Environment, Marine Safety Victoria, the Country Fire Authority, the State Emergency Service and Victoria Police, in emergency incidents, where required.

Relevant agencies respond to incidents within the sanctuary in accordance with the Municipal Emergency Response Plan (WCC 2005). Parks Victoria trains staff in a range of emergency procedures and responds to emergency incidents during normal operating activities within the sanctuary in accordance with an emergency management plan.

All powered recreational vessel operators and commercial masters operating in Victorian waters are required to have a current licence. The Victorian Recreational Boating Safety Handbook contains most necessary information for recreational boating (MSV 2005). Marine Safety Victoria also conducts safety and awareness programs.

Aims

- *Promote visitor safety and awareness of safety issues and risks within the sanctuary associated with access and use.*
- *Promote and observe safe practices, and cooperate with emergency services.*

Management strategies

- *Promote awareness of safety issues and potential hazards in the sanctuary through the use of Marine Notes, Parks Victoria's website and information signs (section 6.1).*
- *Promote adherence to industry-developed adventure activity standards appropriate to activities being undertaken by visitors.*
- *In conjunction with Warrnambool City Council and other agencies involved in emergency response*
 - *seek review of the Municipal Emergency Response Plan to include adequate provision for likely incidents in the sanctuary*
 - *develop an Emergency Management Plan for the sanctuary which clearly identifies Parks Victoria's roles.*

7 STRATEGIES FOR AUTHORISED AND ADJACENT USES

7.1 Authorised uses

A number of uses and activities may be permitted in the sanctuary, subject to specified conditions to minimise impacts.

The operation of public utilities in the sanctuary is subject to permission from the Secretary to DSE with conditions to minimise effects on the sanctuary and visitors.

Petroleum extraction, exploratory drilling, mineral exploration and mining, and invasive searching for or extraction of stone and other materials, are prohibited in the sanctuary under the National Parks Act and/or 'earth resources' legislation.

Petroleum exploration, such as seismic survey, from an aircraft or from a vessel that is carried out in a manner which does not detrimentally affect the seabed or any flora or fauna of the sanctuary may be allowed with the consent of the Minister. However, the Government has announced that it will not release any further areas in Victoria that contain Marine National Parks or Marine Sanctuaries for petroleum exploration. There is no petroleum exploration permit over this sanctuary. Construction of pipelines or seafloor cables may be permitted with the consent of the Minister in some circumstances.

Protected areas are generally avoided as locations for Defence Force training exercises, although they occasionally host search and rescue, field navigation and incident response activities. Activities are subject to a permit with conditions to ensure that values of the sanctuary are protected.

All research and monitoring in a Marine National Park or Marine Sanctuary by external organisations or individuals requires a research permit under the National Parks Act. Permits are issued by the Department of Sustainability and Environment.

Parks Victoria recognises the significant role that the filming and photography industry plays in the social and economic wellbeing of the community and in providing for these activities seeks to ensure protection of the natural and cultural values of the sanctuary. This is achieved through a permit system for

all filming and photography conducted as part of a trade or a business. Amateur photographers or people taking film or video for personal or hobby interest do not require a permit.

The Warrnambool City Council occasionally needs to take vehicles or equipment through the sanctuary to work on infrastructure on Middle Island.

Aims

- Minimise the impact on sanctuary values of authorised uses.
- Manage authorised uses consistent with legislation.

Management strategies

- *Manage authorised uses in accordance with the requirements of legislation and Parks Victoria's operational policies.*
- *Monitor authorised activities to ensure that conditions of authorisations are met. Assess the effectiveness of conditions of authorisations in protecting the sanctuary and seek review of authorisations, if necessary, to arrest impacts.*
- *Develop a Memorandum of Understanding with Warrnambool City Council in regards to management vehicle access through the sanctuary.*
- *Liaise with DPI – Fisheries Victoria – to ensure it is aware of all research activities in the sanctuary.*
- *Permit Defence Force adventure training or field navigation exercises in the sanctuary in accordance with Parks Victoria's operational policy and relevant permit conditions.*

7.2 Boundaries and adjacent uses

Shore-based boundary markers define where the sanctuary boundaries intersect the coastline at Thunder Point and Breakwater Rock. Two shore-based triangular yellow signs, aligned on the bearing of the boundary, are used to mark this boundary. There are no markers at sea to mark offshore boundaries. Some minor

changes to boundary markers may help to make them more distinguishable at sea.

The definition of landward boundaries for visitors on foot is more difficult.

Improvements to signage at access points will improve this (sections 6.1 and 6.2).

Merri Marine Sanctuary adjoins:

- Thunder Point Coastal Reserve, Middle Island and Merri Island which are managed by the Warrnambool City Council as part of the Thunder Point Coastal Reserve, and are permanently reserved for the prevention of irruption of sand under the *Crown Land (Reserves) 1978 Act* (Vic.)
- State waters, which are the responsibility of the Department of Sustainability and Environment.

State waters and the underlying seabed adjoining the sanctuary are currently unreserved Crown land. The Government accepted the ECC's recommendation that a Coastal Waters Reserve be established under the *Crown Land (Reserves) Act* for a major portion of Victoria's marine area not otherwise designated for a particular purpose, to provide for a diverse range of activities that are compatible with long-term sustainable use (ECC 2000).

Cooperation with all adjacent managers is essential to ensure a coordinated approach to management, especially operational matters. In particular, management should be integrated with any local planning policies and relevant master plans developed for adjoining areas, including the following:

- *Warrnambool Foreshore Urban Design Framework* (WCB, WCC & Connell Wagner 1999)
- *Warrnambool Foreshore Management Plan* (WCC & Connell Wagner 1995)
- Local Planning Policy clause 22.01-16 Breakwater Harbour Precinct (WCC 2003)
- Local Planning Policy clause 22.01-14 Warrnambool Foreshore Precinct (WCC 2003)
- Local Planning Policy clause 22.02-13 Wild Coast Precinct (WCC 2003).

The Breakwater Harbour Precinct designates the area adjacent to the sanctuary as tourism development precinct potential, including a marine interpretive centre, a safe harbour, commercial activities, holiday accommodation, the Warrnambool Yacht Club and related marine services (WCC & Connell Wagner 1999). The old aquarium site is a potential site for a partially sheltered outdoor marine education classroom with sanctuary interpretive information, which is consistent with the objectives of this precinct (section 6.1).

The *State Planning Policy Framework* (DSE 2003b), in conjunction with the Warrnambool Planning Scheme (WCC 2003), provides a statutory framework for development proposals adjoining the sanctuary. The planning scheme is administered by the Warrnambool City Council. Parks Victoria participates in municipal planning processes where developments may affect sanctuary values.

Although the sanctuary is outside the scope of this planning scheme and is therefore not zoned, there are local provisions that must be met by a development application on adjacent land (section 4.5).

Under the scheme, Middle Island and Merri Island are zoned 'Public Conservation and Resource Zone'. A significant landscape overlay applies to Middle Island, Merri Island, Thunder Point Coastal Reserve and coastal freehold land nearby. This overlay seeks to 'protect and enhance the scenic qualities of the coastal hinterland' (WCC 2003).

An environmental significance overlay also applies to this land, and seeks to 'protect the natural and cultural features of the coast, and appreciate the complex nature of biological and physical processes' (WCC 2003). There is potential to strengthen these local provisions and further protect sanctuary values by applying water-sensitive urban design principles to the overlay.

Infrastructure on the boundary of the sanctuary, including the rock wall and sand baffle, near the mouth of the Merri River, is the responsibility of Warrnambool City Council. This infrastructure has minimal impact on sanctuary values, but any

maintenance or modifications could have unforeseen impacts.

Aims

- Effectively communicate the location of sanctuary boundaries.
- Minimise impacts on sanctuary values from adjacent developments.

Management strategies

- *Maintain boundary markers and signs that identify and effectively communicate boundaries, and improve them where necessary.*
- *Collaborate with Warrnambool City Council to:*
 - *gain authorisation for the installation of any new boundary markers or signs*

- *provide advice on issues relating to access to the sanctuary from adjacent land.*
- *give specialist advice and input into planning applications for developments that could affect sanctuary values*
- *give timely and appropriate comment to minimise potential impacts on the sanctuary associated with redevelopment and ongoing management of the Warrnambool Foreshore Precinct and Breakwater Harbour Precinct*
- *develop and implement responsible dog ownership program that promotes protection of the sanctuary.*

8 STRATEGIES FOR COMMUNITY AWARENESS AND INVOLVEMENT

8.1 Community awareness

Raising the community's awareness of the sanctuary's values is an essential step in developing the community's sense of custodianship for the sanctuary and engagement in the area's management. The community is more likely to develop a sense of custodianship for the sanctuary if its views and values are respected and sanctuary-related social networks are encouraged and supported. A strong connection with the sanctuary among visitors and in the local and wider community assists in broader public education, raising awareness and reaching others in the community.

Education and interpretation programs (section 6.1) play an important role in raising the awareness of the sanctuary in the wider community. Parks Victoria aims to communicate the benefits of a healthy parks system and its contribution to the health of individuals and society through the 'Healthy Parks Healthy People' program.

Coast Action / Coastcare, local individuals and local marine scientists have been actively involved in raising awareness of Marine National Parks and Marine Sanctuaries. The Southern Right Whale nursery at Logan's Beach in Warrnambool has helped to stimulate community interest in marine conservation, as have Deakin University courses and projects.

Groups such as Warrnambool Coastcare / Landcare, Warrnambool Sub Aqua Club and Deakin University are now involved in marine research and mapping projects relating to Merri Marine Sanctuary. The development of audio-visual resources and other products using research information would help to increase community awareness of the sanctuary's special values and threats.

Aims

- Increase the community's awareness and understanding of the sanctuary's values and management activities.

- Build a common vision and sense of shared custodianship for the sanctuary in community groups and individuals.

Management strategies

- *Increase the community's awareness and understanding of the sanctuary's values and management activities.*
- *Build a sense of shared ownership and custodianship for the sanctuary among community groups and individuals.*
- *Promote opportunities for community members to improve sanctuary management through taking shared responsibility and becoming directly involved.*
- *Investigate innovative ways to increase awareness of the sanctuary through local media, schools, universities, clubs, community events or arts programs (section 6.1).*
- *Liaise with local fishing groups to ensure members are aware of sanctuary boundaries and the prohibition on fishing within the sanctuary.*

8.2 Community participation

The long association of Warrnambool people with this area means that participation of community groups and individuals in the sanctuary's management is essential for the effective long-term planning, use and care of the sanctuary's values.

The Traditional Owners have considerable interest in and aspirations for the sanctuary as part of *Country*. They are an important potential source of traditional knowledge about the area. A strong working relationship with Traditional Owners will be essential for the reflection of their views in the sanctuary's planning and management and reconciliation of their interests and aspirations with those of other members of the community.

Volunteers and community groups make valuable contributions to sanctuary management projects. They bring diverse and

valuable information, knowledge, skills and experience to the sanctuary that may not otherwise be available to the sanctuary's managers. Volunteers also bring great enthusiasm and add valuable resources to assist with the care of the sanctuary.

The interests of community groups in the sanctuary often overlap and may be complementary. There can be considerable mutual benefits where such groups work together and with Parks Victoria to achieve common goals.

Friends of the Merri Marine Sanctuary was established in 2005 and is currently an informal group. The Friends Group is involved in the Sea Search – Community based intertidal monitoring project. There are several other local groups committed to participating in the protection of the sanctuary, including:

- Warrnambool Coastcare / Landcare - involved in environmental coastal projects around Warrnambool and restoration of penguin habitat on Middle Island.
- Warrnambool Sub Aqua Club – involved in Sea Search: the Merri Marine Sanctuary Community-based Subtidal Monitoring Project.
- Deakin University Dive Club – involved in Sea Search: the Merri Marine Sanctuary Community-based Subtidal Monitoring Project.
- Local Indigenous communities – involved in management of Middle Island and other Crown land adjacent to the sanctuary.

Sea Search is a community-based monitoring program which allows community groups to conduct valuable scientific surveys on intertidal and subtidal reefs within Marine National Parks and Marine Sanctuaries. A Sea Search group has been established for the sanctuary, and has collected species data for subtidal rock reefs within the sanctuary on several occasions (section 4.4). The group is supported by Parks Victoria staff and scientific monitoring protocols (Edmunds & Hart 2005). This program seeks to build community involvement as well as support sanctuary management.

The implementation of new projects identified in this plan will provide a range of opportunities for community participation.

With encouragement and support, members of existing community groups will include sanctuary projects in their activities. The Friends of Merri Marine Sanctuary will be an invaluable catalyst for the development of custodianship within the community.

Aims

- Support and encourage community groups and volunteers to actively assist in the sanctuary's management by participating and contributing their knowledge and skills.
- Inform, enrich and strengthen the sanctuary's management with the community's tradition and customs, especially relevant Indigenous tradition and knowledge.

Management strategies

- *In addition to community monitoring projects, identify and promote other suitable projects and promote the work of volunteers and community groups.*
- *Continue to build, and strengthen and maintain relationships with relevant Indigenous communities. In particular, seek to further develop a close inclusive working partnership with the Traditional Owners and cooperation with the scheduled Aboriginal community (section 5.1).*
- *Ensure that voluntary participation in the sanctuary's management is a sustainable and rewarding experience.*
- *Support further development of and interest in the Friends of Merri Marine Sanctuary group.*
- *Encourage visitors to assist with compliance management by reporting illegal fishing to Fisheries Victoria, and other offences to Parks Victoria.*
- *Support Coast Action / Coastcare programs within the sanctuary, particularly focusing on community interpretation and education.*
- *Support and give recognition to participants in the Merri Marine Sanctuary Sea Search program.*

- *Support capacity-building initiatives through appropriate training, tools and supports which better enable volunteer participation in the planning, use and care of the sanctuary.*
- *Support Friends and other interest groups and volunteers to develop an understanding and appreciation of the sanctuary's values and the rich and diverse knowledge, and aspirations of the Traditional Owners.*
- *Support groups that use or have an interest in the sanctuary to work together to pursue sources of funding, including Parks Victoria grants, for projects in the sanctuary. Encourage joint grants with other groups as appropriate.*
- *Provide opportunities for, and support tertiary students to undertake volunteer work experience and research activities that assist sanctuary management and are consistent with the plan.*

8.3 Agency partnerships

Merri Marine Sanctuary is a relatively small protected area which is potentially subject to many external threats. Close cooperation with relevant agencies is the best response to this circumstance. The sanctuary also surrounds two islands, which are not a part of the sanctuary. This necessitates close cooperation with Warrnambool City Council to achieve integrated management.

Although Parks Victoria is responsible for overall management of the sanctuary, other agencies are responsible for planning, management or regulation of certain activities in the sanctuary.

All activities relating to the sanctuary that are carried out by Parks Victoria or other agencies need to accord with all legislation and government policy and, as far as practicable, be consistent with agencies' policies and guidelines. To ensure this occurs, Parks Victoria staff must work closely with staff of relevant agencies and collaborate in implementing activities where appropriate.

DSE establishes parks and provides strategic direction and policy advice for the management of the sanctuary, including marine flora and fauna values and threatening

processes. Parks Victoria is a support agency for responses to oiled wildlife (section 4.2) and cetacean stranding or entanglement (section 4.4), operating at the direction of DSE.

As part of agreed service delivery arrangements, Department of Primary Industries – Fisheries Victoria – has primary responsibility for enforcement to ensure compliance with the fishing prohibitions under the National Parks Act. Parks Victoria will continue to collaborate with Fisheries Victoria and Victoria Police in accordance with the *Statewide Compliance Strategy* (Parks Victoria 2002b) and the *Regional Compliance Plan* (Parks Victoria 2004).

Deakin University is involved in several state-wide Marine National Park and Sanctuary management projects. On a local level, Merri Marine Sanctuary is an important study site for the Warrnambool campus of Deakin University and provides opportunities for promoting the university and its role in the local community. Staff and postgraduate students within the School of Ecology and Environment have a broad range of specialist skills and knowledge, including marine science skills. Cooperation between Parks Victoria and Deakin University provides significant opportunities to both agencies. University students studying marine biology and other courses also have the capacity to contribute to relevant projects and build advocacy within the community (section 6.1).

The Western Coastal Board provides direction and policy advice to facilitate sustainable development of the western coast of Victoria through the implementation of the *Victorian Coastal Strategy* (VCC 2002), the *South West Regional Coastal Action Plan* (Western Coastal Board 2002) and the *Warrnambool Coastal Action Plan* (WCB, WCC & Connell Wagner 1999).

Glenelg Hopkins Catchment Management Authority is responsible for ensuring the protection and sustainable development of land, vegetation and water resources within the region, including the preparation of a regional catchment strategy which aims to integrate natural resource management across the region, including the coast and state waters (section 4.2). A Regional Catchment Investment Plan helps to guide the allocation of funding for natural resource management

projects across the Glenelg Hopkins Catchment.

The Victorian Environment Protection Authority (EPA) has the primary responsibility for environment protection of all waters in Victoria and is responsible for administering and enforcing the *Environment Protection Act 1970* (Vic.), including all activities relating to the discharge of litter and waste to the environment (section 4.2). EPA also develops State Environment Protection Policies (SEPP) for state waters.

Parks Victoria is a support agency for Marine Safety Victoria at a statewide and regional level for marine pollution incidents, contributing on-site response and incident management as well as technical advice. The Port of Portland is the local authority responsible for administering the Marine Act, including planning and implementation of pollution response.

Warrnambool City Council administers the planning scheme for land adjacent to the sanctuary, including assessing developments that could have an impact on sanctuary values. Parks Victoria provides input into planning applications to ensure that sanctuary values are protected. Due to the small size of the sanctuary and the close proximity of the Thunder Point Coastal Reserve, the management of some beach activities such as illegal exercising of dogs will require a cooperative approach with Warrnambool City Council (section 7.2).

Through Aboriginal Affairs Victoria (AAV), the Department for Victorian Communities has responsibility for administering legislation protecting cultural heritage (sections 2.5 and 5.1). AAV and the South West and Wimmera Cultural Heritage Unit advise Parks Victoria on Indigenous matters.

Heritage Victoria is the central government agency which provides information and advice about places listed on the Victorian Heritage Register and Archaeological Inventory. It supports the Heritage Council through research, recommends additions to the Register and issues permits for alterations to heritage places.

Tourism Victoria is the state government authority responsible for developing and

marketing Victoria to Australian and international travellers.

Victorian agencies work cooperatively with the Commonwealth Department of the Environment and Heritage on the management of regional ecosystem conservation issues.

Aim

- Enhance sanctuary management by collaborating with other agencies to ensure they give appropriate consideration to sanctuary values in planning and implementing activities that relate to the sanctuary.

Management strategies

- *Liaise with agencies including the Western Coastal Board, Glenelg-Hopkins CMA, Wannon Water, DSE and DPI and other relevant groups to highlight the protection of marine habitats and communities in the area from pollution.*
- *Work collaboratively with all agencies to implement the plan vision and directions. In particular, work with:*
 - *DSE regarding future planning and management, including protection of marine flora and fauna from potentially threatening processes*
 - *Fisheries Victoria to implement the fishing prohibition and the Regional Compliance Plan*
 - *Western Coastal Board on any future plans and strategies that relate to the sanctuary*
 - *Glenelg Hopkins CMA to reduce the impacts of land use and management of the catchment on the sanctuary and development of appropriate actions in the Regional Catchment Strategy*
 - *EPA to minimise impacts associated with discharge of waste and pollutants into the environment, particularly from the Merri River by implementing the recommendations of the Merri River Estuary Environmental Audit (EPA 2004a)*
 - *Wannon Water to minimise impacts associated with the Warrnambool waste water outfall (section 4.2)*

- *State and regional tourism authorities, including Shipwreck Coast Tourism and Great Ocean Road Marketing, to promote the sanctuary in local visitor information centres and regional tourism strategies*
- *Marine Safety Victoria to help maximise visitor safety and compliance with boating zone and other regulations*
- *Warrnambool City Council regarding the administration and future amendments to the planning scheme (section 7.2), access to the sanctuary from land (section 6.2) and the promotion of responsible pet ownership (section 6.6)*
- *Commonwealth Department of the Environment and Heritage on the management of regional ecosystem conservation issues.*

9 PLAN IMPLEMENTATION

9.1 Delivery and reporting

A range of approaches will be used to implement strategies in this plan. Some will be undertaken as part of routine management activities such as ranger visits; others will be addressed as part of regional programs undertaken across the State each year.

A priority list of all the strategies in the plan will be used to guide routine management and identify detailed actions in annual regional programs. Priorities for regional programs vary from year to year, depending on available resources and government priorities.

At the end of each year, progress towards implementing strategies in the plan will be reviewed and the priority list updated. Staff report internally against 'on time and within budget' delivery of regional programs and whether the completed strategy has achieved the objective. Parks Victoria reports annually to government on the overall delivery of regional and divisional programs. This broader reporting on management performance is available in the National Parks Act and Parks Victoria annual reports.

During implementation of the plan, Parks Victoria will consult with Traditional Owners and the scheduled Aboriginal community. Ongoing collaborative activities with the relevant Indigenous communities, interested members of the community, scientists and agencies in realising the vision and management directions for the sanctuary will be especially important as outlined in previous sections of the plan.

Implementation of the plan will be consistent with Parks Victoria's commitment to sustainable practices, which involves the delivery of operations, services and facilities in an ecologically and socially responsible manner with minimal use of expendable resources and minimal generation of waste.

In implementing the plan, management will respond to monitoring and research information as it emerges. Parks Victoria's environmental management framework makes this possible. Based on the International Standard for Environmental Management

Systems (ISO 14001), the framework ensures that the future condition of values is considered in identifying threats and developing actions to ameliorate them. Over time, the success of actions is reviewed against set objectives to ensure ongoing learning and refinement of management. The selection of actions and treatments of threats are guided by the precautionary principle. Management options are evaluated on the basis of least impact on the environment. Treatment of threats with a potential for serious damage that is not addressed in the plan will not be postponed for lack of information.

Parks Victoria will use a variety of means to report to the community about the progress of implementation of the plan. The primary means will be through routine liaison between Parks Victoria, interested groups and individuals from the local community and relevant government agencies. In addition to giving regular updates, there will be opportunities for input by interested members of the community into annual priority setting and feedback on management performance. Events such as sanctuary open days and community and volunteer forums will offer similar opportunities for reporting and discussions about annual programs.

The results of monitoring and research work will continue to be available to the community as technical reports available on Parks Victoria's website: www.parkweb.vic.gov.au.

Parks Victoria will also report on evaluation of the plan (section 9.3) at the start of the new or revised plan, through routine liaison and community forums and in the subsequent draft plan.

Future reporting on the Statewide Strategy (Parks Victoria 2003a) and State of the Parks reports, which will be available on the Parks Victoria's website, will also include information on management performance in the sanctuary.

9.2 Plan amendment

During the 10-year life of the plan, amendments to the plan may only be made by the Secretary to DSE, following an authorised

process which includes community consultation.

Circumstances that might lead to amendment of the plan include:

- the results of monitoring or research, management experience or new information (such as greater understanding of new threatening processes) which indicate the need for a change in management direction
- significant changes in visitation or use
- a change in policy that calls into question plan objectives
- new legislation (such as significant boundary changes).

The plan may also be amended if an activity, development or use which conflicts with the provisions of the plan is approved by government (such as native title outcomes).

9.3 Evaluation and review

Periodically through the life of the plan, Parks Victoria will assess overall progress towards implementing the strategies in the plan and also assess progress towards achieving the plan vision and directions. These evaluations will inform a decision about whether a new or revised plan is required. The achievements of the plan will be assessed by considering performance areas such as:

Protecting natural values

- Overall improvement in biodiversity.
- Compliance with no-fishing provisions and park regulations.
- Timely management intervention to minimise threats.
- Minimal impact of permitted uses.

Protecting cultural values

- Timely management intervention to avoid damaging activities and threats.
- Progress towards working with Traditional Owners in managing the sanctuary and in protecting and interpreting Indigenous cultural heritage.

Managing recreation and visitor use

- Managing impact from visitors, including individuals and school and tour groups.
- Meeting community expectations in relation to Parks Victoria's management of the sanctuary.
- Improving community and visitor awareness.

Providing for research and promoting understanding

- Improving understanding of the composition and distribution of habitats and ecological processes.
- Ongoing Traditional Owners community participation.
- Clear identification of major knowledge gaps.

Methods for evaluating the benefits of the plan are likely to be refined over time. Parks Victoria partners with external research agencies to establish benchmarks and indicators for major communities and habitats. By using sound monitoring and assessment methods, this monitoring and research work will strengthen the basis for comparing management performance over time.

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GLOSSARY

Algae (seaweed) – plant-like organisms that use light energy to create food. Unlike plants, algae are not differentiated into roots, stems and leaves.

Ballast water – water carried in a ship’s tanks for stability. Normally discharged to the sea when the ship is loaded, and can be contaminated with pollution or exotic organisms.

Biodiversity – the natural diversity of all life: the sum of all native species of flora and fauna, the genetic variation within them, their habitats and the ecosystems of which they are an integral part.

Bioregion – an area with unique underlying environmental and ecological features.

Catchment – the area of land that drains to a watercourse or estuary.

Coast – in broad terms, the sea and the seabed to the State limit (3 nautical miles or 5.5 kilometres offshore) and the land and inland waters within the coastal catchment.

Coastal action plan (CAP) – plan that identifies strategic directions and objectives for use and development in the region or part of the region to facilitate recreational use and tourism, and to provide for protection and enhancement of significant features of the coast, including the marine environment.

Coastline – generally, the line along which the land meets the sea.

Committee of Management – a committee appointed under the *Crown Land (Reserves) Act 1978* to manage reserved Crown land on behalf of the Minister. For coastal land, committees are either an agency (e.g. the local municipality, Parks Victoria) or a committee appointed through an expression of interest process.

Coralline algae – algae that contain calcified components. Can take a variety of forms.

Country – in Indigenous usage, all of nature, culture and spirituality relating to an area.

Crown land – public land not vested in a public authority, including land which has been temporarily or permanently reserved under the *Crown Land (Reserves) Act 1978*.

Customs – observances and practices of people (includes land management and resource use) in accordance with their tradition.

Ecologically sustainable development (ESD) – development that improves the total quality of life both now and in the future, in a way that maintains the ecological processes on which life depends.

Ecosystem – a dynamic complex of interacting organisms and their associated non-living environment.

Effluent – a liquid, partially or completely treated or in its natural state, released into the environment from a water or sewage treatment plant.

Estuary – an inlet or river mouth that is influenced by tides and freshwater inputs from the catchment.

Foreshore – generally, the land between a coastal road and the low water mark.

Freehold land – see private land.

Geomorphology – the scientific study of landforms and geological formations and the processes that shape them.

Habitat – the preferred location or ‘home’ of an organism.

Heritage – a place, activity, cultural way of life, structure or group of structures that has aesthetic, historic, scientific or social value for the past, present or future generations.

High water mark – the landward boundary of High Water Mark is the average of the highest tides (Spring and Neap).

Indigenous cultural heritage – all aspects of contemporary and traditional culture, and places and objects of significance to Indigenous people in accordance with tradition.

Indigenous people – people who are descendants of Aboriginal Australians.

Indigenous species – species that occur naturally in a region.

Infrastructure – physical structures that facilitate the use of an area (e.g. roads, paths, toilet blocks).

Intertidal zone – the area between low and high tide levels, which is subject to daily changes in physical and biological conditions from tide movements.

Invertebrate – an animal without a backbone at any stage of development (e.g. worms, sponges).

Marine National Park – in Victoria, highly protected areas reserved and managed under Schedule 7 of the National Parks Act 1975 that represent the range of marine environments in Victoria, and in which no fishing, extractive or damaging activities are allowed.

Marine pest – Aquatic animals, plants or pathogens that if introduced to waters outside their natural or previous distribution, may pose a risk to human health or the environment, and may affect

the biodiversity and ecological processes of the marine ecosystem and impact on any other beneficial uses.

Marine protected area – term used internationally to describe a marine area that has some form of protection and is managed for conservation objectives.

Marine Sanctuary – in Victoria, a smaller, highly protected area reserved and managed under Schedule 8 of the National Parks Act 1975 designated to protect special values, and in which no fishing, extractive or damaging activities are allowed. These areas complement Marine National Parks.

Mollusc – broad group of animals including snails, sea slugs, squids, octopuses, cuttlefish and mussels.

Nature-based tourism – tourism that provides a range of experiences associated with the natural environment, generally related to outdoor activity.

Neap tides – occur twice every month between spring tides and are slightly lower.

Outfall – the place where sewage is discharged to the ocean.

Pelagic – relating to the surface waters of the marine environment.

Photosynthesis – the process by which organic molecules are made from carbon dioxide and water, using light energy. This process is essential for the growth and survival of plants and algae.

Private land – land under freehold tenure (i.e. privately owned).

Public land –unalienated land of the Crown (see Crown land) or land vested in a public authority.

Relevant Indigenous communities – includes the Traditional Owners, and any scheduled Aboriginal Community/s for areas included in the sanctuary.

Remnant vegetation – remaining natural vegetation.

Scheduled Aboriginal community – body/s scheduled as the Local Aboriginal Community under the Aboriginal and Torres Strait Islander Heritage Protection Act relating to the sanctuary.

Sediment – insoluble material carried in water, consisting mainly of particles derived from rock, soil and organic material; such material that has settled out of the water, onto the seabed.

Sessile organism – an organism that is attached to an underwater surface (e.g. pier, seabed, pile).

Spring tides – occur twice every month on the new and full moon and are the highest tides.

Stakeholder – an individual or group that has a vested interest in, or may be affected by, a project or process.

Stormwater – runoff from land during and following rain. Stormwater carries accumulated material, which may include litter, soil, nutrients, pathogens, chemicals, pesticides, oils and grease.

Tradition – the body of knowledge orally transmitted from one generation to another.

Traditional owners – communities of people that reasonably assert an association with the area that is based on direct descent from the original Indigenous custodians of *Country*, in accordance with Indigenous tradition.

Translocation – the process of transfer of pests from one area to a new area.

Values – natural and cultural assets (e.g. historic artefacts, features, species, communities) that have been given worth or are considered to be desirable.

Abbreviations

AAV – Aboriginal Affairs Victoria.

ANZECC – former Australian and New Zealand Environment and Conservation Council. ANZECC was represented by government Ministers and guided national policy and programs relating to the management of the environment and its conservation.

CSIRO – Commonwealth Scientific and Industrial Research Organisation.

DPI – Department of Primary Industries.

DSE – Department of Sustainability and Environment.

ECC – former Environment Conservation Council.

EPA – Environment Protection Authority (Victoria).

NRSMPA – National Representative System of Marine Protected Areas.

APPENDIX 1 MANAGEMENT OBJECTIVES FOR MARINE SANCTUARIES

Management objectives for marine national parks and marine sanctuaries included on Schedule 7 or 8 of the National Parks Act are detailed in Sections 4 and 17D of the Act as listed below. For an up-to-date copy of the *National Parks Act 1975* (Vic.), refer to Victorian Acts on the Victorian Legislation and Parliamentary Documents website www.dms.dpc.vic.gov.au.

4. Objects of the Act

The objects of this Act are –

- (a) to make provision, in respect of national parks, State parks, marine national parks and marine sanctuaries –
 - (i) for the preservation and protection of the natural environment including wilderness areas and remote and natural areas in those parks;
 - (ii) for the protection and preservation of indigenous flora and fauna and of features of scenic or archaeological, ecological, geological, historic or other scientific interest in those parks; and
 - (iii) for the study of ecology, geology, botany, zoology and other sciences relating to the conservation of the natural environment in those parks; and
 - (iv) for the responsible management of the land in those parks;
- (c) to make provision in accordance with the foregoing for the use of parks by the public for the purposes of enjoyment, recreation or education, and for the encouragement and control of that use.

17D Marine national parks and marine sanctuaries

- (3) The Secretary must –
 - (a) ensure that each marine national park and marine sanctuary is controlled and managed, in accordance with the objects of this Act, in a manner that will –
 - (i) preserve and protect the natural environment and indigenous flora and fauna of the park and any features of the park which are of geological, geomorphological, ecological, scenic, archaeological, historic or other scientific interest; and
 - (ii) promote the prevention of the introduction of exotic flora and fauna into the park; and
 - (iii) provide for the eradication or control of exotic flora and fauna found in the park; and
 - (b) subject to paragraph (a) –
 - (i) provide for the use, enjoyment and understanding of marine national parks and marine sanctuaries by the public; and
 - (ii) promote an understanding of the purpose and significance of marine national parks and marine sanctuaries; and
 - (c) prepare a plan of management in respect of each marine national park and each marine sanctuary.

APPENDIX 2 SUBMISSIONS ON THE DRAFT MANAGEMENT PLAN

A total of five submissions were received on the draft plan (June 2006 – August 2006), from the following organisations and one individual. One submission was marked confidential.

Organisation	Submission No.
Submissions from Groups	Total: 4
Coast Action / Coastcare	2
Confidential	5
Department of Defence	3
VR Fish	4

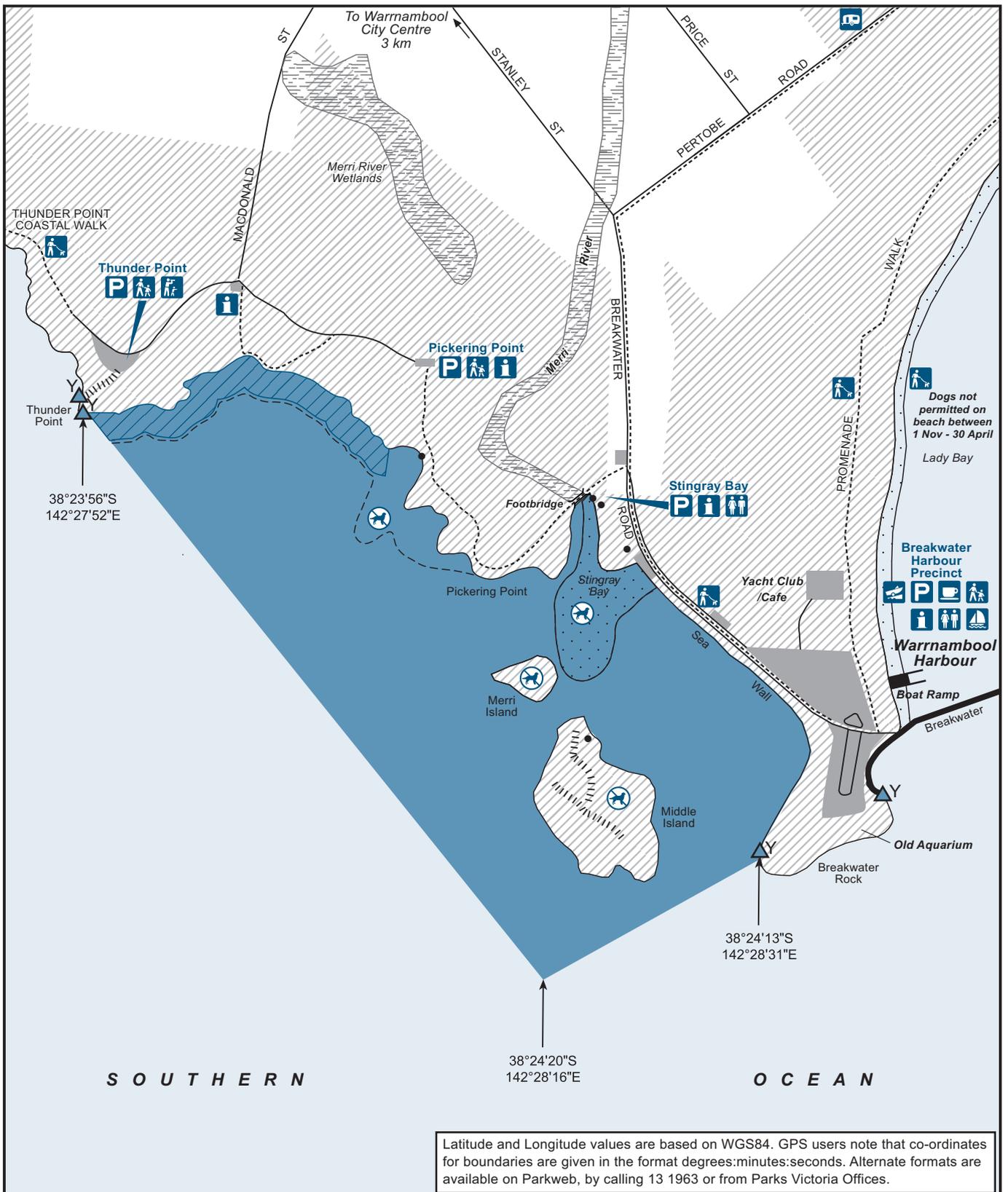
Individual	Submission No.
Submissions from individuals	Total: 1
Rebecca Overeem	1



**Figure 1 LOCATION
MERRI MARINE SANCTUARY**

-  Highway/Major Tourist Route
-  Major sealed road
-  Marine National Park & Marine Sanctuary
-  Other Parks
-  Waterbody





<p>— Sealed road</p> <p>- - - Walking track / footpath</p> <p>▨ Waterbody / Wetland</p> <p>● Sanctuary access point</p> <p> Boardwalk</p> <p>- - - Intertidal area (low tide approx)</p> <p>▭ Beach (low tide approx)</p>	<p>■ Merri Marine Sanctuary (No dogs permitted)</p> <p>▨ Coastal Reserve (Dogs not permitted on Middle Island and Merri Island)</p> <p>▨ Intertidal Special Protection Area (No dogs permitted)</p> <p>▲ Shore boundary marker (Colour indicated by letter)</p> <p>■ Carpark</p>	<p>Recreation Facilities</p> <p>🚤 Boat ramp</p> <p>☕ Cafe</p> <p>🚐 Caravan Park</p> <p>P Carpark</p> <p>🐕 Dogs on leash</p> <p>👨‍👩‍👧 Family walk</p> <p>ℹ Information</p> <p>👁 Lookout</p> <p>🚻 Toilets</p> <p>🚢 Yacht Club</p> <p>🚫 No Dogs Permitted</p>	<p>0 200 400 METRES</p> <p>Cartography by Spatial Vision 2007 M/7364</p> <p>MELBOURNE</p> <p>Parks VICTORIA</p>
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