Marine Investigation Discussion Paper

For public comment

November 2012

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State Government Victoria

VEAC
Victorian Environmental Assessment Council

WHAT IS THE VICTORIAN ENVIRONMENTAL ASSESSMENT COUNCIL?

The Victorian Environmental Assessment Council (VEAC) was established in 2001 under the *Victorian Environmental Assessment Council Act 2001*. It provides the State Government of Victoria with independent advice on protection and management of the environment and natural resources of public land.

The five Council members are:

Hon. Phil Honeywood *(Chairperson)*

Mr Ian Harris

Dr Charles Meredith

Mr Ian Munro PSM

Ms Angela Reidy

SCIENTIFIC ADVISORY COMMITTEE

The Marine Investigation Scientific Advisory Committee is independently chaired by Mr Rod Gowans.

Membership consists of:

Dr Alan Butler

Dr Scott Condie

Prof Peter Fairweather

Prof Gregory Jenkins

Prof Michael Keough

Dr Mark Norman

Dr Barry Wilson

COMMUNITY REFERENCE GROUP

The Marine Investigation Community Reference Group is independently chaired by Assoc Prof John Sherwood.

Membership consists of:

Mr Simon Branigan, *Victorian National Parks Association*

Mr Andrew Christie, *NMIT Bachelor of Aquaculture program*

Mr Geoff Fisher, *VRFish*

Dr John Hawkins, *Scuba Divers Federation of Victoria*

Mr Ray Lewis, *Victorian Environment Friends Network*

Ms Denise Lovett, *Victorian Aboriginal Heritage Council*

Mr David Lucas, *Native Title Services Victoria*

Mr Andrew Mathers, *Australian Petroleum and Production Exploration Association*

Cr Michael Norris, *Municipal Association of Victoria*

Mr Chris Smyth, *Australian Conservation Foundation*

Ms Renee Vajtauer, *Seafood Industry Victoria*

Ms Kat Vcekla, *Dive Industry of Victoria Association*

Mr Andy Warner, *Boating Industry Association of Victoria*

Mr Jeff Weir, *Dolphin Research Institute*

Mr Joel Williams, *Australian Marine Sciences Association (Victorian branch)*

HOW TO MAKE A SUBMISSION

Written submissions are invited on the discussion paper.

The closing date for submissions is Monday 4 February 2013.

You may make an online submission via VEAC's website at **www.veac.vic.gov.au** or send your written submission to VEAC by post or by email (see contact details). Only submissions sent directly to VEAC will be treated as submissions.

There is no required format for written submissions, except that you must provide your name and your contact details, including an email address if you have one. All submissions will be treated as public documents and will be published on VEAC's website. The name of each submitter will be identified as part of each published submission, but personal contact details will be removed before publication.

Confidential submissions are discouraged. If there are exceptional circumstances that require confidentiality, please contact VEAC before making your submission.

Contact details

Victorian Environmental Assessment Council
Level 6, 8 Nicholson St
PO Box 500
East Melbourne, Victoria 3002

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Nicola Waldron	page 4 magpie perch *Cheilodactylus nigripes* pages 9, 10, 18, 21, 22, 30, 44, 53 yellow zoanthid anemone page 16 bluebell tunicate *Clavelina moluccensis* page 36, 55 ocellate sea star *Nectria ocellata* page 38 limestone stack Great Ocean Road page 42 Southern blue devil *Paraplesiops meleagris* page 50 Twelve Apostles, Great Ocean Road page 51 redbrick seastar *Pentagonaster duebeni* page 56 jelly blubber *Catostylus mosaicus*

Acknowledgment of Country

The Victorian Environmental Assessment Council acknowledges and pays its respects to Victoria's Native Title Holders and Traditional Owners within the investigation area, and the rich cultural and intrinsic connection they have to Country. The Council also recognises and acknowledges the contribution and interest of other Aboriginal peoples and organisations in the management of land and natural resources.

Foreword

Council members (left to right): Ian Munro, Angela Reidy, Phil Honeywood (Chairperson), Charles Meredith, Ian Harris

Victoria's system of 24 marine national parks and marine sanctuaries was established ten years ago in 2002. It is now timely to have a look at how they are performing, what information we have, how people are using them, and what threats and challenges they might face in the future.

VEAC's predecessors, the Land Conservation Council and the Environment Conservation Council, carried out the studies that led to this system being established. It is a credit to the Victorian community as a whole that the complex issues involved in setting up these marine protected areas were able to be worked through over the years. Victorians can be proud of the outcome that placed us at the forefront of marine conservation, according to national and international observers at the time.

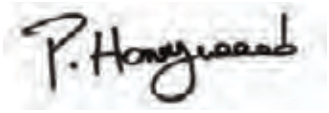
These highly protected marine national parks and sanctuaries - often called 'no-take' marine protected areas - make up 5.3 percent of Victorian waters. The challenges involved in establishing that system ten years ago means that Victoria's no-take marine areas are often uppermost in our minds, with Victoria's other marine protected areas sometimes overlooked. In fact, the first marine reserves were established in Victoria in the 1970s. Furthermore, in the period from 1979 to 1991, nine areas were set aside as marine reserves or marine parks. Some of these areas were subsequently incorporated in the system of marine national parks and marine sanctuaries in 2002, but six highly significant areas still remain as marine and coastal parks, marine parks or marine reserve. Most of these 'multiple-use' areas are available for fishing and some other extractive uses, and some also include significant areas of coastal land. It is appropriate now to have a stocktake of these areas as well, to revisit how they are performing against the purposes for which they were established, and to look at the threats and challenges that they may be facing now and into the future.

Despite the variety of marine protected areas and their various forms of establishment, they have remarkably similar purposes. The fine details vary, but most marine protected areas are established for two groups of purposes: for protection of marine life and the natural environment; and for enjoyment, appreciation and understanding.

In our consultation so far, Council has heard concerns from the community about issues that may be affecting our marine environments, such as climate change, marine pest species, pressures from increasing population and pollution. We have also heard about the ways people use the existing marine protected areas, and many inspiring stories about community involvement in education, management and monitoring. Since the marine national parks and sanctuaries were established in 2002, scientists have learned more about the ecology of these areas through extensive inventory and monitoring programs. The Council will be taking all this information into account in conducting the thorough assessments that this investigation requires.

This discussion paper outlines the approach VEAC proposes to take to address the terms of reference we have been given for this investigation. We will be publishing a draft report during 2013 outlining the results of our assessment, when there will be a further opportunity to comment before we finalise our report to the Minister in February 2014.

We encourage your participation in the investigation.



Phil Honeywood
Chairperson

Structure of this discussion paper

This discussion paper has three parts:

Part A Context (chapter 1) provides background to the investigation and explains the role of the Victorian Environmental Assessment Council (VEAC). It outlines the terms of reference and other matters to be taken into account in the investigation, describes the investigation scope and process, gives some policy context, and provides a summary of community and other stakeholder views presented to VEAC following the release of the notice of investigation.

Part B VEAC's proposed approach to the assessment (chapters 2 to 4) outlines VEAC's proposed approach to completing the assessment required for the investigation. Chapter 2 provides background information about establishment and management of Victoria's marine protected areas to assist interpretation of the terms of reference and VEAC's proposed approach to addressing them. Chapter 3 focuses on assessment of performance and management of marine protected areas (term of reference (a)). Chapter 4 focuses on assessment of threats and challenges to marine protected areas (term of reference (b)).

Part C Victoria's marine protected areas (chapter 5) contains descriptive summaries about each of Victoria's 24 no-take marine national parks and marine sanctuaries and six multiple-use marine parks, marine and coastal parks and marine reserve.

References are provided as endnotes in the order of citation in the discussion paper.

Appendices 1 and 2 provide a list of submissions received in response to the notice of investigation (appendix 1) and details relating to the purposes for which marine protected areas were established (appendix 2).

A map showing the location of Victoria's 30 marine protected areas can be found inside the back cover of the discussion paper.

CONTENTS

Executive summary

In October 2011 the Minister for Environment and Climate Change requested the Victorian Environmental Assessment Council (VEAC) to carry out an investigation into the performance and management of Victoria's existing marine protected areas, and the ongoing threats and challenges that these areas face into the future.

The discussion paper is the first of three reports that will be published during the investigation. The discussion paper outlines VEAC's proposed approach to addressing the terms of reference for the investigation. It also provides background information about Victoria's marine protected areas, to assist with understanding VEAC's proposed approach.

Written submissions in response to this discussion paper are welcome. VEAC particularly seeks feedback on the proposed approach to the assessment, outlined in chapters 3 and 4. Advice on available information relevant to the assessment is also appreciated. The submission period ends on Monday 4 February 2013.

Scope of the investigation

The terms of reference for the investigation require VEAC to examine and provide an assessment of:

a. the performance and management of existing marine protected areas in meeting the purposes for which they were established, particularly the protection of the natural environment, indigenous flora and fauna and other natural and historic values; and

b. any ongoing threats or challenges to the effective management of existing marine protected areas, particularly in relation to the biodiversity and ecological outcomes.

The full terms of reference for the investigation are provided in section 1.3.

The investigation is not typical of VEAC's investigations. Usually VEAC makes recommendations for public land in a particular area to be used for a range of specific purposes. This investigation is instead an evaluation of performance and management, including threats and challenges to effective management, focused on one component of Victoria's public land estate.

This investigation will focus on Victoria's existing marine protected areas, which include some areas of land in marine and coastal parks. The broader marine environment, as well as coasts and catchments, may be considered to the extent that they are relevant to considering the management and performance of the marine protected areas, or to threats and challenges to these areas that arise from outside their boundaries.

Consultation

104 submissions were received in response to the Notice of Investigation, the first of three public submission periods for the investigation. Submissions can be viewed on VEAC's website.

A Community Reference Group and Scientific Advisory Committee have been established for the investigation. VEAC has also commissioned advice from a number of experts on specific topics to inform the investigation.

A summary of the results of consultation to date are provided in section 1.7.

Victoria's marine protected areas

This investigation focuses on Victoria's existing marine protected areas, which are:

- 13 marine national parks and 11 marine sanctuaries established as no-take marine protected areas in 2002
- 6 marine parks, marine reserves and marine and coastal parks established as multiple-use marine protected areas in 1986 and 1991.

While all marine protected areas in Victoria are managed for a range of uses, VEAC proposes within the investigation to distinguish between 'no-take' marine protected areas, in which no extractive uses are permitted, and 'multiple-use' marine protected areas, in which extractive uses such as fishing are usually allowed.

The terms of reference for the investigation focus on the purposes for which these marine protected areas were established. VEAC has reviewed the relevant descriptions of these establishment purposes, and proposes to recognise the following consolidated groups of purposes as a particular focus for the assessment:

- ecosystem-related purposes, which have generally been expressed as conservation of biodiversity and natural or ecological processes
- purposes relating to enjoyment, appreciation and understanding of the natural environment.

There are slight differences in establishment purposes among areas. Marine national parks, for example, were also intended as a reference against which other areas may be compared. Multiple-use areas were intended to manage significant ecological values in a way that accommodates sustainable use of resources, particularly fishing.

While VEAC will consider both of the above groups of establishment purposes in the assessment, the ecological purposes will receive priority, given their emphasis in the terms of reference.

The history of establishment of Victoria's system of marine protected areas, including the purposes for which they were established, is described in chapter 2. This chapter also provides background information about how these areas are managed. The natural values, enjoyment and appreciation and (in the case of multiple-use areas) other use aspects, are summarised in chapter 5 for each of Victoria's 30 marine protected areas.

Proposed approach to assessing performance and management

Term of reference (a) for the investigation requires VEAC to examine, and provide an assessment of, the performance and management of existing marine protected areas in meeting the purposes for which they were established.

In addressing this term of reference, VEAC proposes to consider both the effectiveness of marine protected area management and how the characteristics of the marine protected areas themselves may have influenced their performance so far. Relevant characteristics of the areas may include the nature of their habitats, biodiversity and ecological processes, or aspects of their location and configuration.

VEAC proposes to use the management effectiveness assessment framework developed by the International Union for Conservation of Nature (IUCN)—World Commission on Protected Areas (WCPA), the global authority on conservation and protected area management, to structure the assessment. This framework is based on the idea that protected area management follows a process with six distinct elements: context, planning, inputs, process, outputs and outcomes. Assessment of management effectiveness is focused on these elements. The 'outcomes' element will be a particularly important part of VEAC's assessment, as it aligns with the 'performance' aspect of term of reference (a).

The IUCN—WCPA framework is deliberately broad to enable detailed methods to be tailored to the particular purpose of each assessment and characteristics of the areas being assessed. There are several considerations important for tailoring the framework to this investigation. These considerations include differences between marine protected areas relating to their establishment purposes, management approach and ecological characteristics.

The output of VEAC's assessment of management effectiveness will be a descriptive analysis.

VEAC's proposed approach to addressing term of reference (a) is detailed in chapter 3.

Proposed approach to assessing threats and challenges

Term of reference (b) for the investigation requires VEAC to examine, and provide an assessment of, any ongoing threats or challenges to the effective management of existing marine protected areas.

In addressing this term of reference, VEAC proposes to interpret 'threats and challenges' as:

- management challenges – challenges relating to the management of the protected areas, including challenges to mitigation of environmental threats
- environmental threats – the environmentally-based agents or processes that could adversely affect marine protected areas and their values, particularly those arising from human activities.

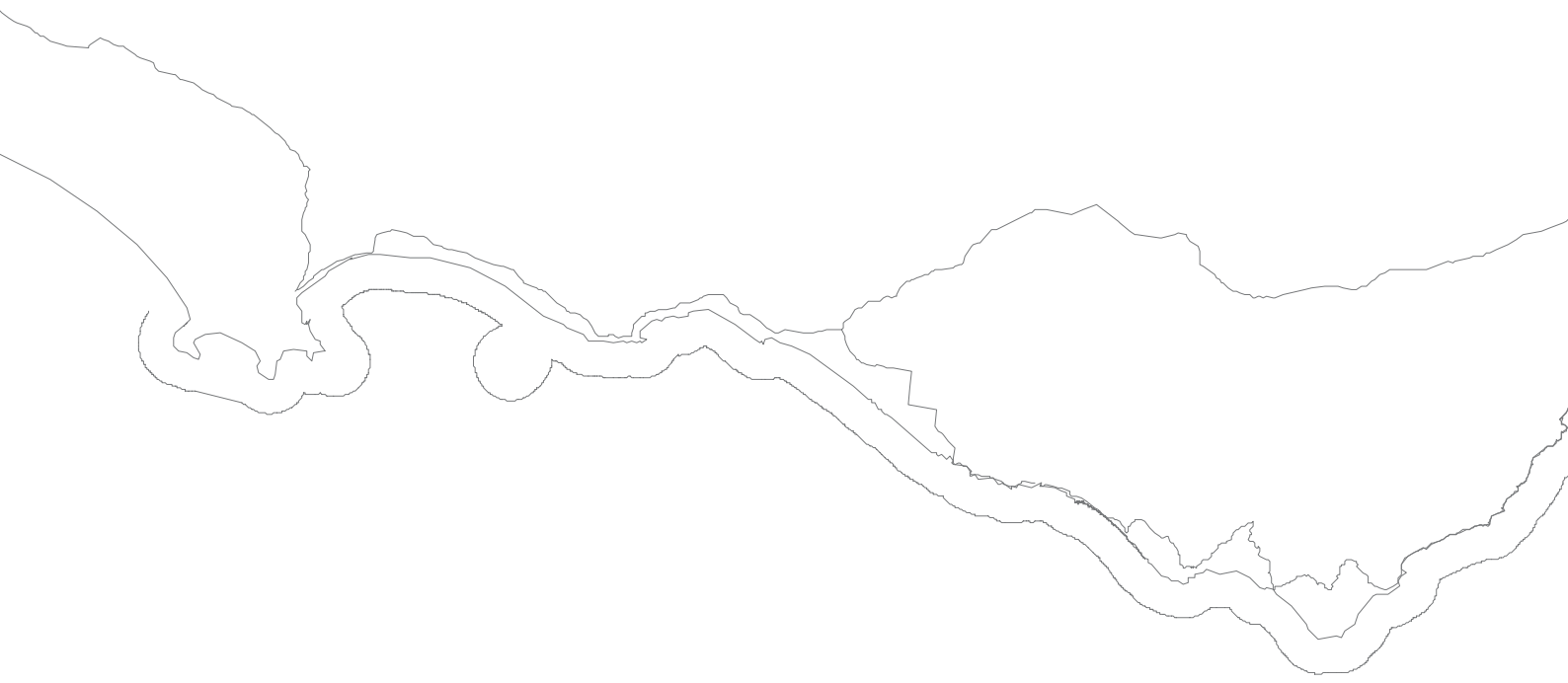
The outputs of VEAC's assessment to address term of reference (a) will inform identification of management challenges. These outputs will also assist VEAC with identifying threats and challenges relating to the establishment purposes of enjoyment, appreciation and understanding of natural environments.

To identify environmental threats to the marine protected areas, VEAC proposes to refine and apply a hierarchical marine threat assessment approach developed by the Department of Sustainability and Environment, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and scientists from the Fisheries Research Branch of the Department of Primary Industries.

The hierarchical marine threat assessment approach rates the relative importance of stressors arising from a range of threat sources to each marine area, based on expert scientific judgement. The importance of these threats and stressors is assessed for three ecological attributes related to biodiversity and ecological processes: species and populations; communities/habitat; and ecosystem function.

While coastal land is a relatively small component of Victoria's existing marine protected areas, these areas have significant environmental values. As terrestrial ecosystems are vulnerable to different threats than marine ecosystems, VEAC proposes to separately assess the environmental threats to these areas using established and appropriate terrestrial threat assessment approaches.

VEAC's proposed approach to addressing term of reference (b) is detailed in chapter 4.



A
Context

1. Introduction

1.1 Background to the investigation

The coastal and marine environments of Victoria are part of the richly diverse southern coastline of Australia, with many species of marine flora and fauna found only in southern or southeastern Australia. Victoria's marine waters cover more than 10,000 square kilometres, extending three nautical miles (approximately 5.5 kilometres) from the coastline. They include bays, inlets and estuaries, as well as the exposed waters of Bass Strait and the open ocean. Most waters are shallow, but some areas reach depths of more than 100 metres.

Victoria's existing marine protected areas date from 1979 when the Harold Holt Marine Reserves in Port Phillip Bay were established following a proposal from the Scuba Divers Federation of Victoria in the early 1970s. Several more marine protected areas were established between 1981 and 1991, mainly in South Gippsland. In 1991 the then Land Conservation Council began a Statewide investigation which culminated in the establishment of a system of no-take marine national parks and marine sanctuaries in 2002 covering 5.3 percent of Victorian state waters. In total, the existing marine protected areas in Victoria cover approximately 11.7 percent of Victorian waters.

Marine protected areas are defined as an area of sea (which may include land, the seabed and subsoil under the sea) established by law for the protection and maintenance of biological diversity and of natural and cultural resources. Different names are used around Australia to describe marine protected areas, including marine reserve, marine park, marine national park and so on.

While all marine protected areas in Victoria are managed for multiple uses, in this discussion paper the Victorian Environmental Assessment Council (VEAC) is distinguishing between highly protected or 'no-take' areas, in which no extractive uses are permitted, and 'multiple-use' marine protected areas, in which extractive uses such as fishing are usually allowed.

The government has requested that VEAC carry out an investigation into the outcomes of the establishment of Victoria's existing marine protected areas.

This discussion paper outlines the approach VEAC proposes to take to the assessment requested in the terms of reference, and invites public comments. A draft report will be released for further public comment in mid 2013.

1.2 The Victorian Environmental Assessment Council

The Victorian Environmental Assessment Council Act 2001 (VEAC Act) came into effect on 31 December 2001. This Act repealed the *Environment Conservation Council Act 1997* and established the Victorian Environmental Assessment Council to conduct investigations and make recommendations relating to the protection and ecologically sustainable management of the environment and natural resources of public land.

The current five members appointed to VEAC are the Hon. Phil Honeywood (Chairperson), Mr Ian Harris, Dr Charles Meredith, Mr Ian Munro PSM and Ms Angela Reidy. A brief biography of each of the Council members can be found on VEAC's website at www.veac.vic.gov.au. The Council is supported by a small research, policy and administrative staff. The VEAC Act requires the Council to consult with departments and public authorities, and requires departments and public authorities to give practicable assistance to the Council in carrying out investigations. VEAC papers and reports are, however, prepared independently.

The Council conducts its affairs in accordance with the VEAC Act. In particular, section 18 specifies that "Council must have regard to the following considerations in carrying out an investigation and in making recommendations to the Minister-

a. the principles of ecologically sustainable development;

b. the need to conserve and protect biological diversity;

c. the need to conserve and protect any areas which have ecological, natural, landscape or cultural interest or significance, recreational value or geological or geomorphological significance;

d. the need to provide for the creation and preservation of a comprehensive, adequate and representative system of parks and reserves within Victoria;

e. the existence of any international treaty ratified by the Commonwealth of Australia which is relevant to the investigation;

f. any agreement at a national, interstate or local government level into which the Government of Victoria has entered, or under which the Government of Victoria has undertaken any obligation in conjunction with the Commonwealth, a State, Territory or municipal council, which relates to the subject matter of the investigation;

g. the potential environmental, social and economic consequences of implementing the proposed recommendations;

h. any existing or proposed use of the environment or natural resources.

1.3 Terms of reference for the investigation

In October 2011 the Minister for Environment and Climate Change, the Hon Ryan Smith, requested VEAC to undertake the Marine Investigation. The terms of reference for the investigation are copied below.

MARINE INVESTIGATION

Pursuant to section 15 of the *Victorian Environmental Assessment Council Act 2001*, the Minister for Environment and Climate Change requests the Council to carry out an investigation into the outcomes of the establishment of Victoria's existing marine protected areas[#].

The purpose of the marine investigation is to examine and provide assessment of:

(a) the performance and management of existing marine protected areas in meeting the purposes for which they were established, particularly the protection of the natural environment, indigenous flora and fauna and other natural and historic values; and

(b) any ongoing threats or challenges to the effective management of existing marine protected areas, particularly in relation to the biodiversity and ecological outcomes.

In addition to the considerations in section 18 of the *Victorian Environmental Assessment Council Act 2001*, the Council must take into account the following matters:

i. all relevant State Government policies and strategies, Ministerial statements and reports by the Victorian Auditor-General;

ii. all relevant national and international agreements, policies and strategies, including ecosystem-based management approaches; and

iii. relevant regional programs, strategies and plans.

Three public submission periods are to be held and a discussion paper and a draft proposals paper are to be prepared.

The Council must report on the completed investigation by February 2014.

[#] For this investigation, marine protected areas means the 13 marine national parks, 11 marine sanctuaries, and 6 marine parks, marine reserves or marine and coastal parks established under schedules seven, eight and four respectively of the *National Parks Act 1975*.

1.4 Scope of the investigation

Unless otherwise determined by legislation, state governments have responsibility for marine environments up to three nautical miles (approximately 5.5 kilometres) out from the territorial sea baseline. Along most of Australia's coastline, the territorial sea baseline is the low water mark.

The existing marine protected areas within Victorian waters subject to the assessment are specified in the terms of reference. It should be noted that some of the marine and coastal parks include areas of land. The public land between high and low water within Victoria's terrestrial parks system is not part of the investigation, unless it is within a marine protected area listed in the terms of reference. Commonwealth marine reserves offshore from Victoria are not within the scope of the investigation. The broader marine environment, however, as well as the coast and catchments, may be considered to the extent that they are relevant to considering management effectiveness, or threats and challenges arising from outside the boundary of the marine protected areas.

This investigation is not a typical VEAC public land investigation in which recommendations are made for specific areas of public land or water to be used for a range of specific purposes. Rather, it is an evaluation of the performance and management of part of Victoria's existing public land estate, and an assessment of any threats and challenges to effective management.

1.5 Policy context

There are many international, national, state and regional government policies and strategies that inform this investigation. Although not an exhaustive list, some of the key policies, strategies and programs particularly relevant to the terms of reference for this investigation are described briefly below.

1.5.1 INTERNATIONAL AND NATIONAL CONTEXT

National Representative System of Marine Protected Areas (NRSMPA)

Australia is committed to establishing a representative network of marine reserves by 2012. This network of marine reserves will reflect Australia's international commitments made at the United Nations World Summit on Sustainable Development in 2002.

The NRSMPA helps to meet Australia's responsibilities and obligations as a signatory to the Convention on Biological Diversity and the major components of the Jakarta Mandate developed under that Convention. Australia signed the Convention in 1992, at the Earth Summit in Rio de Janeiro, and subsequently ratified it in June 1993. It came into force in December 1993. The Convention requires all member nations to, amongst other things, establish a system of protected areas and to develop guidelines for the selection, establishment and management of protected areas. The Convention recognises that protected areas are not the only mechanism for conserving biodiversity but that they are an important element of the overall approach. The Convention introduced the phrase 'comprehensive, adequate and representative' (CAR) reserves.

The NRSMPA supports national commitments under the Inter-governmental Agreement on the Environment (1992) and implemented through National Strategy for Ecologically Sustainable Development (1992) and the National Strategy for the Conservation of Australia's Biological Diversity (1996).

More information on the policy basis for the NRSMPA can be found on the Australian government website www.environment.gov.au.

Ramsar Convention

The Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) was signed in Ramsar, Iran in 1971, and aims to halt the worldwide loss of wetlands and to conserve those that remain. Victoria has 11 Ramsar sites, four of which are marine and coastal: Corner Inlet, Gippsland Lakes, Port Phillip Bay (Western Shoreline) and Bellarine Peninsula, and Western Port. Several marine protected areas are within Ramsar wetlands. In 2002 a Strategic Directions Statement was published, establishing a set of objectives and state wide strategies for the management of Ramsar sites in Victoria. Strategic management plans were prepared for each of the four individual sites in 2002 and 2003. The directions statement and management plans can be found on www.dse.vic.gov.au.

International agreements to protect migratory shorebirds and their habitat

Victoria provides critical non-breeding habitat for migratory shorebirds each summer. Protection of habitats along the migratory route and at their destinations in Victoria and elsewhere is vital for their survival and requires international cooperation.

In addition to the Ramsar Convention, the Australian government is a party to a range of agreements, such as the Convention on Migratory Species in 1991, bilateral migratory bird agreements with Japan in 1974 (JAMBA), China in 1986 (CAMBA) and the Republic of Korea in July 2007 (ROKAMBA). The East Asian-Australasian Flyway Partnership (Flyway Partnership) was launched in 2006, with a goal to recognise and conserve migratory waterbirds in the East Asian - Australasian Flyway for the benefit of people and biodiversity. Shallow Inlet, Corner Inlet, Western Port, the western shoreline of Port Phillip Bay and the Bellarine Peninsula, and Discovery Bay have been recognised for their importance to migratory shorebirds through listing as shorebird sites on the East Asian-Australasian Flyway Site Network.

The *Environment Protection and Biodiversity Act 1999* (EPBC Act) provides for protection of migratory waterbirds in Australia as a matter of national environmental significance. The Act also provides for the development of plans to conserve listed species, of which the *Wildlife Conservation Plan for Migratory Shorebirds* was the first to be made in February 2006.

Fisheries management

The EPBC Act requires the Australian Government to assess the environmental performance of fisheries and promote ecologically sustainable fisheries management. An independent assessment of all fisheries managed under Commonwealth legislation and all state export fisheries is required. In Victoria, export fisheries include, amongst others, abalone, giant crab, rock lobster, scallop and sea urchin. The assessments are conducted against the 2nd edition of the *Guidelines for the Ecologically Sustainable Management of Fisheries*, revised in 2007. Fisheries within Victoria are managed under the *Fisheries Act 1995*.

Planning for climate change

The National Climate Change Adaptation Framework (the COAG Framework) was developed to guide government action on adaptation over the five to seven year period from 2007 and endorsed by the Council of Australian Governments (COAG) in April 2007. The need for a National Climate Change Action Plan for Fisheries and Aquaculture was identified in the COAG Framework, which identifies fisheries as being particularly vulnerable to climate change, and actions were recommended to enhance the knowledge base underpinning climate change adaptation for this and other vulnerable sectors. The action plan was endorsed by the Natural Resource Management Ministerial Council in November 2010. More information can be found on the Australian government website www.daff.gov.au.

Commonwealth marine bioregional planning

The South-east Marine Region extends from waters offshore of southern New South Wales to eastern South Australia and includes waters adjacent to Victoria, Tasmania and Macquarie Island. It covers only Commonwealth waters.

Marine Bioregional Plans are intended to improve the way decisions are made under the EPBC Act, particularly in relation to the protection of marine biodiversity and the sustainable use of Australia's oceans and their resources by marine-based industries. A Regional Marine Plan for the South-east Marine Region was completed in 2004 through an earlier regional marine planning process. In 2006, the regional marine planning process was revised. The new Marine Bioregional Plan for the South-east Marine Region will build on the existing regional plan.

A network of Commonwealth marine reserves for the South-east Marine Region was established in 2007. Three reserves are adjacent to Victoria:

- the Apollo Commonwealth Marine Reserve is located off Apollo Bay on Victoria's west coast in shallow waters (80 to 120 metres) on the continental shelf off western Victoria
- the Beagle Commonwealth Marine Reserve is situated within the shallow Bass Strait, mostly 50 to 70 m depths, with its north-western edge abutting Victorian waters to the south-east of Wilsons Promontory
- the East Gippsland Commonwealth Marine Reserve lies offshore of the north-east corner of Victoria on the continental shelf and escarpment in depths from 600 metres to deeper than 4,000 metres.

A draft management plan developed for the south-east regional network of Commonwealth marine reserves was released for public comment in mid 2012. All three Commonwealth marine reserves off Victoria are managed for multiple uses.

1.5.2 STATE AND REGIONAL CONTEXT

Victorian Auditor-General's performance audit: *Environmental management of marine protected areas* (2011)

A performance audit carried out under the *Audit Act 1994* evaluates whether an organisation or government program is achieving its objectives effectively, and doing so economically and efficiently, and in compliance with all relevant legislation. This audit examined how effectively marine protected areas have been managed to protect biodiversity. It assessed Parks Victoria, as the agency with primary responsibility, on its planning frameworks, management activities, and monitoring, evaluation and reporting activities relevant to marine protected areas. The audit also assessed the Department of Sustainability and Environment's role in marine policy and marine biosecurity, and the fishing compliance activities that the Department of Primary Industries performs in marine protected areas.

Environment protection policies

State environment protection policies (SEPPs) are subordinate legislation prepared by the Environment Protection Authority under the provisions of the *Environment Protection Act 1970*; they aim to safeguard the environmental values and human activities (beneficial uses) that need protection in Victoria from the effect of pollution and waste. The State Environment Protection Policy (Waters of Victoria) sets the framework for the protection and rehabilitation of Victoria's surface water environments. Like SEPPs, waste management policies are legal tools made under the *Environment Protection Act 1970*. The Waste Management Policy (Ships' Ballast Water) aims to protect Victoria's environment from marine pests introduced via domestic ballast water and applies to all ships entering the State waters.

Climate change programs

There are a number of Victorian policies and programs relating to climate change (see www.climatechange.vic.gov.au). The *Climate Change Act 2010* recognises that Victoria's climate is changing. The Act prescribes a biennial report on climate change and greenhouse gas emissions in Victoria, the first of which was tabled in 2012. The report includes: Victoria's greenhouse gas emissions; the science and data relevant to climate change in Victoria; and the extent to which the amount of Victoria's greenhouse gas emissions has been reduced in relation to the amount of Victoria's greenhouse gas emissions for the year 2000.

The Victorian Climate Change Strategy for Fisheries and Aquaculture 2008-2018 will provide future direction for activities related to climate change.

The Victorian government's Future Coasts Program aims to help Victoria better understand and plan for the risks associated with sea level rise and storm surge. The Victorian Coastal Inundation Dataset and the Victorian Coastal Hazard Guide are now available and provide mapping and guidance about the potential risks from sea level rise along the Victorian coast.

Victorian Coastal Strategy

The *Victorian Coastal Strategy* is prepared for the Victorian government by the Victorian Coastal Council under the provisions of the *Coastal Management Act 1995*. The 2008 strategy (the third) sets a long term vision for the coast and provides policies and actions to guide decisions about its management over the next five years. This strategy applies to all Victorian coastal waters and all private and coastal Crown land directly influenced by the sea or directly influencing the coastline.

Amongst other responsibilities, the three regional coastal boards develop coastal action plans and oversee implementation of the strategy.

Regional catchment strategies

Regional catchment strategies are an overarching strategy for the development, management and conservation of land and water resources in each of the ten catchment regions in Victoria. Five catchment regions are coastal: Glenelg Hopkins, Corangamite, Port Phillip and Westernport, West Gippsland and East Gippsland. The strategies are prepared by catchment management authorities under the *Catchment and Land Protection Act 1994*, and identify objectives for the quality of the land and water resources of the catchments in the region; set a program of measures to promote improved use of land and water resources and to treat land degradation; and state the actions necessary to implement the strategy.

1.6 The investigation process

The process for this investigation is specified in both the VEAC Act and the terms of reference for the investigation. The process and timeline are shown in figure 1.1 and include three formal submission periods of more than the minimum 60 days required under the Act.

The terms of reference specified that VEAC was to release a discussion paper, a draft proposals paper and submit a final report.

1.6.1 COMMITTEES

Under section 12 of the VEAC Act, the Council may appoint any committees that it considers necessary. For the Marine Investigation, VEAC has established a Scientific Advisory Committee. Members are listed on the inside front cover of this report. See section 1.7.4 for more information about the Scientific Advisory Committee.

Under section 13 of the VEAC Act, a Community Reference Group (CRG) is required for each of VEAC's investigations. See section 1.7 for more information about the CRG for the Marine Investigation.

Figure 1.1 Investigation process and timeline

1.7 Community views and other advice

During the preparation of this discussion paper VEAC sought community and expert input from a number of sources. Consultation with the community, scientists and government authorities is an important aspect of this investigation. The information gained from all of these sources provides VEAC with valuable insights relevant to the terms of reference for the investigation.

The submission process is one of the key methods used by VEAC to seek community views on issues and values. Following the advertisement of the notice of investigation on 23 April 2012, VEAC received 104 submissions. The submissions covered a wide range of issues relating to Victoria's marine protected areas and marine environment. A summary of the issues and suggestions in these submissions is provided later in this section.

Another vehicle VEAC uses to seek community views is through the Community Reference Group. The group is made up of representatives of a broad range of interests related to the investigation, and provides advice and input to VEAC on many issues. Members are listed on the inside front cover of this report. Input from the Community Reference Group is discussed in section 1.7.3 below.

1.7.1 SUBMISSIONS IN RESPONSE TO THE NOTICE OF INVESTIGATION

This section summarises the comments made in submissions. These have been broadly grouped according to how they relate to terms of reference (a) or (b) of the investigation.

The majority of the submissions focused on the no-take marine national parks and sanctuaries. Submissions tended to refer to the whole system of marine protected areas, rather than singling out a particular park or sanctuary. Some submitters, however, did talk about a favourite or local area: Corner Inlet, Port Phillip Heads and Point Addis marine national parks, Eagle Rock, Barwon Bluff, Jawbone, Point Cook, and Ricketts Point marine sanctuaries were amongst the most popular locations.

Nearly half the submissions came from the primary school students from one school. These submissions are considered separately below. The remaining submissions came from individuals, and organisations representing a range of interests (see attachment 1 for a list of submissions). The majority of submissions came from those living or working in or close to coastal areas in Victoria.

Submissions are a valuable resource for VEAC, and the Council thanks those who have contributed to informing the investigation so far. Submissions can be viewed on VEAC's website at www.veac.vic.gov.au.

Submissions from primary school students

VEAC received 50 individual submissions from primary school students in the Lorne – Aireys Inlet area. The artwork and messages of support provided in these submissions illustrate the enthusiasm and sense of stewardship that the children have developed for their local marine protected area, the Eagle Rock Marine Sanctuary. The children reported they felt that the area has benefited from the protection status of the marine sanctuary and they reported that species such as the Port Jackson shark continue to thrive in the area. The submissions and the 'i sea, i care' program are examples of the educational use of the marine protected area and links between the community and the local environment.

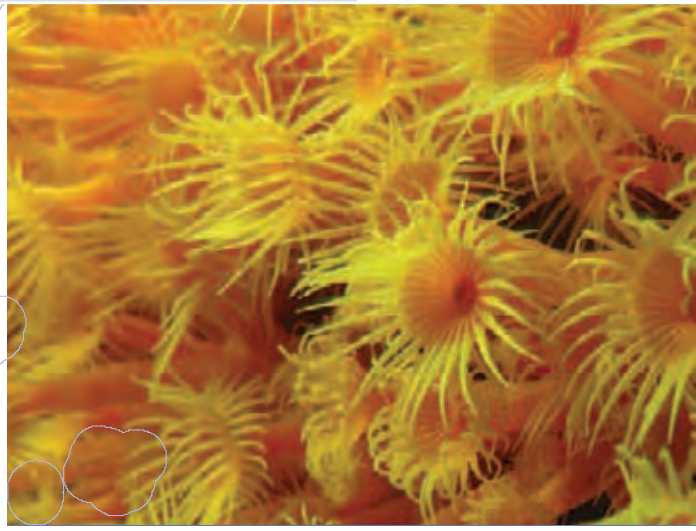
Responses relating to term of reference (a)

Term of reference (a) directs VEAC to examine and assess the performance and management of existing marine protected areas in meeting the purposes for which they were established.

Protection of biodiversity and ecological processes

More than half the submissions commented on the valuable role marine protected areas play in protecting biodiversity and ecological processes. A number of people noted in their observations that biodiversity was thriving as a direct result of the protected status. In contrast, other submitters felt that there was no evidence to suggest that establishment of marine protected areas had contributed to protecting marine biodiversity. The absence of baseline data in many instances was raised as a problem for determining any changes in the marine environment as a result of protection.

Some submitters were concerned with the effectiveness of some of the current monitoring and assessment which they see as lacking scientific robustness. There is support for standardised approach with clearly defined parameters, and a consistent design for reporting.



Friends groups were considered to play a vital role in marine national parks and sanctuaries. Several groups submitted that they carry out regular monitoring within marine protected areas, indicating that numbers of fish, crustaceans and shellfish have risen since the introduction of protected status.

Enjoyment and appreciation of natural environments

Many submissions highlighted the opportunities that marine protected areas provided for their enjoyment and recreation. Some submitters spoke of the importance of providing a place for recreation and relaxation, as well as opportunities for education about the natural environments.

Responses relating to term of reference (b)

Term of reference (b) directs VEAC to examine and assess any ongoing threats or challenges to the effective management of marine protected areas, particularly in relation to the biodiversity and ecological outcomes.

Challenges for management of marine protected areas

Several submissions expressed concern about the current management system, indicating that a lack of integrated management was putting the protected areas at risk, and calling for a more strategic approach.

Some submissions raised concerns relating to the March 2011 Victorian Auditor-General's report *Environmental Management of Marine Protected Areas*.

A few submitters identified problems with lack of enforcement of restrictions in marine national parks and sanctuaries, particularly about illegal harvesting of fish and abalone. This problem was commonly attributed to lack of on-ground presence from Parks Victoria staff and was seen as a threat to the ecological integrity of the marine protected areas.

Threats to the marine environment

Some submissions reported that a lack of active management has led to an increase of marine pests which are harmful to the indigenous flora and fauna. These submitters felt that recreational and commercial fishing, if permitted in the no-take areas, could assist in the monitoring and removal of marine pests.

Some submissions talked about catchment-related threats including the local impacts of waste and pollutants. These submitters are concerned that poor land management and planning within catchments is threatening marine ecosystems. They are keen to see a more integrated approach to planning with catchment management plans being integrated into marine planning processes.

A few submitters felt that many recreational activities, including boating, jet-skiing, fishing and shell collecting, were also threatening marine ecosystems.

Other feedback

Some submitters felt they would like to see the terms of reference for the investigation broadened to include the wider marine environment in Victoria.

Whilst some submissions suggested extensions to existing parks or sanctuaries and an increase in the level of protection for some areas, there were other submitters who wanted to see restrictions eased in no-take areas similar to the management regime in other marine and coastal parks.

Some stakeholders felt strongly that the no-take marine protected areas were not achieving the objectives set out in the Environmental Conservation Council's Marine, Coastal and Estuarine Investigation. They felt that fisheries management objectives could be incorporated into marine protected area objectives.

1.7.2 SURVEYS OF COMMUNITY ATTITUDES

Where possible, VEAC supplements its understanding of community views received from submissions and through advisory groups with information from sampling the broader Victorian community.

Research commissioned by DSE, in consultation with VEAC, in 2011 aimed to better understand the Victorian community's awareness of, and attitudes towards, Victorian marine national parks and marine sanctuaries. Levels of unprompted and prompted awareness surrounding marine national parks and sanctuaries were first gauged, followed by an exploration of respondents' understanding of their role, purpose and usage. Information from this survey will used in the assessment for the investigation.

The Victorian Coastal Council also periodically commissions social research on community attitudes and behaviours on the Victorian coastal and marine environment, including awareness of marine national parks and sanctuaries. Four surveys have been conducted from 1995 to 2011.

1.7.3 COMMUNITY REFERENCE GROUP

The Community Reference Group (CRG) has provided valuable input into the investigation so far, and their views and comments will continue to be provided to Council during the course of the investigation. Issues raised by CRG members included the potential for citizen science and Indigenous knowledge to inform VEAC's assessment of marine protected areas in addition to information from scientists working in academia, museums, government agencies and business. The group felt that observational reports from park users are also a valuable resource for protected area management, and that Friends groups in particular can offer specialised expertise from their members. The CRG considered that this investigation is an opportunity to develop clear scientific questions to guide participants in citizen science on the research and monitoring data most useful for informing management.

The CRG discussed some of the threats posed to Victoria's marine protected areas. It was felt that this investigation provided the opportunity to highlight relevant threats to specific categories of marine protected areas; for example catchment threats may affect marine protected areas in embayments more than those on open coast. Members also noted that climate change will alter the ecology of marine protected areas, and it will important to factor this into the way that performance of marine protected areas is assessed.

The CRG has also provided advice on consultation processes and methods for gaining the community's views.

1.7.4 EXPERT ADVICE

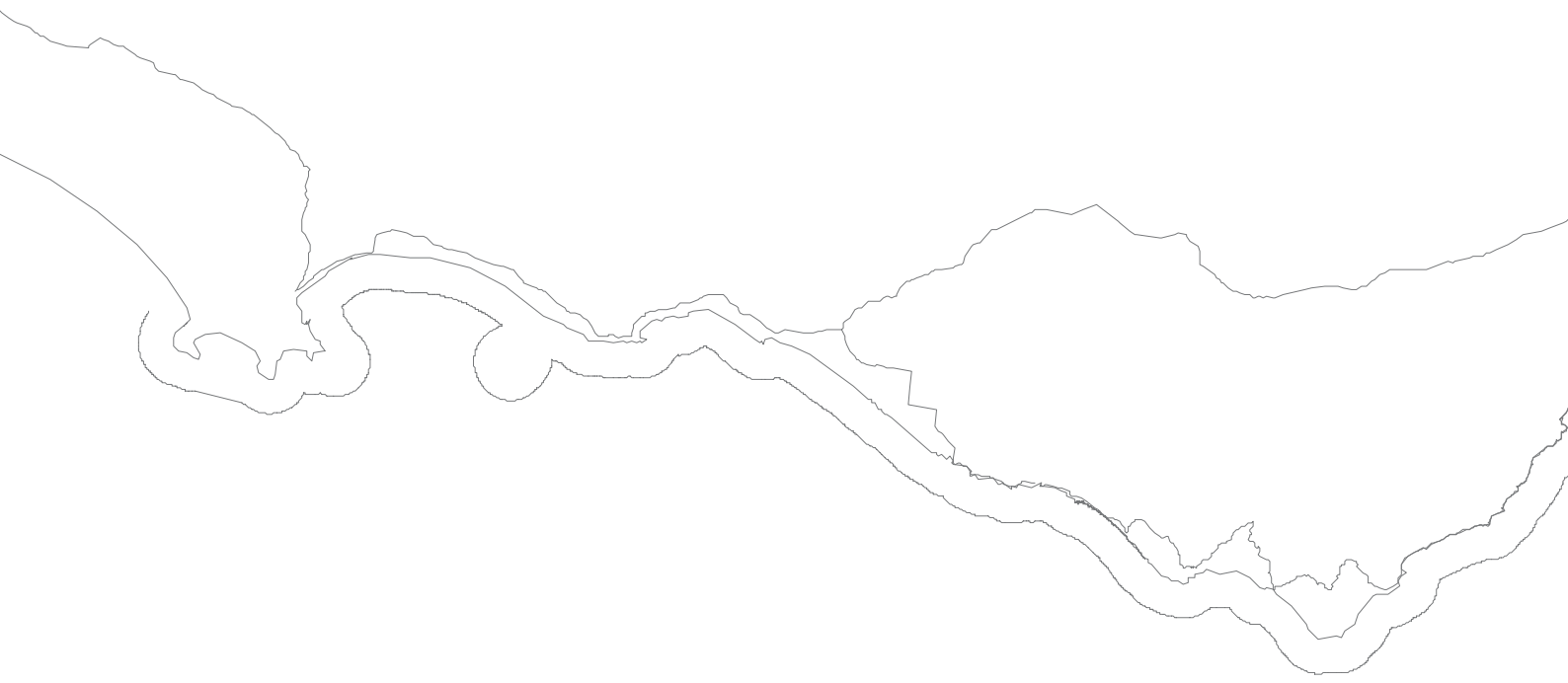
VEAC has commissioned expert advice to inform the investigation through a Scientific Advisory Committee and a number of scientific consultancies.

Scientific Advisory Committee

This committee's role is to provide advice to VEAC throughout the course of the investigation on current scientific research and data applicable to the investigation, techniques and approaches that would assist VEAC in the conduct of this investigation, particularly relating to assessing performance against ecological criteria, and key gaps in relevant scientific knowledge that could be addressed by research in both the short term and long term. Members of the Scientific Advisory Committee are listed on the inside front cover of this report. The committee has provided input to the investigation in meetings and through out of session consultation.

Consultancies

VEAC has commissioned a number of expert consultancies to inform the investigation. One of these projects, a review of approaches for assessing ecological outcomes of marine protected areas, has been completed and the outputs incorporated into this discussion paper. The remaining projects are currently underway and will inform the next stages of the investigation. VEAC will commission additional expert advice as the need is identified during the course of the investigation.



B

VEAC's proposed approach to the assessment

2. Establishment and management of Victoria's marine protected areas

This section provides an overview about Victoria's marine protected areas, how they were established and how they are currently managed. This information will assist readers to understand both the terms of reference (outlined in section 1.3) and VEAC's proposed approach to addressing these through the investigation (discussed in chapters 3 and 4). Details about each individual marine protected area are provided in chapter 5 as a resource to further assist with interpreting the discussion paper.

2.1 Victoria's marine protected area system

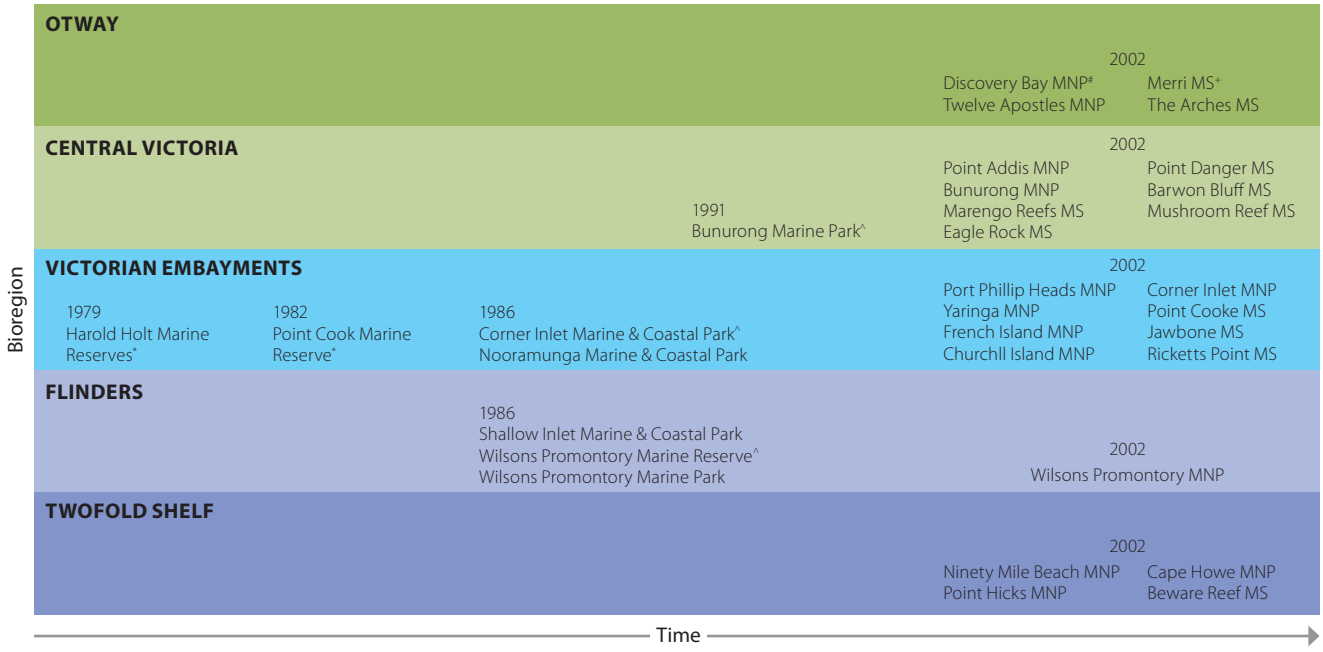
Victoria's marine protected areas system includes both multiple-use and no-take areas, which were established at different times and for slightly different purposes. All marine protected areas in Victoria are 'parks' under the *National Parks Act 1975* and are managed by Parks Victoria. Commercial and recreational fishing in the multiple-use parks is managed by the Department of Primary Industries.

No-take marine protected areas are the 13 marine national parks and 11 marine sanctuaries established in 2002 following the recommendations of the then Environment Conservation Council in the *Marine, Coastal and Estuarine Investigation Final Report*.[1] No extractive uses are allowed in these marine protected areas. The marine national parks and marine sanctuaries can be categorised as International Union for Conservation of Nature (IUCN) Category II or III protected areas. Category II protected areas are managed mainly for ecosystem protection and recreation and Category III areas managed mainly for conservation of natural features.[2] IUCN categories are a classification and reporting tool used by jurisdictions nationally and internationally, and *reflect* rather than *direct* management.

Multiple-use marine protected areas include the six marine parks, marine reserves and marine and coastal parks established prior to the Marine, Coastal and Estuarine Investigation that were not subsumed wholly or partially into no-take marine protected areas in 2002. Multiple-use marine protected areas have a lower level of protection with recreational and commercial fishing permitted in these areas. Unlike the no-take areas, some multiple-use marine protected areas include areas of coastal land. Multiple-use marine protected areas could be classified as IUCN Category VI marine protected areas, which are managed to protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.[2]

While development of Victoria's terrestrial protected area system began in the late 19th century, it was not until 80 years later that governments started to extend Victoria's protected areas into the marine environment. Victoria's marine protected areas were established over 23 years from 1979 when the Harold Holt Marine Reserves were established. Figure 2.1 shows a timeline of the declaration of Victoria's marine protected areas, and the following sections provide further description of the history of their establishment. Sections 2.2.1 and 2.3.1 summarise the purposes of establishment for no-take and multiple-use marine protected areas, and appendix 2 provides further detail about these purposes.

Figure 2.1 Timeline of establishment of Victoria's marine protected areas



* These were entirely subsumed into highly protected areas in 2002 ^ Portion of these parks were subsumed into highly protected areas in 2002
# Marine National Park (MNP) + Marine Sanctuary (MS)

2.1.1 THE FIRST MARINE PROTECTED AREAS

The first marine protected areas declared in Victoria were the Harold Holt Marine Reserves in 1979. These five small reserves located in the southern end of Port Phillip Bay were established under fisheries legislation.[3] Collection of flora and fauna, including all fishing, was prohibited in the three hectare Annulus (or Popes Eye) reserve, while commercial fishing and recreational line fishing was allowed in the other reserves. An additional reserve was created in 1982 under fisheries legislation on the western shoreline of Port Phillip Bay at Point Cook, and included a small no-take sanctuary zone.

In 1982 the Land Conservation Council‡ recommended that one marine reserve and three marine and wildlife reserves be established around Wilsons Promontory.[4] The Victorian government announced its intention to establish these reserves and invited public submissions prior to preparing a draft zoning plan, which was published for public comment in 1984. Five large marine protected areas were established in 1986 under Crown lands and national parks legislation following a long and controversial consultation program. Fishing was excluded from the marine reserve around the southern part of Wilsons Promontory, but the Supreme Court found in 1987 that licensed commercial fishing could not at that time be prohibited by means of parks legislation.

After another long and controversial period of public consultation, the Bunurong Marine Park near Inverloch was established in 1991 using a mosaic of Crown lands, national parks and, unlike the Wilsons Promontory Marine Reserve, fisheries legislation. The Bunurong Marine Park included a relatively large no-take sanctuary zone.

‡ The Land Conservation Council was replaced by the Environment Conservation Council in 1997 which in turn was replaced by the Victorian Environmental Assessment Council in 2001.

2.1.2 ESTABLISHMENT OF MARINE NATIONAL PARKS AND SANCTUARIES

In 1991 the Victorian government directed the Land Conservation Council to conduct an investigation into Victoria's marine and coastal environment that was to include recommendations on the establishment of a representative system of marine protected areas. Several reports were published for public comment by the Land Conservation Council and its successor, the Environment Conservation Council, prior to final recommendations being submitted to the Victorian government in 2000.

Initial legislation to create a system of no-take marine national parks and marine sanctuaries was introduced and then withdrawn by the minority Labor government in 2001. The legislation was subsequently amended and re-introduced in 2002 and was passed with bipartisan support. The Harold Holt Marine Reserves and the Point Cook Marine Reserve in Port Phillip Bay were subsumed into the new no-take marine national parks or sanctuaries, as was the sanctuary zone of the Bunurong Marine Park, most of the Wilsons Promontory Marine Reserve, and a small part of the Corner Inlet Marine and Coastal Park.

Box 2.1 Bioregional basis for Victorian marine protected areas

Important factors in the Environment Conservation Council's recommendations for a comprehensive, adequate and representative system of marine protected areas were that the range of habitats within each of the five biophysical regions in Victoria was represented (comprehensiveness), and that more than one example of major habitats was included to incorporate the range of variability within each habitat type (representativeness) and to guard against loss due to unforeseen or catastrophic events (adequacy).

The recommendations took into account a nationally agreed regional ecosystem-based classification for the Australian marine environment that recognises five biophysical regions in Victoria. The classification known then as the Interim Marine and Coastal Regionalisation of Australia (IMCRA version 3.3), and now as the Integrated Marine and Coastal Regionalisation of Australia (IMCRA version 4.0) is a spatial framework for classifying Australia's marine environment into bioregions that make sense ecologically and are at a scale useful for regional planning. The five IMCRA bioregions in Victoria are: Otway, Central Victoria, Victorian Embayments, Flinders and Twofold Shelf (see figure below).

2.2 No-take marine protected areas

The system of no-take marine protected areas consisting of 13 marine national parks and 11 marine sanctuaries was established by the Victorian government in 2002. Covering 5.3 percent of Victoria's marine environment, as outlined previously this system was based on recommendations made by the Environment Conservation Council (ECC) in the *Marine, Coastal and Estuarine Investigation Final Report*.[1] The recommendations were based on a nine year investigation commenced by the ECC's predecessor, the Land Conservation Council (LCC). During this time six public consultation periods were undertaken and more than 4,500 written submissions and letters were received.

2.2.1 PURPOSES FOR WHICH NO-TAKE MARINE PROTECTED AREAS WERE ESTABLISHED

The purposes for which the no-take system of marine protected areas was established are drawn from a number of authorities. Appendix 2 outlines specific details relevant to the purposes of establishment for marine national parks and marine sanctuaries. For this investigation, the establishment purposes for no-take marine protected areas are broadly interpreted as being to:

- protect natural ecosystems including biodiversity, natural processes, indigenous flora and fauna, and features of scenic, archaeological, ecological, geological, historic or other scientific interest, and to
- provide opportunities for recreation and education associated with enjoyment and understanding of natural environments where consistent with the above.

Maintenance of natural ecosystems as a reference for comparing other areas was an explicit purpose of establishment for marine national parks, but not for marine sanctuaries. The no-take marine protected areas were also intended to contribute to the national representative system of marine protected areas.

2.2.2 MANAGEMENT OF NO-TAKE MARINE PROTECTED AREAS

The terms of reference for this investigation (see section 1.3) include multiple references to management. This section provides a brief overview of current management of no-take marine protected areas to provide some context for VEAC's proposed approach to assessing management of these areas, which is outlined in chapter 3.

Following the 2002 declaration of the system of no-take marine national parks and marine sanctuaries, Parks Victoria prepared an overarching strategy for management of these areas: *Management Strategy 2003-2010*.[5] Parks Victoria has indicated that it will wait until the outcomes of this current VEAC investigation are available before reviewing this strategy. Management plans were developed for all the marine national parks and marine sanctuaries following the release of the *Management Strategy 2003-2010*. In some instances management plans are for one marine protected area; in others several marine protected areas are grouped in one management plan.

After the no-take marine protected areas were established, the management focus became mitigation of threats to their agreed values or establishment purposes. The management plans for marine protected areas include strategies to mitigate threats that were perceived as the highest priority. Threats to marine protected areas are widely understood to occur from both within and beyond their boundaries. Chapter 4 of this discussion paper describes general threats to the marine environment and the approach that VEAC proposes to use to assess the ongoing threats to marine protected areas (relevant to term of reference (b)—see section 1.3).

Parks Victoria is responsible for many aspects of compliance with legislation in marine protected areas, except for compliance with prohibitions on fishing which is carried out by the Department of Primary Industries under a service arrangement with Parks Victoria. As no-take marine protected areas are fundamentally defined by the absence of fishing and other extractive activities, mitigation of risks of illegal fishing through ensuring compliance with legislation is a clear priority. Law enforcement activities are complemented by education activities. Raising community awareness, ownership and involvement in marine national parks and marine sanctuaries is a strategy aimed at enhancing compliance with legislation.[5]

Research and monitoring

Research

Parks Victoria undertakes research to inform adaptive management of protected areas.[6] Adaptive management is a standard approach to protected area management, and is characterised by an iterative cycle where knowledge gained through research and monitoring is utilised to improve management decisions and actions. To improve ecological understanding and protected area management, Parks Victoria has established a collaborative Research Partners Program with universities and research institutions.[7] An example of a project undertaken through this program is development of conceptual models of marine habitats which describe, and show relationships between, environmental factors, habitat, threats and management options. In addition, specific research is commissioned to fill knowledge gaps relating to other aspects of management; for example, market research undertaken to better understand awareness and usage of marine protected areas.[8, 9]

Monitoring

Intertidal and subtidal reefs in marine national parks and sanctuaries have been monitored for many years. Parks Victoria is now reviewing the objectives of this program with the aim of ensuring alignment with its current management framework. There are also community-based monitoring programs within some of the no-take marine protected areas, including Sea Search and Reef Watch.

Reef monitoring programs

Parks Victoria initiated an intertidal reef monitoring program in 2003 for seven marine national parks and marine sanctuaries, which was extended to an additional two sites in 2004.[10] The stated objective of this monitoring is to assess ecological condition over time to inform management of threats. Monitoring sites are located within certain marine national parks and marine sanctuaries, each with an accompanying reference site outside of the marine protected area boundaries. The program involves regular visual surveys of invertebrates and seaweed on intertidal reefs using a standardised procedure.[11] The no-take marine protected areas selected for intertidal monitoring are high visitation areas at greater risk of trampling and fossicking impacts.[12]

A subtidal reef monitoring program was initiated by the then Department of Natural Resources and Environment prior to establishment of Victoria's system of no-take marine national parks and marine sanctuaries. The stated objective of this monitoring is to assess ecological condition over time to inform management of threats.[13] This monitoring program commenced in 1998 around Port Phillip Heads and was extended in 1999 to include reefs in the areas now included in Bunurong and Wilsons Promontory marine national parks.[13] The program included a site near Phillip Island that is outside of the marine protected area system but is included in the current subtidal monitoring program.[13] Following establishment of the system of marine national parks and marine sanctuaries in 2002, the subtidal reef monitoring program was expanded to a total of 14 sites, 13 of which are within no-take marine protected areas.[12] The subtidal reef monitoring program uses a standard procedure to survey fish, invertebrates and seaweed in relatively shallow water.[14]

Community-based monitoring programs

Community-based monitoring provides a means for people to interact with and better understand the marine environment with the benefit of capturing additional information useful for education and management. Community-based monitoring programs in Victoria's marine protected areas include Sea Search and Reef Watch Victoria. Parks Victoria facilitates the Sea Search program, which includes intertidal reef, subtidal reef and seagrass monitoring programs. Parks Victoria is currently refining the methods used in Sea Search monitoring activities, and is planning to extend the program to mangrove habitats. Reef Watch Victoria supports marine monitoring and coordinates the annual Great Victorian Fish Count.

Visitor and community attitude surveys

Parks Victoria monitors community perceptions and attitudes towards marine national parks and marine sanctuaries through its Community Perception Monitor and Visitor Number Monitor surveys. The Community Perception Monitor has been undertaken in 2006, 2008, 2010 and 2012. This work examines perceptions of Parks Victoria's management of protected areas, including marine national parks and marine sanctuaries[15] while the Visitor Number Monitor tracks visitation.[16] Market research into the awareness and usage of marine national parks and marine sanctuaries was undertaken in 2005[8] and 2012[9] to enable communication to be targeted and relevant for these users.

The Victorian Coastal Council has also gauged community attitudes towards marine protected areas, and the marine environment more broadly, in its 2007 and 2011 *Victorian Coastal and Marine Environment Community Attitudes* and *Behaviour Research*.[17, 18] In preparation for this investigation, and in consultation with VEAC, DSE commissioned additional research focusing more specifically on awareness of, and attitudes towards, Victoria's marine environment and marine national parks and sanctuaries (also see section 1.7.2).

Community awareness and involvement

Community awareness of, and interactions with, marine protected areas is generally believed to foster appreciation and stewardship, encouraging people to act responsibly towards the marine environment and marine protected areas. Marine protected areas provide a focal point for this awareness and interaction, including school visits, Summer by the Sea activities (Coastcare Victoria's annual festival), eco-based tours and marine life surveys.

Parks Victoria, Queenscliff Marine and Freshwater Discovery Centre, Museum Victoria and the Dolphin Research Institute are some of the main organisations in Victoria that provide marine education to the general community. Education and awareness campaigns run by these organisations include the 'i sea, i care' Ambassador Program run by the Dolphin Research Institute, Junior Rangers run by Parks Victoria and the Explore nderwater Victoria website www.exploreunderwatervictoria.org.au developed with inputs from many organisations.

Friends groups are an important means for the community to engage with marine protected areas. Groups often take an active role in raising awareness in the broader community about the values of a marine protected area, preparing educational and interpretive information such as signs, brochures, websites and displays. Some groups facilitate opportunities for people to experience these values first hand through school excursions, rockpool rambles, marine life surveys and community based monitoring. Examples of work undertaken by Friends groups can be seen on websites such as those provided by the Friends of the Bluff (www.barwonbluff.com.au), Marine Care Point Cooke (www.mcpc.org.au) and Marine Care Ricketts Point (www.marinecare.org.au).

2.3 Multiple-use marine protected areas

All six of Victoria's multiple-use marine protected areas are in Gippsland:

- five areas around Wilsons Promontory:
  - > Shallow Inlet, Corner Inlet and Nooramunga marine and coastal park
  - > Wilsons Promontory Marine Park
  - > Wilsons Promontory Marine Reserve
- Bunurong Marine Park on the east and west sides of the Bunurong Marine National Park.

The marine and coastal parks include coastal land which accounts for approximately 10 percent, 20 percent and 40 percent of the total area of Corner Inlet, Shallow Inlet and Nooramunga marine and coastal parks respectively.

As discussed in section 2.1, the multiple-use marine reserves in Port Phillip Bay were all incorporated into the Port Phillip Heads Marine National Park and Point Cooke Marine Sanctuary in 2002. Some parts of the original South Gippsland areas were subsumed into the Wilsons Promontory and Corner Inlet marine national parks.

2.3.1 PURPOSES FOR WHICH MULTIPLE-USE MARINE PROTECTED AREAS WERE ESTABLISHED

The purposes of establishment for multiple-use marine protected areas can be drawn from a number of authorities. Unlike the no-take marine protected areas there are individual differences between multiple-use marine protected areas in the documented purposes for which they were established. The specific details relevant to each multiple-use marine protected area are detailed in appendix 2 and summarised for each area in chapter 5.

For this investigation, the establishment purposes for multiple-use marine protected areas can be broadly interpreted as being to:

- protect areas containing significant natural ecosystems (including the habitat of international migratory waders in Nooramunga, Corner Inlet and Shallow Inlet) for their ecological significance, natural interest or beauty, scientific history and/or archaeological interest, and to
- provide opportunities for recreation and education associated with enjoyment and understanding of natural environments.

Integral to the establishment of these areas was recognition of significant ecological values that need to be managed in a way that accommodates sustainable use of resources including, but not limited to, commercial and recreational fishing. These areas are also considered to supplement Victoria's contribution to the national representative system of marine protected areas.

2.3.2 THE MARINE, COASTAL AND ESTUARINE INVESTIGATION AND MULTIPLE-USE MARINE PROTECTED AREAS

The Environment Conservation Council's *Marine, Coastal and Estuarine Investigation Final Report*[1] did not recommend the establishment of any new multiple-use marine protected areas. The report recommended that some multiple-use marine protected areas, and portions of others, be subsumed into no-take marine national parks and marine sanctuaries, and broadly that the other areas continue to be managed for multiple uses which do not impact on the values and objectives of the park. The Council noted that the management practices in these areas should be subject to reviews resulting from new information and the usual reviews of management that take place from time to time.

The Environment Conservation Council considered suggestions to change the terminology for multiple-use marine protected areas to one name instead of the three different names: marine park, marine reserve and marine and coastal park. This was not recommended as it was not widely supported among stakeholders. The Council also believed there were some advantages in retaining names that were well established in the community and in some cases reflected the character of the park more accurately (e.g. marine and coastal parks include areas of coastal land).

2.3.3 MANAGEMENT OF MULTIPLE-USE MARINE PROTECTED AREAS

The terms of reference for this investigation (see section 1.3) include a focus on management of marine protected areas. This section provides a brief overview of current management of multiple-use marine protected areas to provide some context for VEAC's proposed approach to assessing management of these areas outlined in chapter 3.

Parks Victoria is the designated manager of multiple-use marine protected areas; however the management arrangements for these areas are more complex than those for no-take marine protected areas. By definition, multiple-use marine protected areas provide for a range of activities, for which a suite of interrelated management frameworks apply. This means that a number of other land managers are active in the multiple-use protected areas, including the Department of Primary Industries for commercial and recreational fishing and hunting management, and Gippsland Ports for waterway management.

As marine and coastal parks include both marine and terrestrial (coastal) environments, legislative and management frameworks for both environments apply in respective parts of the parks. Most frameworks apply to both terrestrial and marine environments, including those established under the *National Parks Act 1975, Flora and Fauna Guarantee Act 1988, Environment Protection and Biodiversity Conservation Act 1999, Wildlife Act 1975* and *Coastal Management Act 1995*.

Strategic plans established under these management frameworks have been prepared for the some of the areas included in multiple-use marine and coastal parks. The Corner Inlet Ramsar Site encompasses the majority of the area of Corner Inlet and Nooramunga marine and coastal parks. A strategic plan for this Ramsar site aims to 'facilitate conservation and wise use of the site so as to maintain, and where practical restore, the ecological values for which it is recognised'.[19] The *Gippsland Estuaries Coastal Action Plan*[20] covers areas in Shallow Inlet, Corner Inlet and Nooramunga marine and coastal parks. This Coastal Action Plan aims 'to provide a strategic framework to improve the quality, consistency and efficiency of planning and management decisions affecting estuaries in the Gippsland region'.[20]

Apart from the *Environment Protection Act 1970*, legislation and management frameworks that apply to the marine portions of multiple-use marine protected areas are generally sectorally based, and include the *Fisheries Act 1995, Marine Safety Act 2010, Petroleum Act 1998* and *Pipelines Act 2005*. The *Fisheries Act 1995* and *Fisheries Regulations 2009* regulate commercial and recreational fishing. Fisheries management plans for certain commercially harvested species are established under this framework. The Corner Inlet commercial fishery, which covers both the Corner Inlet and Nooramunga marine and coastal parks, is specifically regulated under a Corner Inlet Fisheries Access Licence. A voluntary licence buy-back scheme in 2000 for Victorian bay and inlet commercial fisheries resulted in the cessation of commercial fishing in the Shallow Inlet Marine and Coastal Park.

A *Gippsland Boating Coastal Action Plan* provides strategic guidance for boating that focuses on ensuring appropriate facilities across the region, including within multiple-use marine protected areas.[21] Commercial maritime operations in the Corner Inlet and Nooramunga area are linked to fishing, trade across Bass Strait and the oil and gas industries.[22] Gippsland Ports manages the ports of Corner Inlet and Port Albert which include most of the area of Corner Inlet and Nooramunga marine and coastal parks. Gippsland Ports also manage the waterways of Shallow Inlet which are in the marine and coastal park. Commercial vessels are regulated by both Victorian and Commonwealth legislation, depending on the type of voyage the vessel is undertaking. The main legislative frameworks for commercial shipping are the *Marine Safety Act 2010* (Victoria) and *Navigation Act 1912*^ (Cwlth).

Three multiple-use marine protected areas are included in management plans that cover a larger planning area. Bunurong Marine Park is included in a management plan that also includes the Bunurong Marine National Park, Bunurong Coastal Reserve and Kilcunda-Harmers Haven Coastal Reserve in the planning area.[23] Wilsons Promontory Marine Park and Marine Reserve are included in the *Wilsons Promontory Marine National Park* and *Wilsons Promontory Marine Park Management Plan*.[24]

Management of the coastal land in the marine and coastal parks is currently complex and difficult as various parts of the parks were reserved at different times using different mechanisms. The reservations of coastal Crown land have not yet been re-made to reflect the intended boundaries of the marine and coastal parks. As a consequence, there is a multitude of old or obsolete reservations and an absence of appropriate regulations. Chapter 5 provides further information for individual marine and coastal parks.

Draft management plans for the three marine and coastal parks were prepared in 1990 (Shallow Inlet Marine and Coastal Park) and 1996 (Corner Inlet and Nooramunga marine and coastal parks). Finalisation of these plans was initially deferred to await the outcome of the Land Conservation Council's then Environment Conservation Council's Marine, Coastal and Estuarine Investigation.[25] The complexities associated with these marine and coastal parks were not resolved in, or following, this investigation and the plans currently remain in draft form.

^An amendment to this Act is being considered in 2012.

3. Performance and management of Victoria's existing marine protected areas: addressing term of reference (a)

This chapter interprets term of reference (a) (in section 3.1) and goes on to outline (in section 3.3) the approach that VEAC proposes to apply to its assessment of term of reference (a). Before this approach is outlined, section 3.2 introduces the internationally accepted framework which VEAC proposes to use to structure its assessment. The box at the end of this chapter highlights some key questions on which VEAC would particularly appreciate your feedback.

3.1 Interpreting term of reference (a)

The investigation's first term of reference requires VEAC to examine, and provide an assessment of, the *performance and management* of *existing marine protected areas* in meeting the *purposes for which they were established*, particularly the protection of the natural environment, indigenous flora and fauna and other natural and historic values. The phrases or elements of this term of reference highlighted in italics (by VEAC) are significant to framing the scope of this examination and assessment. Sections 3.1.1 to 3.1.3 below describe how VEAC proposes to interpret these terms.

3.1.1 PERFORMANCE AND MANAGEMENT

The International Union for Conservation of Nature (IUCN) is the world's largest professional global conservation network, and is considered a leading authority on the environment and sustainable development. Administered by the IUCN, the World Commission on Protected Areas (WCPA) is the global leader in protected area expertise.

The IUCN-WCPA has developed a broad framework for assessing the management effectiveness of protected areas, as part of its series of best practice guidelines for protected area management. This framework defines management effectiveness as 'the assessment of how well the protected area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives'.[26] VEAC considers that this definition of management effectiveness covers much of the scope relevant to the requirement of term of reference (a) to assess *performance and management* and therefore proposes an assessment under this IUCN-WCPA framework. The IUCN-WCPA framework is described in more detail in section 3.2. The scope of VEAC's assessment will include the implications of relevant characteristics of marine protected areas—such as habitats, biodiversity and configuration—as well as the effectiveness of marine protected area management.

3.1.2 EXISTING MARINE PROTECTED AREAS

This assessment will focus on the existing marine protected areas described in chapter 5, which include both no-take and multiple-use marine protected areas. Of the six multiple-use marine protected areas, three (Bunurong Marine Park, Wilsons Promontory Marine Reserve and Wilsons Promontory Marine Park) are solely marine. The remaining three marine and coastal parks (Corner Inlet, Nooramunga and Shallow Inlet) include terrestrial areas.

The marine components of these protected areas, below the high water mark, contain a variety of marine habitats, including rocky reefs, soft sediments, seagrass and mangroves. The terrestrial areas include vegetated strips of coastline, small muddy and sandy islands and rock stacks. Nooramunga Marine and Coastal Park has the most terrestrial habitat, including around 30 islands which form part of a site of national geomorphological significance. Significant remnant native vegetation occurs on the larger Snake and St Margaret islands and Gellions Run on the mainland. There are clearly likely to be ecological linkages between the terrestrial and marine parts of those protected areas that extend across the coastal strip into the sea. For example, the Corner Inlet and Nooramunga marine and coastal parks are part of an internationally significant Ramsar wetland which is a complex of both marine and terrestrial environments.

3.1.3 PURPOSES FOR WHICH THEY WERE ESTABLISHED

Both terms of reference (a) and (b) require assessments with respect to the purposes for which Victoria's existing marine protected areas were established. These establishment purposes are described in sections 2.2.1 and 2.3.1 and in more detail in appendix 2. Establishment purposes with practically similar intent or meaning have been expressed in a variety of ways for different areas and/or in different source documents (which themselves have varying authority). VEAC therefore proposes to use a consolidated interpretation of these purposes (described overleaf) as the primary focus for its assessment. This consolidation is purely for practical assessment purposes and does not affect the formal purposes defined in relevant policy and statute. Those slight differences in establishment purposes that have practical implications will be taken into account in VEAC's assessment.

Policy references to the role of the existing marine protected areas in contributing to a national comprehensive, adequate and representative marine protected area system will be considered within VEAC's assessment against the establishment purposes relating to biodiversity protection.

As the terms of reference place an emphasis on ecological values, the ecological aspects of these purposes will receive priority in VEAC's assessment of performance and management. VEAC will, however, also consider the purposes that refer to providing for enjoyment and understanding of the natural environment.

Establishment purposes of no-take marine protected areas

For the purpose of VEAC's assessment, no-take marine protected areas are considered to have been established to:

- protect natural ecosystems including (indigenous) biodiversity, natural processes and features of scenic, archaeological, ecological, geological, historic or other scientific interest, and to
- provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments, where consistent with the above.

Marine national parks were also intended to provide a reference against which other areas may be compared. This was not an explicit purpose of marine sanctuaries.

Establishment purposes of multiple-use marine protected areas

While there are slight differences between individual multiple-use marine protected areas, for the purpose of VEAC's assessment these areas are generally considered to have been established to:

- protect areas containing significant natural ecosystems for their ecological significance (including habitat of international migratory waders for the three marine and coastal parks), natural interest or beauty, scientific history and/or archaeological interest
- manage these significant ecological values in a way that accommodates sustainable use of resources including, but not limited to, commercial fishing, and to
- provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments.

3.1.4 ABORIGINAL CULTURAL INTEREST OR SIGNIFICANCE

Section 18 of the VEAC Act 2001 outlines matters VEAC must take into account when conducting an investigation. Most relevant requirements of this section were included in the purposes of establishment of Victoria's existing marine protected areas and readily align with the requirements of the terms of reference for the investigation. A notable exception is consideration of 'cultural interest or significance' (section 18(c)), which is not explicitly referred to in the establishment purposes.

Increasingly, Aboriginal values and knowledge are being recognised and incorporated in protected area and natural resource management. The Environment Conservation Council, in the *Marine, Coastal and Estuarine Investigation Final Report*,[1] recommended that planning and management relating to traditional interests and uses in coastal and marine areas be based on recognition and respect for the traditional relationship of Aboriginal people with the land and sea.

This investigation provides a timely opportunity to look at best practice approaches to recognising and engaging Aboriginal people in marine protected area management (see box 3.1). For this investigation, the scope of cultural interest or significance includes, in particular, Aboriginal cultural interests in the environment, resources and cultural areas or sites within the marine protected areas.

Box 3.1 Advice on Aboriginal engagement in management

To support the investigation VEAC has commissioned advice on pathways and approaches for best practice recognition and engagement of Aboriginal Traditional Owners and other Aboriginal peoples in the use and management of Victoria's existing marine protected areas. This advice will be provided by Smyth and Barhrdt Consultants.

3.2 IUCN-WCPA framework for assessing management effectiveness

As discussed in section 3.1.1, the IUCN-WCPA framework for assessing management effectiveness for protected areas was developed as an international standard to provide a consistent basis for designing assessment systems, giving guidance about what to assess and providing broad criteria for assessment and an overarching best practice logic and approach.[26] Given the diversity of evaluation needs, aims and circumstances, the IUCN-WCPA chose to provide guidance at a framework level within which specific assessment methods could be tailored. The importance of flexibility in use of assessment systems and tools is stressed. The management effectiveness framework documentation is available on the IUCN's website at www.iucn.org.

The IUCN-WCPA framework is based on the idea that protected area management follows a process with six distinct elements and is a circular—rather than linear—process (see figure 3.1). These six elements are:

1. **context:** background information required for planning
2. **planning:** objectives and how they will be achieved
3. **inputs:** resources available for adequate management
4. **process:** the way in which management is conducted
5. **outputs:** what has been done
6. **outcomes:** what has been achieved i.e. the impacts or end results of management.

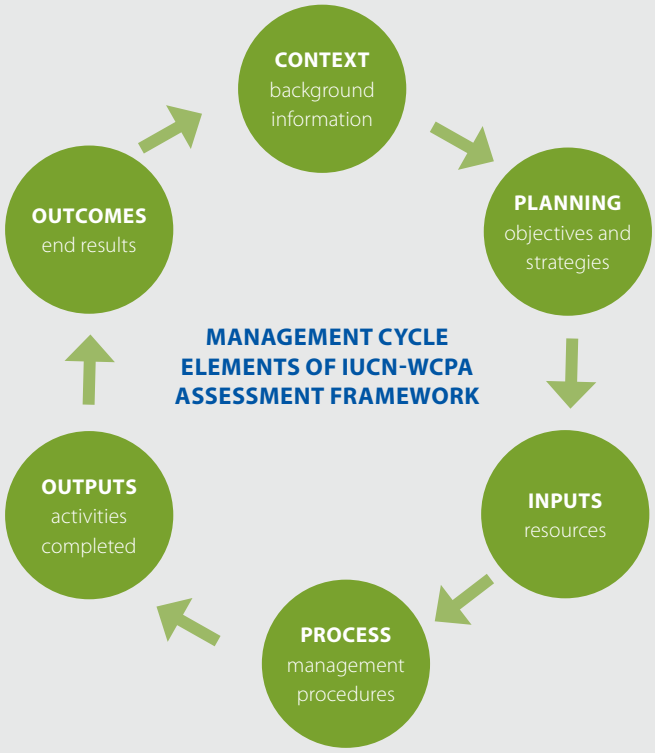


Figure 3.1 The IUCN-WCPA framework for assessing management effectiveness for protected areas – based on Hockings *et al.* 2006 [26]

3.3 Approach to assessing performance and management

VEAC's proposed approach to term of reference (a) will include consideration of both the effectiveness of the marine protected areas' management and the implications of characteristics of the areas themselves to their performance so far (see section 3.1.1). Relevant protected area characteristics may include the nature of their habitats, biodiversity and ecological processes—and the temporal scales on which they are likely to fluctuate—or aspects of their location and configuration. There is clearly potential for such characteristics to interact with the management regime within and beyond the marine protected areas in affecting protected area performance—emphasising the need for integrated consideration.

3.3.1 TAILORING THE IUCN-WCPA FRAMEWORK

VEAC proposes to use the internationally accepted IUCN-WCPA framework for assessing management effectiveness to broadly structure its assessment of term of reference (a).[26] This means that the structure of VEAC's assessment of 'performance and management of existing marine protected areas in meeting the purposes for which they were established' will essentially align with the six elements of the management cycle recognised in this IUCN-WCPA framework. As discussed in section 3.2, the IUCN-WCPA framework is deliberately broad so as to be adaptable to a range of specific assessment purposes, including informing operational protected area management.

In tailoring its application of the framework to address term of reference (a), VEAC's focus will be on providing a strategic overview of the performance and management of Victoria's marine protected areas since their establishment at least a decade ago. VEAC's approach to considering each element will be tailored so as to:

- reflect the nature of Victoria's marine protected area system which has not, as for many marine protected areas elsewhere, involved a zoning process
- align with the scope of term of reference (a), which focuses on management and performance of Victoria's marine protected areas *since their establishment*
- prioritise assessment effort towards those aspects most relevant to the management and performance of the marine protected areas over the longer term, and towards the defined establishment purposes.

VEAC plans to apply this same assessment structure to both the no-take and multiple-use marine protected areas, although there will clearly be differences in its implementation due to differences in their establishment purposes and management arrangements (see chapter 2). Components of the framework that fall outside of the scope of the investigation, including the design of the marine protected area system, will be excluded.

The output of VEAC's assessment of management effectiveness will be a descriptive analysis highlighting achievements and opportunities for future improvement. An ordinal assessment scale may be applied to those elements of the assessment for which suitable data are available.

Grouping marine protected areas for assessment

Because many of the IUCN-WCPA management cycle components relate similarly to, or are delivered across, a number of marine protected areas in Victoria, VEAC proposes to combine Victoria's existing marine protected areas into suitable groups for this part of its assessment. This will reduce the need to repeat the substantial common elements or artificially separate broad-scale management programs. Important differences among Victoria's marine protected areas that are relevant to the scope of the management effectiveness framework, and therefore to suitable assessment groupings, include:

- differences in establishment purposes — these vary most between the no-take and multiple-use areas, but there are also some differences within these groups
- differences in management approach — these vary most between the no-take and multiple-use areas, but there are also some differences within these groups. These other differences include the need to manage terrestrial land in some multiple-use areas
- differences in ecological characteristics — these vary most between the multiple-use areas that contain terrestrial land and the other marine protected areas.

VEAC therefore proposes to use the three groupings of marine protected areas described in figure 3.2 in its application of the management effectiveness framework. Within each group, ecological aspects of the assessment will be subdivided according to Integrated Marine and Coastal Regionalisation of Australia (IMCRA) bioregions (described in box 2.1), with any differences for individual protected areas highlighted in the analysis.

3.3.2 SCOPE OF ASSESSMENT

As discussed in section 3.2 and 3.3.1, the IUCN-WCPA framework focuses at an 'assessment-logic' level within which individual assessment approaches are intended to be tailored to individual circumstances and purposes. It is already clear that some key ecological characteristics of Victoria's existing marine protected areas will significantly affect the scope of VEAC's assessment within the broad structure of IUCN-WCPA framework. There is also a range of existing information and/or processes relating to Victoria's marine protected areas that are likely to affect the scope of the assessment. These are considered in the sections below.

Need to consider relevant marine areas beyond and within the protected area boundaries

The IUCN-WCPA framework recognises that the ecological outcomes of protected areas may be affected by factors well beyond their boundaries. As many submissions to VEAC have highlighted, Victoria's marine protected areas are surrounded by—and part of—this wider marine environment. While the *performance* assessment required by term of reference (a) focuses on the existing marine protected areas themselves, the assessment of relevant *management* is likely to need to extend beyond, as well as within, these areas.

Threats to marine protected areas

Marine protected areas are widely understood to be vulnerable to threats arising from both within and beyond their borders. Seawater, which can carry pollutants and various life stages of a range of marine species, can readily move across such boundaries. Submissions received by VEAC in response to the notice of investigation (see section 1.7.1) highlighted some of these large scale threats, including catchment water quality

Groupings for separate assessments	Bioregional* sub-categories for assessment elements	Note (where applicable) key differences for individual marine protected areas
1. Multiple-use marine protected areas with marine components only	Central Victoria Flinders	Bunurong Marine Park Wilsons Promontory Marine Park Wilsons Promontory Marine Reserve
2. Multiple-use marine protected areas with marine and terrestrial components	Victorian embayments Flinders South-east coastal plain (terrestrial bioregion)	Corner Inlet Marine and Coastal Park Nooramunga Marine and Coastal Park Shallow Inlet Marine and Coastal Park
3. No-take marine protected areas	Otway Central Victoria Victorian embayments Flinders Twofold shelf	Discovery Bay Marine National Park Merri Marine Sanctuary The Arches Marine Sanctuary Twelve Apostles Marine National Park Marengo Reefs Marine Sanctuary Eagle Rock Marine Sanctuary Point Addis Marine National Park Beware Reef Marine Sanctuary Point Danger Marine Sanctuary Port Phillip Heads Marine National Park Point Cooke Marine Sanctuary Jawbone Marine Sanctuary Ricketts Point Marine Sanctuary Mushroom Reef Marine Sanctuary Yaringa Marine National Park French Island Marine National Park Churchill Island Marine National Park Bunurong Marine National Park Wilsons Promontory Marine National Park Corner Inlet Marine National Park Ninety Mile Beach Marine National Park Beware Reef Marine Sanctuary Point Hicks Marine National Park Cape Howe Marine National Park

Figure 3.2 Proposed marine protected area groupings for assessment

* Bioregions based on IMCRA (marine bioregions - refer box 2.1) and IBRA (Interim Biogeographic Regionalisation for Australia – terrestrial bioregions)

and marine pests. VEAC's assessment of term of reference (b) will identify the priority ongoing environmental threats to marine protected area ecological outcomes (see chapter 4). This will guide the way that VEAC applies the IUCN-WCPA framework to these areas.

Ecological connectivity in marine environments

There are widely recognised to be many interconnections between the marine ecosystems, or biodiversity, in different types of marine habitats or places in Victoria, as occurs elsewhere in the world. One obvious contributor to this connectivity is the mobility of many marine species at various life stages. Victoria's marine species have a wide range of life cycle types, and this can significantly influence their dispersal range, distribution and temporal dynamics—and thus the dynamics of, and connectivity between, the ecosystems of which they are part. The important scales for key ecological processes that underlie ecosystem function can also affect connectivity.

Box 3.2 Examples of ecological characteristics and processes that could affect connectivity between Victoria's marine ecosystems

Victoria's marine ecosystems contain a variety of species that can cover large distances, by active swimming (e.g. marine mammals and pelagic fish) or by drifting in the currents. They also provide habitat for international travellers, including wading birds which are only seasonal visitors to Victoria. Species that are less mobile as adults, such as some seastars, could also disperse over great distances as plankton, during a separate larval stage in their life cycle. However, the distance that such larvae travel during that time can vary according to factors such as how long they spend in the plankton, their behaviour and water movement patterns—some remain very close to their 'parent' location (e.g. abalone or sessile invertebrates). Other species within Victoria's marine ecosystems (such as some whale species, King George whiting) inhabit separate breeding, or nursery, habitats or locations at different stages or seasons in their life cycle.

In contrast to these potentially 'mobile' species, there is also a suite of species that go through a quite different life cycle on a quite localised scale. The behaviour of some of the more mobile marine species, like some of the territorial fish, can also reduce their movement.

The dynamics of, and connectivity among, Victoria's marine ecosystems can also be influenced by key underlying processes such as nutrient and carbon cycles. These can be in turn influenced by larger scale, often dynamic oceanic processes, such as upwelling, but also by more localised physical and/or ecological factors. They can also be influenced by transfers from the landscape to seascape, in some cases via the waterways—highlighting the importance of cross-landscape ecological understanding and management approaches.

Some of the existing marine protected areas considered in this investigation do include coastal terrestrial areas, including islands, as well as marine waters.

Protected area biodiversity and ecological outcomes are thus very likely to be affected by ecological interactions and processes both within and beyond their boundaries. Some species with mobile life history stages may only spend a short time in a marine protected area, while others may go through their entire life cycle there. Scale was an important consideration in the original design of Victoria's marine protected areas and is also an important consideration for VEAC's current assessment of their performance so far.

Information relevant to elements of the IUCN-WCPA management cycle

There is a range of information available for Victoria's marine protected areas relevant to each element of the IUCN-WCPA framework's management cycle (described in section 3.2) that VEAC may draw upon for its assessment. Underlying information sources will be referenced in the assessment including, where relevant, a summary of strengths and weaknesses.

The relevant available information sources for each element include:

1. **Context:** information relating to establishment purposes; documented natural and social values of marine protected areas and threats to these values e.g. reports, expert opinion and other data.
2. **Planning:** management and monitoring plans; relevant policy and legislation.
3. **Inputs:** the Victorian Auditor-General's 2011 report *Environmental Management of Marine Protected Areas* supported by information on current resourcing status.
4. **Process:** plans, systems and procedures for management activities such as monitoring, compliance and threat assessment.
5. **Outputs:** reports such as annual reports; additional evidence of management activities e.g. number of surveys conducted or number of prosecutions.
6. **Outcomes:** is a complex area that is recognised by IUCN-WCPA to pose particular measurement challenges. Given these challenges, and that outcomes relate to the term *performance*, which is particularly highlighted in term of reference (a), the 'outcomes' element will be an important consideration in VEAC's assessment. VEAC's proposed approach to assessing marine protected area outcomes—and some of the key surrounding challenges—is therefore outlined separately in the following section.

3.3.3 ASSESSING OUTCOMES/ PERFORMANCE

Assessment of the overall *performance* of Victoria's existing marine protected areas broadly corresponds with the 'outcomes' element of the IUCN-WCPA management cycle. Ideally an 'outcomes' assessment would be based on measurements that are as directly relevant as possible to the values expressed in the establishment purposes—assuming these are technically and logistically possible—and available over an appropriate timescale and can be unambiguously interpreted. As for other marine protected areas internationally, however, it is very unlikely that quantitative, systematic measurements across a comprehensive suite of relevant, easily interpretable indicators will be available. While chapter 2 describes regular monitoring of biological communities on subtidal and intertidal reefs in the marine protected areas, similar programs do not appear to be available for all other ecosystem components relevant to the marine protected areas' establishment purposes.

A range of other information inputs can, however, be used to inform such assessments. The IUCN-WCPA framework notes that outcome evaluation usually needs to consider the current status of a value, the extent to which threats to that value have been reduced or to which other management objectives have been achieved, and the change in the value's status over the period being assessed. It thus draws on information from other elements of the management effectiveness assessment to assist interpretation. The approach described in the

Box 3.3 Advice on scale of ecological processes

VEAC has commissioned an overview of scientific understanding of the scales at which the ecological processes most critical to Victoria's marine biodiversity operate, particularly within the marine protected areas. This project will draw on the advice of a range of key relevant scientific experts, and will inform VEAC's assessment of this aspect of marine protected area outcomes.

IUCN-WCPA framework for assessing the status of any value entails deciding:

- what *attributes* of the value will be considered
- what *indicators* of this attribute will be measured or assessed
- what *methods* can be used to measure the indicator.

In identifying appropriate attributes, indicators and measures for assessing the performance of Victoria's marine protected areas, VEAC will take into account relevant scientific understanding, any established assessment approaches and indicators and practical information availability. The sections below further discuss the scope of this information for each of the relevant establishment purposes. VEAC has commissioned a number of consultancies to provide expert advice to inform its performance assessment.

Ecosystem-related purposes of establishment

The ecosystem-related purposes of establishment (see section 3.1.3) are described in a variety of ways, including biodiversity (indigenous), natural processes, features of ecological interest and systems of ecological significance. These descriptions have a common focus on aspects of *biodiversity* or *ecological processes*. VEAC therefore proposes to focus on these two aspects of the establishment purposes for its assessment of performance.

This section provides an overview of VEAC's intended approach to this performance assessment for the marine and terrestrial parts of the marine protected areas, focusing on biodiversity and ecological processes. The marine parts of the protected areas are considered in most detail in this section because they cover by far the most area.

Available information about indigenous biota, and the associated ecological processes, within the marine and terrestrial parts of each marine protected area—currently and since establishment—will clearly be an important input to the assessment. Chapter 5 gives an overview of each area's natural values, with references to more detailed information sources. Documented scientific understanding will be a key resource but will be supplemented by the following other types of information, where available:

- observations by marine protected area users, particularly frequent visitors such as Friends groups who are alert to unusual occurrences or temporal patterns
- Aboriginal knowledge
- expert judgement of scientists.

Box 3.4 Geological and geomorphological sites of significance

The marine protected areas' establishment purposes also refer to features of geological interest (see section 3.1.3). Many of Victoria's marine protected areas include sites of geological and geomorphological significance and VEAC has commissioned an updated report on these areas. Relevant sites include nationally significant features such as the Twelve Apostles and the Nooramunga barrier islands, State significant features such as Snake Island and regionally or locally significant features such as Split Point (in Eagle Rock Marine Sanctuary). This work will update previous assessments, including Neville Rosengren's work on the South Gippsland Marine and Coastal Parks (1989),[27] and R.W. Buckley's work across the entire Victorian coast (1993)[28] that informed the LCC's Marine, Coastal and Estuarine Investigation. This project will also provide expert advice, for VEAC's consideration, about the conservation needs of these sites and ongoing threats or challenges to their effective management.

Submissions and the Community Reference Group will be important mechanisms for accessing this information, along with some targeted consultancies. VEAC will carefully consider the characteristics of information from all of these sources in its interpretation. This will be assisted by the Scientific Advisory Committee processes described in section 1.7.4, which will also assist VEAC to interpret ecological information about Victoria's marine protected areas in the light of relevant international scientific understanding of biodiversity and ecological processes.

Marine components of the marine protected areas

No-take marine protected areas

The biodiversity of Victoria's no-take marine protected areas has been studied since their establishment, and in some cases well before then. Existing understanding is documented in Parks Victoria's Marine Natural Values reports. Similar compilations are not available for the multiple-use areas, but VEAC will review available information as part of its assessment.

An important context for VEAC's interpretation will be the well established, highly dynamic nature of marine ecological systems over time. Park Victoria's monitoring program for reef habitats (see chapter 2) captures this variation at some time scales. Submissions to VEAC described fluctuations at other time scales, including a huge aggregation of Port Jackson sharks at Point Cooke with currently unknown causes. Rather than being static maps or inventories progressively being 'filled in', the available information about each area's biodiversity is thus best considered—as for such protected areas elsewhere—an emerging window into an ecosystem with complex dynamics and underlying processes.

The importance of maintaining ecological processes is widely understood among scientists and policy-makers. For example, the goal of ecologically sustainable development is 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.[29] Scientific understanding about ecological processes, however, is much less developed than that of biodiversity per se. The Marine Natural Values reports list 'limited ecological knowledge of important processes' as a key threat to each no-take marine protected area. To better understand how ecological outcomes could be measured VEAC sought advice from Professor Peter Fairweather (see box 3.5).

Box 3.5 Advice on ecological outcomes of no-take marine protected areas

VEAC commissioned Prof Peter Fairweather, of Flinders University, to draw on existing knowledge of Victoria's marine protected areas, knowledge of comparable areas elsewhere, and wider understanding about marine ecosystems,
and provide:

1. Expert advice on current ecological thinking and literature on appropriate attributes and indicators that could be practically applied to assessing the outcomes of Victoria's existing marine protected areas in meeting their establishment purposes relating to biodiversity and ecological processes; and
2. A critical review of existing scientific assessments of the outcomes of marine protected areas, in comparable environments, in meeting comparable purposes—taking into account the spatial and temporal scale over it which it would be reasonable to anticipate ecological outcomes from such assessments.

This advice focused on the no-take marine protected areas. It built on the outputs of an initial roundtable discussion by VEAC's Scientific Advisory Committee for the investigation, of which Prof Fairweather is a member. The advice of the wider Scientific Advisory Committee members on the final report on this project has also informed VEAC's interpretation of its findings.

Fairweather's analysis,[30] supported by the Scientific Advisory Committee, provides a robust ecological basis for VEAC's consideration of appropriate attributes and indicators for assessing performance of the no-take marine areas for biodiversity and ecological processes. It also highlights some ecological considerations important when interpreting patterns in such indicators to draw conclusions about performance. Its key messages relating to both these aspects are summarised overleaf.

(i) Appropriate attributes and indicators for assessing performance for biodiversity and ecological processes

Ecological theory provides some clear predictions about the attributes of biodiversity and, to a lesser extent, ecological processes that may be affected by establishment of no-take marine areas—and the nature and direction of the effects. Such predictions should ideally inform selection of attributes and indicators for assessing the performance of such areas, and interpretation of their results.

Some relevant predictions include:

- That protection can directly affect the abundance (i.e. numbers, density) of marine organisms, their individual sizes, overall biomass and their diversity. While a critical review of the relevant scientific literature suggests that these indicators tend to increase on average in no-take reserves, there is much variation and direct effects tend to be strongest on the species targeted by the human activities being regulated (e.g. fished species).
- That not every species would increase in size or density in any marine protected area. Protection may initially favour some large species that may have been targeted, for example, by fishing. These species may then increase and interact with the rest of the environment e.g. they may eat other species. More natural behaviours, such as these, are one of the ecological outcomes that would be predicted for no-take marine areas.
- That indirect effects of no-take protection, such as those described above, would also occur, through marine populations and assemblages of multiple species, because the ecological interactions within the protected area are expected to become more 'natural'. These effects may only appear over time, potentially including increases in the reproductive output of populations and changed abundances of non-target species through trophic cascades and other interactions between species.
- That different species may respond to protection at quite different speeds.

Fairweather's report, drawing on the relevant international literature, discusses a range of more specific potential attributes and indicators that may be appropriate for assessing marine protected area performance with respect to biodiversity (at the genetic, species/population and ecosystem/landscape levels of biological organisation) and ecological processes. The report also considers the extent to which these attributes and indicators have been measured and/or applied to a similar purpose elsewhere.

VEAC will now assess the practical applicability of these attributes and indicators to its current assessment, taking into account the available information base.

(ii) Interpreting performance from patterns in ecological attributes and indicators

It is critical that performance assessments draw on careful, detailed predictions about how the temporal patterns in appropriate ecological indicators would differ between no-take and more heavily exploited areas if the establishment purposes had been achieved i.e. what does ecological theory predict that the patterns of difference between these areas would look like? Because marine communities in different places can vary over time in different ways, the most defensible performance assessments are based on comparing the temporal trajectories of appropriate indicators between no-take and reference areas over a time period extending before and after protection.

For no-take areas that are in good condition on establishment, such as almost all the Victorian no-take marine areas, any developing differences in biodiversity indicators between no-take and more heavily exploited areas would be predicted to result from ecological interactions within the no-take areas (e.g. across trophic levels) becoming more natural over time.

Multiple-use marine protected areas

The multiple-use marine protected areas were not within the scope of Fairweather's assessment, although he noted that most of the available international literature focuses on no-take rather than multiple-use marine protected areas. VEAC's consideration of appropriate attributes and indicators for assessing the ecological performance of the multiple-use marine areas will draw on both available understanding of their ecological values and the practical available information base.

Biodiversity values relating to migratory birds, for example highlighted by Ramsar listings, in the marine parts of the existing marine protected areas will be considered separately by VEAC drawing on resources such as relevant Ramsar site ecological character descriptions.

Terrestrial components of marine and coastal parks

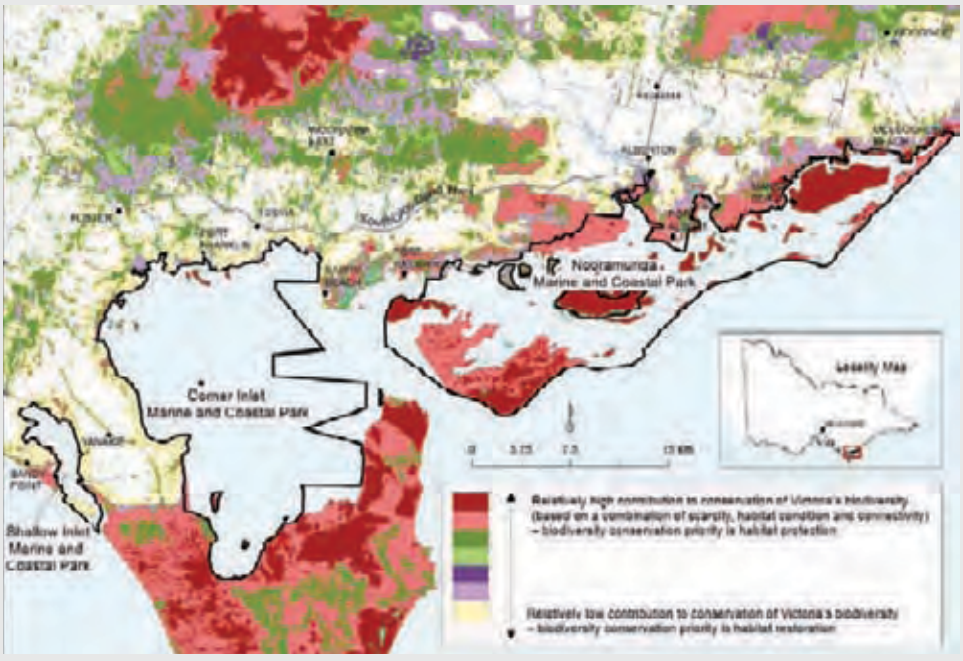
Terrestrial environments account for a relatively small proportion of the state's marine protected area estate, restricted to Victoria's three marine and coastal parks (Shallow Inlet, Corner Inlet and Nooramunga). These areas have highly significant ecological and geomorphological values that require due, but proportionate, consideration within VEAC's assessment. Habitat for international migratory waders was a particular ecological value highlighted in the establishment purposes of these areas. These marine and coastal parks were recommended for establishment prior to the declaration of the Corner Inlet Ramsar site, which separately recognises the international significance of the Corner Inlet-Nooramunga area for migratory bird species.

VEAC proposes to assess the ecological outcomes, or performance, of the terrestrial areas in these marine and coastal parks separately from that of the marine areas. A key initial step will be to describe the ecological characteristics of these areas in more detail, drawing on the types of information described earlier in this section. Important values are likely to include significant ecological communities, conservation listed species and sites of geological and geomorphological significance.

A range of existing terrestrial approaches and information resources are available to assist this task, notably including NaturePrint (see box 3.6) and outputs from the Ramsar management process.[31] VEAC's approach to assessing the performance of these areas with respect to their establishment purposes, including assessment attributes and indicators, will draw on these descriptions—as well as a practical assessment of the nature and extent of the available relevant information base.

Box 3.6 NaturePrint *Strategic Natural Values* and the Corner Inlet region

NaturePrint will be a valuable tool for understanding the ecological values of terrestrial areas in the three marine and coastal parks (Shallow Inlet, Corner Inlet and Nooramunga). NaturePrint's *Strategic Natural Values* map for the Corner Inlet region (below) captures information about the region's biodiversity values, habitat condition and connectivity. This map provides an initial indication that the terrestrial areas of Nooramunga Marine and Coastal Park make a relatively high contribution to the State's biodiversity values. NaturePrint was developed by the Department of Sustainability and Environment (DSE); more information about NaturePrint can be found on their website at www.dse.vic.gov.au. VEAC is working with DSE to further explore these data and better understand the factors contributing to the high relative rating of these areas.



Performance of marine national parks in providing a reference for comparison with other marine areas

As discussed in section 3.1.3, a further establishment purpose for marine national parks was to provide a reference for comparison with other marine areas. VEAC's performance assessment for this purpose will consider the extent to which the marine national parks have demonstrably been used for this purpose. For example, an attribute considered in the assessment could be the use of these areas in relevant monitoring and research programs, with potential indicators including the number of such programs implemented since the areas were established.

Purposes of establishment relating to enjoyment and understanding

Where consistent with the ecological purposes of establishment, Victoria's existing marine protected areas were established to provide for recreation and education associated with the enjoyment and understanding of natural environments. For the purposes of this investigation, VEAC's interpretation of 'understanding of the natural environment' includes community awareness and knowledge as well as scientific research and understanding.

Monitoring and assessment of performance in relation to use, enjoyment and appreciation of is much more commonplace in protected area management than assessment of ecological outcomes. Parks Victoria, for example, uses assessment measures relating to visitation, community attitudes and customer satisfaction to inform its management program.

As a range of considerations fall under the umbrella of 'enjoyment and understanding of the natural environment', VEAC proposes to recognise three categories for the purposes of this assessment:

- visitation
- community awareness
- scientific research.

While these categories are obviously interlinked (e.g. visitation could affect attitudes and vice versa), VEAC considers that these groupings will help structure the assessment. Table 3.1 summarises VEAC's current thinking about how outcomes could be assessed against the establishment purpose of enjoyment and understanding of the natural environment. This thinking will be refined by VEAC during the assessment, drawing on the information and comments provided in submissions.

Box 3.7 Advice on visitor information

VEAC has commissioned an expert review of available visitor information for Victoria's existing marine protected areas followed by further research to fill key information gaps identified in the review.

Table 3.1 Potential attributes and examples of potential indicators that could be used for assessing outcomes associated with enjoyment and understanding of the natural environment

Proposed categories of enjoyment and understanding values	Potential attributes	Examples of potential indicators
Visitation	unstructured visits	• type of activities undertaken • level of visitation
	structured group visits	• school visits • community group activities • tour operators
Community awareness	community perceptions and attitudes	• community awareness • community attitudes
	information	• type and availability of information
	community organisations	• existence and activities of community groups
	educational activities	• type of activities undertaken • level of activity
Scientific research	scientific activity	• research permits issued
	scientific understanding	• research topics

COMMENTS INVITED

VEAC would appreciate your feedback on the proposed approach to assessing *performance and management* of Victoria's existing marine protected areas in meeting the purposes for which they were established (term of reference (a) for the investigation).

What are your thoughts on the proposed approach to assessing performance and management of marine protected areas outlined in this chapter?

Can you identify information that you think is important for VEAC to be aware of when undertaking the assessment of performance and management of marine protected areas?

4. Threats and challenges to Victoria's existing marine protected areas: addressing term of reference (b)

This chapter interprets term of reference (b) (in section 4.1) and goes on to outline (in section 4.3) the approach that VEAC intends to take to its assessment. Before this approach is outlined, section 4.2 highlights some important considerations relating to the appropriate spatial and temporal scales for the assessment. Finally, some key questions are highlighted at the end of this chapter on which VEAC would particularly appreciate your feedback.

4.1 Interpreting term of reference (b)

The second term of reference for the investigation requires VEAC to examine, and provide an assessment of, any *ongoing threats and challenges to the effective management* of the *existing marine protected areas*, particularly in relation to the *biodiversity and ecological outcomes*.

The phrases or elements of this term of reference that have been highlighted in italics, by VEAC, are important for framing the scope of this assessment. Sections 4.1.1 to 4.1.3 below describe how VEAC proposes to interpret these key terms. This section draws on, and links with, material provided earlier in the discussion paper. The approaches to terms of reference (a) and (b) are intended to be complementary, with information from each component feeding into the other—thereby providing an overall assessment to inform future management.

4.1.1 BIODIVERSITY AND ECOLOGICAL OUTCOMES

The assessments required under both terms of reference (a) and (b) relate to the outcomes of Victoria's existing marine protected areas, placing particular emphasis on outcomes relating to the ecological purposes for establishment. The establishment purposes are described in full in appendix 2, and summarised in section 3.1.3.

Detailed and systematic assessment will focus on the ecological purposes, given their clear emphasis in term of reference (b). As with the approach to assessment of performance described in chapter 3, VEAC proposes to focus this assessment on two key values relating to the ecological purposes: biodiversity and ecological processes. VEAC will also consider key threats and challenges against the establishment purpose of providing for enjoyment and understanding of the natural environment.

4.1.2 EXISTING MARINE PROTECTED AREAS

As with the approach for addressing term of reference (a), this assessment of threats and challenges will focus on Victoria's existing marine protected areas described in chapters 2 and 5. These include both the no-take areas described in section 2.2 and the multiple-use areas described in section 2.3. The location of each area, which is potentially very relevant to the threats and/or challenges it faces, is shown on the map inside the back cover of this report.

The ecological characteristics of these areas are clearly also very relevant to assessing any ongoing threats and challenges, as they are for the assessment of performance and management required for term of reference (a).

4.1.3 ONGOING THREATS AND CHALLENGES TO EFFECTIVE MANAGEMENT

The words 'threats' and 'challenges', in the sense that they are used in term of reference (b), do not have well recognised, specific technical definitions. In considering how to interpret these terms for the investigation, VEAC has taken into account:

- their general meaning
- their potential scope with respect to this term of reference i.e. the range of matters or concerns that may affect the effective management of marine protected areas towards their ecological outcomes
- potential linkages with the outputs from VEAC's assessment of term of reference (a)
- relevant issues that were raised in submissions to the investigation.

The term 'threat' in this sense is generally considered to mean something likely to cause damage or danger, while 'challenge' relates more to a task or situation that tests the abilities of someone or something. Drawing on these general definitions and the considerations above, VEAC proposes to focus its assessment of term of reference (b) on:

1. **Management challenges:** challenges relating to the management of the protected areas, including challenges to mitigation of the threatening environmental agents or processes defined below
2. **Environmental threats:** the environmentally-based agents or processes that could adversely affect marine protected areas and their values, particularly those arising from human activities.

While term of reference (a) relates to the current performance of the marine protected areas, the ongoing focus of term of reference (b) requires a forward looking assessment of those threats and challenges that are likely to continue into the future.

Box 4.1 Implications of climate change for Victoria's marine protected areas

A review of current understanding of the predicted implications of climate change across Victoria's marine environment, led by Glenelg Hopkins Catchment Management Authority and the Department of Sustainability and Environment, is currently close to completion. VEAC has commissioned a project that will translate these predictions—as far as possible, given the scale and confidence of relevant projections—to the marine protected areas' locations, habitats, key species and, where possible, to the key ecological processes that affect them. This will be an important input to VEAC's environmental threat assessment.

4.2 Appropriate spatial and temporal scales for assessing ongoing threats and challenges

Section 3.3.2 briefly discussed the need for VEAC's assessment of the ecological performance of marine protected areas to be informed by understanding of the scales at which the relevant ecological processes operate. Assessment of the ongoing threats and challenges to the ecological outcomes of marine protected areas also requires careful consideration of scale, including the spatial and temporal scales relevant to both ecological processes and to environmental threats.

VEAC has commissioned advice on the scales at which the relevant ecological processes operate (see box 3.3). It is already clear, from existing scientific understanding, that ecological processes that occur outside, as well as inside, the protected area boundaries will be relevant. It is therefore also clear that environmental threats to key values or processes outside the protected areas will be relevant to the ecological outcomes of the protected area, and thus should be considered within VEAC's assessment of term of reference (b).

Human-related environmental threats to all these marine areas may also vary over time, consistent with the temporal patterns of underlying stressors. It is increasingly apparent that the future physical characteristics of Victoria's marine environment will differ from those today. A number of projected future characteristics of Victoria's marine waters (such as sea level, ocean current strength, temperature, salinity, pH and patterns of upwelling and freshwater inputs) resulting from climate change have the potential to have flow-on effects to biodiversity and ecological processes within Victoria's marine environment, including the marine protected areas.[32] There have already been some changes in some places, particularly in eastern Victoria. VEAC's assessment of the ongoing threats and challenges to the marine protected areas will consider these expected implications of future climate.

4.3 Proposed approach to assessing ongoing management challenges and environmental threats

The available understanding of biodiversity within Victoria's marine protected areas has developed significantly over time, and should provide a sound basis for a timely, scientifically robust and useful assessment of threats and challenges to their ecological outcomes. This understanding is of course incomplete, as for marine protected areas elsewhere, and varies across Victoria's marine protected area estate. There are also significant uncertainties in projections about the way that Victoria's marine environment will be influenced by future climate. Dealing with, and documenting, uncertainty has therefore been an important consideration in developing VEAC's approach to assessing ongoing threats and challenges. This is a common consideration in marine threat assessment processes. VEAC's intention is to provide a sound basis against which the assessment can be updated as understanding grows.

Threats and challenges to the marine protected areas have been considered in various ways since their establishment, in the planning and management processes that are summarised in chapter 2. This has included a stakeholder-based assessment, led by Parks Victoria, of the valued ecological attributes of, and threats to, each of Victoria's marine national parks and sanctuaries.[33] While VEAC will review the relevant existing assessments, this investigation will provide an independent assessment of ongoing threats and challenges as of 2012, focusing specifically on the ecological purposes for which the marine protected areas were established.

4.3.1 PROPOSED APPROACH TO ASSESSING ONGOING MANAGEMENT CHALLENGES

The outputs of VEAC's assessment to address term of reference (a), particularly the application of the IUCN-WCPA management effectiveness framework to the marine protected areas (see sections 3.2 and 3.3), will provide a structured basis for addressing this aspect of term of reference (b). In other words, completion of the assessment described in chapter 3 will identify management challenges relating to each of the IUCN-WCPA management cycle elements. The outputs of this assessment will relate to both the ecological purposes of marine protected area establishment and those purposes related to enjoyment and understanding.

Because term of reference (a) focuses on the management of marine protected areas to date, VEAC will need to filter these outputs to identify only those management challenges that are likely to be ongoing. Climate change clearly has potential to increasingly affect the marine protected areas, and therefore pose ongoing management challenges beyond those likely to be identified under the term of reference (a). Climate change implications will therefore be considered separately by VEAC.

Identification of ongoing challenges to the smaller, terrestrial sections within the protected areas will similarly draw on the performance assessment for these areas described in section 3.3.3.

4.3.2 PROPOSED APPROACH TO ASSESSING ONGOING ENVIRONMENTAL THREATS

VEAC proposes to apply the same assessment approach to assessing threats and challenges to both the no-take and the multiple-use protected areas. The environmental threats to each protected area will initially be considered separately, given the likely relevance of location and ecological characteristics. Depending on emerging results, the protected areas may be consolidated up to IMCRA bioregions (see box 2.1), or grouped according to the key threats to which they are exposed, to assist interpretation.

As terrestrial environments within marine and coastal parks, such as the vegetated strips of coastline and small islands in the Nooramunga Marine and Coastal Park, have different environmental threats and management approaches, they will be assessed separately. However, interactions between terrestrial and neighbouring marine areas within these protected areas will be considered where relevant in interpretation.

Proposed approach to assessing environmental threats to marine areas

Understanding of the key threats to marine ecosystems and their sources

The general ways in which human activities may place pressure on and thereby threaten marine ecosystems are well known. These have been considered —and expressed in various ways— in numerous review and assessment processes, management planning processes, environmental indicator programs and State of Environment reports, within Australia and internationally over many years. Threats have been described and packaged in various ways to suit these different purposes.

The report *A National Approach to Addressing Marine Biodiversity Decline* is one recent, authoritative national overview of key threats to biodiversity.[34] It was compiled by a working group of representatives from Australian, State and Northern Territory governments and endorsed by the (then) Natural Resource Management Ministerial Council in 2008. Based on advice received from the various jurisdictions, this report categorised the highest priority, broad-scale threats to marine biodiversity in Australia as follows:

- climate change
- resource use
- land-based impacts
- marine biosecurity
- marine pollution.

Another recent, authoritative national assessment, the 2011 *State of the Environment report*,[35] identified climate variability and change, population growth and economic growth as key *drivers* of Australia's environment that can cause the following pressures to the marine environment at various places and times:

- pressures resulting from climate change, particularly
  - > gradually increasing water and air temperatures
  - > sea level rise and acidification
  - > *for nearshore areas*, increased storm frequency and associated run off of freshwater, nutrients and suspended sediments
- fishing
- oil and gas exploration and production
- shipping and associated infrastructure
- aquaculture facilities
- catchment run-off and land-based sources of pollution.

There is no currently agreed standardised list of pressures or threats, or approach for assessing their relative importance to marine areas internationally, across Australia or in Victoria. Clearly, the most useful categories and the best approach to use depend on the purpose and scale of the assessment.

The list of threats in the State of the Environment report covers a more detailed suite of threat sources than was used in the Biodiversity Decline report. Detailed discrimination among threat sources is clearly helpful for assessments intended to inform on-ground threat mitigation programs. Analysis of the individual stressors arising from each threat source—such as nutrients, sediments, heavy metals, extraction and so on—also allow for detailed assessment of the consequences of that threat to local marine ecosystems, and of practical mitigation options.

Approaches used to assess threats to marine ecosystems

A variety of environmental risk or threat assessment approaches have been developed to assess whether, and to what extent, sources of threats may affect ecosystems and related values in marine environments and beyond. More detailed approaches involve analysis of both exposure to the threat source and its ecosystem consequences or effects. These approaches range from qualitative approaches, informed by judgement, to quantitative approaches that may involve detailed mathematical modelling. In identifying the most appropriate approach in a given circumstance, important considerations include the intended use/s of the results, available information base, assessment resources and timeframe. Quantitative approaches do not necessarily provide the most useful outputs.

Various risk assessment approaches have been applied to Australia's and Victoria's marine environments for various purposes. These include:

- detailed quantitative modelling of nutrient threats to Port Phillip Bay in Victoria[36]
- analysis of environmental risks for major marine projects including the Port Phillip Bay Channel Deepening Project[37]
- Parks Victoria's qualitative threat assessments for Victoria's marine protected areas,[33] based on stakeholder opinion
- ecological risk assessments for the major Commonwealth-managed marine fisheries.[38]

Fisheries risk assessments in Australia have widely and successfully adopted a hierarchical approach, which allows resources for detailed assessment to be progressively focused towards the most important sources of threat. The purpose, underlying information base and scope of these fisheries risk assessments are broadly similar to those involved in assessing risks to marine ecosystems of a broader range of human activities.

Drawing on the fisheries approach, development of a hierarchical approach for assessing environmental threats to Victoria's marine ecosystems was initiated in 2011 by the Department of Sustainability and Environment (DSE), the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and scientists from the Department of Primary Industries (DPI) Fisheries Research Branch. The contexts for this approach were both Australia's

Box 4.2 Hierarchical risk assessment approach for Victoria's marine protected areas

VEAC, in partnership with DSE, commissioned Prof Greg Jenkins of DPI's Fisheries Research Branch to refine the preliminary hierarchical marine threat assessment approach that was developed by CSIRO, DPI Fisheries Research Branch and DSE. Refinement of the approach was informed by:

1. an expert review of the preliminary approach by Dr David Rissik of Griffith University and the National Climate Change Adaptation Research Facility
2. a wider review of comparable approaches
3. trial applications that have been conducted for some Victorian marine environmental assets.

The refined approach will be applied to Victoria's existing marine protected areas, as well as the marine environmental assets that have been identified by DSE in Victoria's surrounding, marine waters.[39] This will inform VEAC's assessment of environmental threats to the existing marine protected areas from both within and beyond their boundaries.

Figure 4.1 Sources of threats to marine ecosystems that are considered in the hierarchical marine threat assessment approach

national marine ecosystem-based marine management framework and Victoria's marine natural resource management approach. The preliminary hierarchical approach that was developed through this work draws on elements of a range of other relevant threat assessment approaches, including those applied to the Port Phillip Bay Channel Deepening Program and the Great Barrier Reef.[40] The approach is also compatible with the Vulnerability – Pressure – State – Impact – Risk and Response (VPSIRR) approach used to assess estuary condition in north east Australia.[41] VEAC engaged in development of this approach from the perspective of informing this investigation, and is currently working with DSE and DPI's Fisheries Research Branch to refine and apply this approach to inform its assessment of term of reference (b).

VEAC's proposed marine threat assessment approach

The hierarchical marine threat assessment approach referred to in box 4.2 rates the relative importance of stressors arising from a range of threat sources, or human activities, to each marine area qualitatively, based on expert scientific judgement. The list of threat sources that is considered is shown in figure 4.1. This list focuses on threat sources that are relevant to Victoria's marine waters, and was based on consideration of a range of existing relevant threat lists, including:

- the standardised hierarchical classification of commonly encountered environmental threats, which has been developed at an international level by the IUCN and the Conservation Measures Partnership (CMP)[42]
- the threats considered in Parks Victoria's existing qualitative threat assessments for Victoria's marine protected areas.[33]

The corresponding stressors for these threat sources include such issues as:

- nutrients
- sediments
- toxicants
- pathogens
- salinity
- acidity
- sea level rise
- ultraviolet light
- pest plants and animals
- physical disturbance
- altered wave climate
- extraction
- debris
- underwater noise.

The importance of these threats and stressors is assessed for three ecological attributes related to biodiversity and ecological processes:

- species and populations
- communities/habitat
- ecosystem function.

The approach used to assess the relative importance of these threats and stressors to each attribute involves two hierarchical components. The first component involves a relatively rapid screening focussed on the consequences of each of the threats and stressors to the above ecological attributes. Depending on the outputs of the first component, the assessment may then proceed to a second component that also takes into account the likelihood that these attributes will be affected by the threats and stressors in question.

Considering interactions among threats

Cumulative impacts are widely acknowledged to be potentially important to marine ecosystems but very difficult to predict, largely due to the level of available scientific understanding about the relevant ecological interactions. VEAC does not, however, plan to overlook consideration of cumulative threats, and will factor this into its assessment as far as feasible, drawing as appropriate on the advice of the Scientific Advisory Committee (see section 1.7.4).

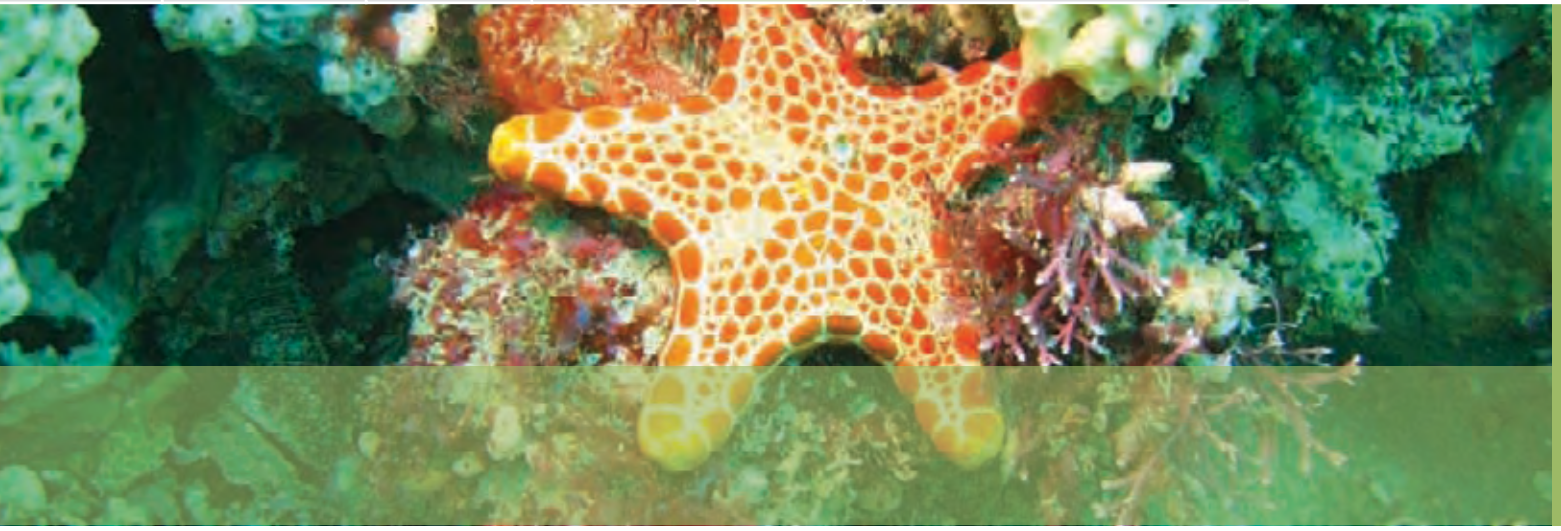
Proposed approach to assessing environmental threats to terrestrial areas

While coastal land is a relatively small component of Victoria's existing marine protected areas, it includes significant environmental values and shares common establishment purposes with the neighbouring marine components of the relevant parks and reserves. Box 3.6 in section 3.3.3 describes VEAC's proposed use of NaturePrint,[43] along with other relevant information sources to help understand the key ecological values of these areas. Terrestrial ecosystems are clearly vulnerable to different threats than are ecosystems below the high water mark. VEAC therefore proposes to separately assess the environmental threats to these areas, using established and appropriate terrestrial threat assessment approach/es. There are ecological inter-relationships between these terrestrial and marine areas, and these will be considered qualitatively by VEAC in compiling its consolidated assessment against term of reference (b).

4.3.3 PROPOSED APPROACH TO ASSESSING ONGOING THREATS AND CHALLENGES TO ENJOYMENT AND UNDERSTANDING

Victoria's existing marine protected areas were established to provide for recreation and education associated with the enjoyment and understanding of natural environments where this is consistent with conservation. VEAC's assessment of ongoing threats and challenges to enjoyment and understanding will draw on the outputs of its assessment of the performance of marine protected areas with respect to these purposes, as described in section 3.3.3. In the performance assessment, VEAC proposes to look at attributes in three categories relevant to the purposes of enjoyment and understanding: visitation, community awareness and scientific research.

Analysis of the outputs of the performance assessment will uncover the key drivers behind the outcomes achieved. Some drivers of performance can be influenced through management interventions, such as providing information about a marine protected area. Others may be harder to influence; for example, economic downturns may reduce tourist visits to marine protected areas. If the driver impacts negatively on the outcome it will be considered a threat or challenge to achievement of the outcome. Information gained through the performance assessment will assist in understanding any ongoing threats or challenges to managing marine protected areas for the purposes of enjoyment and understanding of natural environments, and identify the extent to which these can be managed.

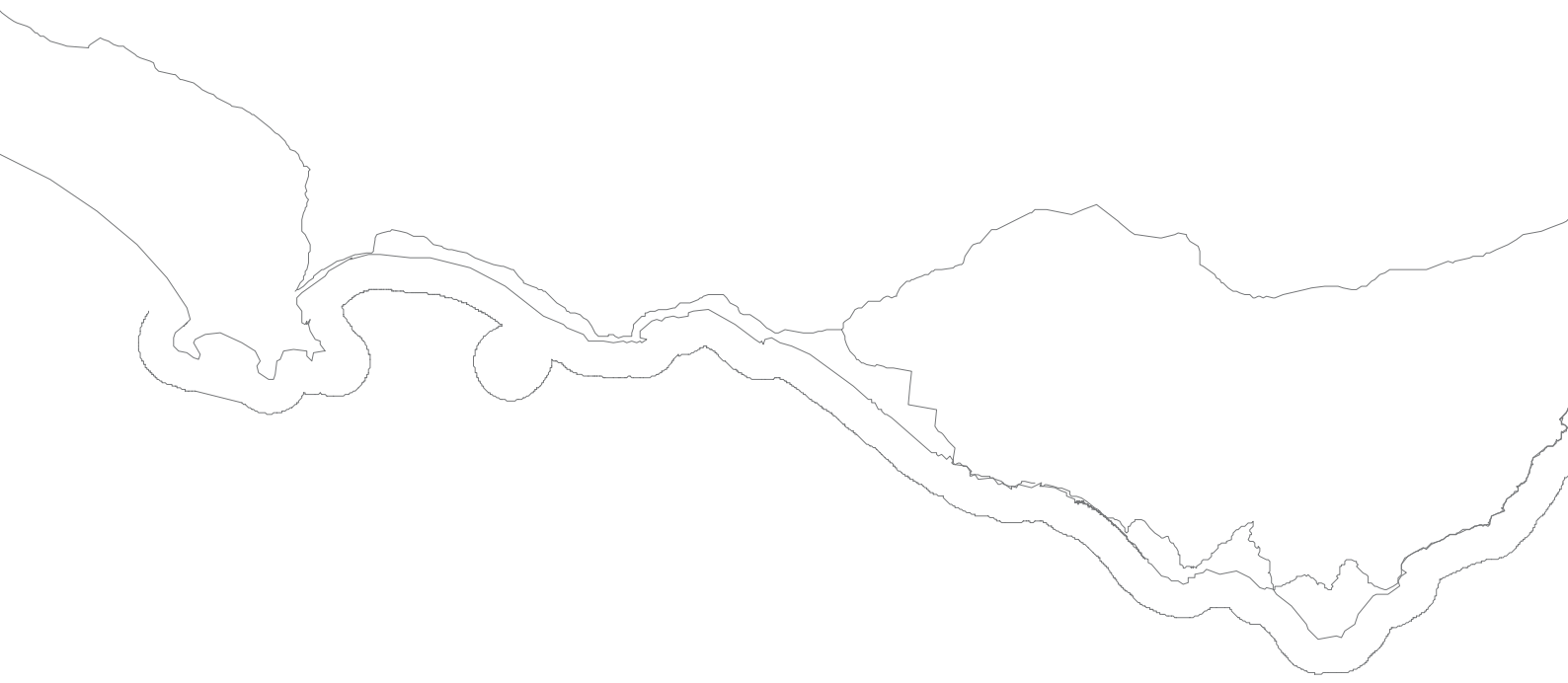


COMMENTS INVITED

VEAC would appreciate your feedback on the proposed approach to assessing ongoing *threats and challenges* to the effective management of Victoria's existing marine protected areas, particularly in relation to the biodiversity and ecological outcomes (term of reference (b) for the investigation).

What are your thoughts on the proposed approach to assessing threats and challenges to the marine protected areas outlined in this chapter?

Can you identify information that you think is important for VEAC to be aware of when undertaking the assessment of ongoing threats and challenges to the marine protected areas?



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Victoria's marine protected areas

5. Descriptions of Victoria's marine protected areas

This section of the discussion paper provides a summary of background information for each of Victoria's existing marine protected areas, highlighting key values. The summaries focus mainly on the natural values of marine protected areas but also highlight some of the ways in which people enjoy and appreciate the environment in each area. This focus aligns with the core purposes of establishment of Victoria's marine protected areas described in sections 2.2.1 and 2.3.1.

NATURAL VALUES

The descriptions provided here are based on the most current and reliable available information about natural values of marine protected areas. They are in some cases limited by the scope and availability of data. It is common for some areas to be better studied then others, such as areas that are easily accessible or contain interesting features. Some attributes and species are also better understood than others. For example, compared to other marine and coastal fauna, birds are relatively easily observed and are well studied by both professional and citizen scientists. Other marine species can require highly specialised taxonomic skills and appropriate equipment for sampling and identification, and research may be costly to undertake.

Parks Victoria has recently updated natural values reports which document current scientific knowledge for Victoria's marine national parks and sanctuaries. Numerous research and monitoring programs have improved knowledge of marine national parks and sanctuaries since their establishment in 2002. The natural values reports fully document these studies, and these and other relevant information, such as management plans, are available from Parks Victoria's website at www.parkweb.vic.gov.au.

Information about sites of geological and geomorphological significance provided in this section is based on information published in the late 1980s and early 1990s. VEAC has commissioned a review of these assessments which will also provide advice to VEAC on conservation needs and threats and challenges to effective management of these sites (see box 3.4).

ENJOYMENT AND APPRECIATION OF NATURAL ENVIRONMENTS

The descriptions of enjoyment and appreciation are informed largely by information presented in existing management plans. These plans document the recreational and heritage values of marine protected areas, and outline strategies aimed at enabling enjoyment and appreciation of the natural environment while minimising negative impacts on the values and other users. Management plans for most marine protected areas are available from Parks Victoria's website at www.parkweb.vic.gov.au.

ABORIGINAL CULTURAL VALUES

Aboriginal cultural heritage and interests are important values of marine protected areas. The rich complexities of Aboriginal peoples' connection to country mean that these values cannot be simply categorised. Traditional Owners do not distinguish between land and sea country, and see their traditional rights and responsibilities extending across terrestrial, coastal and marine environments.[1] Aboriginal people hold strong cultural associations and concern for the management of country and its resources.[1,44] With these considerations in mind, Aboriginal cultural values are highlighted here in a consolidated way, rather than described individually for each marine protected area.

Prior to European settlement, coastal areas were some of the most populated regions of south-east Australia.[1] Many Traditional Owner groups associate with the Victorian coast; including the groups described in this section. The significance of the coast to Aboriginal people, and the value of coastal resources to them, is reflected in the presence of sacred sites and artefacts on Victoria's present coastline.

Recognition of Aboriginal knowledge and aspirations for country is increasingly being integrated into protected area and natural resource management. To support this investigation, VEAC has commissioned advice on pathways and approaches for best practice recognition and engagement of Aboriginal Traditional Owners and other Aboriginal people in the use and management of Victoria's marine protected areas (see box 3.1).

Traditional owners of Victoria's coast formally recognised as Registered Aboriginal Parties or through Native Title settlements are described in Table 5.1 below.

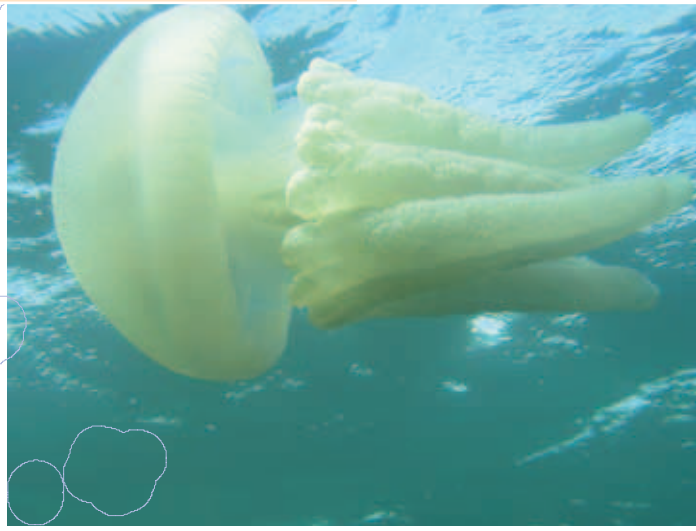
Other Traditional Owners in coastal areas of Victoria include:

- Eastern Maar Aboriginal Corporation
- Kuuyung Maar Aboriginal Corporation
- Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc.
- Bunurong / Boon Wurrung People
- Nindi-Ngujarn Ngarigo Monero Aboriginal Corporation
- Bidwell-Maap Nation Aboriginal Corporation

Table 5.1 Traditional Owners of Victoria's coast

Group	Coastal country
Gunditjmara People / Gunditj Mirring Traditional Owners Aboriginal Corporation	East of the South Australian border to south-west of Tyrendarra East (Federal Court of Australia 30 March 2007[§]) South Australian border to south of Tyrendarra, at the boundary of Moyne and Glenelg shires (Victorian Aboriginal Heritage Council 28 May 2007, 19 July 2007 and 23 April 2009)
Gunditjmara and Eastern Maar Peoples	South-west of Tyranderra East to south of Yambuk; Lady Julia Percy Island (Federal Court of Australia 27 July 2011)
Wathaurung Aboriginal Corporation	Painkalac Creek, between Aireys Inlet and Fairhaven, to the Werribee River (Victorian Aboriginal Heritage Council 21 May 2009)
Gunai/Kurnai People / Gunaikurnai Land and Waters Aboriginal Corporation	East of Port Franklin and Corner Inlet Marine and Coastal Park, to south of Marlo (Federal Court of Australia 22 October 2010; Victorian Aboriginal Heritage Council 23 May 2008, 18 September 2008, 2 December 2010, 10 March 2011)

[§]Dates listed in this table refer to the date of decision by the relevant body.



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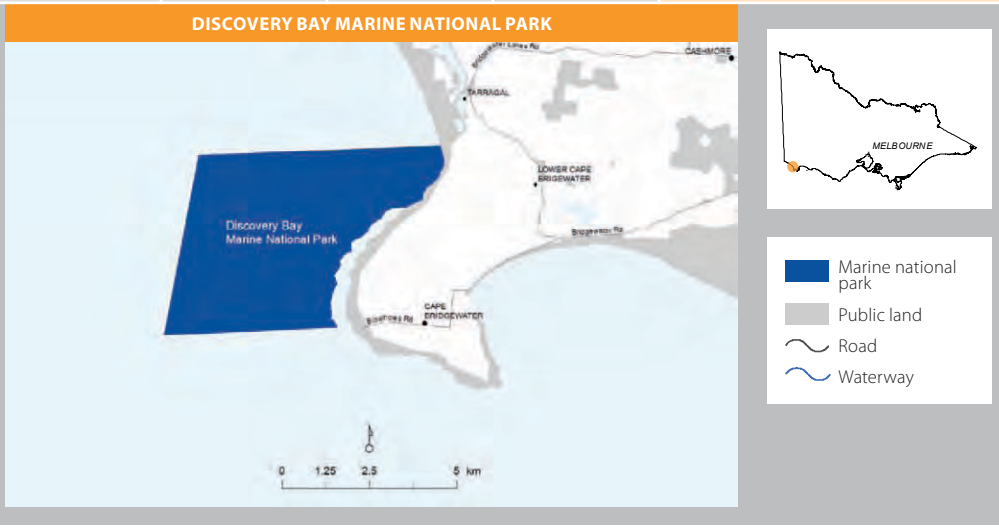


Discovery Bay Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Discovery Bay Marine National Park, the Environment Conservation Council[1] noted the following values:

- the area is part of the largest coastal basalt formation in western Victoria and amongst the highest wave energy environments in the state
- complex rocky habitats include kelp covered basalt reefs and calcarenite reefs with large growths of sessile invertebrates
- high diversity of intertidal and shallow subtidal invertebrates including rock lobster and abalone
- blue whales and great white sharks visit the area regularly.

Note that the boundary of the park established in legislation is not the same as the recommended boundary.

Natural values

- The marine national park has complex geological formations with basalt and calcarenite intertidal and subtidal reefs, as well as subtidal soft sediment. Deep calcarenite reefs support thick growths of sessile invertebrates while shallower basalt reefs support large kelps.[1]
- The park forms part of a stretch of coastline known as the Bonney Coast. Spanning from Robe in South Australia to Cape Otway in Victoria, this area is highly productive and species-rich due to the Bonney Upwelling, a seasonal upwelling that brings cold, nutrient rich water to the surface. The Bonney Coast is one of only 12 areas worldwide where relatively high numbers of Blue Whales are known to aggregate.[46]

Location and extent

- 2,770 hectares
- The marine national park is the westernmost marine protected area in Victoria, extending from Blacks Beach to Cape Duquesne and seaward to the limit of Victorian waters three nautical miles (approximately 5.5 kilometres) offshore. Between Whites Beach and Cape Duquesne, the area to 500 metres seaward of the high water mark has been excluded from the park. Between Whites and Blacks beaches the boundary is at high water mark.
- There is a small settlement at Cape Bridgewater; Portland (population 9,601[+]) is the nearest major town, approximately 20 kilometres away.
- The catchment falls within the Portland Coast Basin in the Glenelg Hopkins Catchment Management Authority region. Several freshwater springs flow from cliff faces into the marine national park.[45]

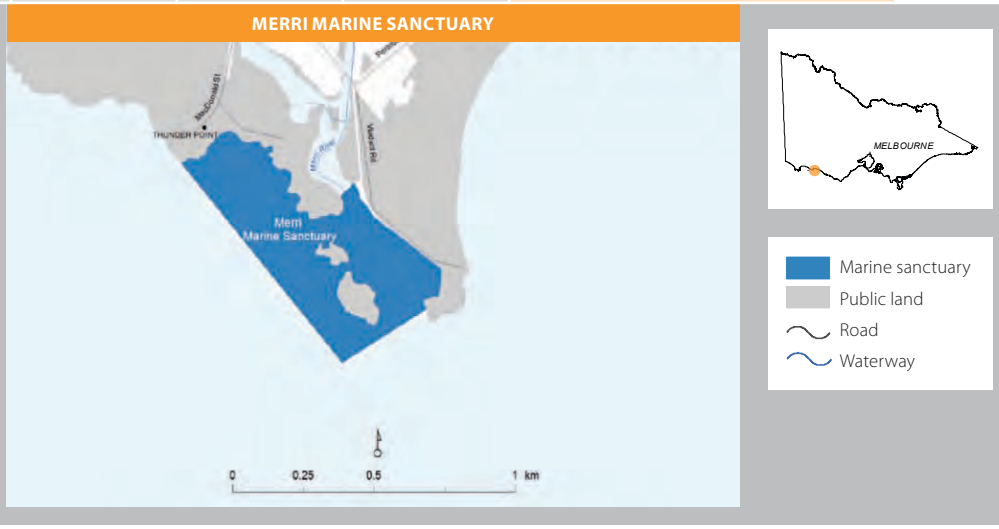
- Fifteen bird species including the endangered wandering albatross, two species of whales and three species of seals found in or near the marine national park are listed under Victorian and/or Commonwealth conservation legislation and policies.[47]
- The park is also considered to provide habitat for southern bluefin tuna, grey nurse shark and great white shark; all of which are listed as threatened species in Victoria.[47]

Enjoyment and appreciation

- Opportunities for recreation in the Discovery Bay Marine National Park are limited by often rough weather and the inaccessibility of the cliffed coastline.[45] Intertidal areas of the park can be accessed from Whites Beach and Blacks Beach and shore-based viewing is possible from The Blowholes and the Great South West Walk.[45]

Further information on Discovery Bay Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

[+] Population statistics presented in this document are from the 2011 Census sourced from the Australian Bureau of Statistics website at www.abs.gov.au.



Merri Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Merri Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- ecological significance and value for public appreciation and education
- a mix of reef and sand at the mouth of the Merri River supports diverse habitats and marine life
- rocky overhangs and canyons between Merri and Middle Islands support a range of fish species
- dolphins frequently visit the sheltered area and Merri and Middle Islands host penguin colonies.

Natural values

- Merri Marine Sanctuary is predominantly rocky reef with soft sediment in the east of the sanctuary at the mouth of the Merri River.[48] The seabed at the mouth of the Merri River supports a variety of marine habitats and species.[1]
- Fifty-one conservation-listed* bird species have been recorded in or near the marine sanctuary.[47] Of these, six species are considered endangered: the Australasian bittern, fairy tern, gull-billed tern, little egret, wandering albatross and southern giant petrel.[47] Marine mammals, particularly pinnipeds (seals and sea lions), have also been recorded in the park and whales have been recorded offshore.[47]
- Little penguins breed on Merri and Middle islands, as do little pied cormorants and short-tailed shearwaters, and the islands provide roosting areas for transient seabirds.[49] Trained Maremma dogs have guarded the breeding colonies from foxes since 2006.[47] The islands provide complementary habitat for species that utilise both marine and terrestrial environments.
- Pot-bellied seahorses, which are protected in Victoria (as are all seahorses, pipefish and seadragons) and listed as threatened by the Commonwealth government, are often seen on subtidal reefs.[49]

* Conservation-listed species refers to those species listed under Victorian and/or Commonwealth species protection legislation, or protected under international agreements.

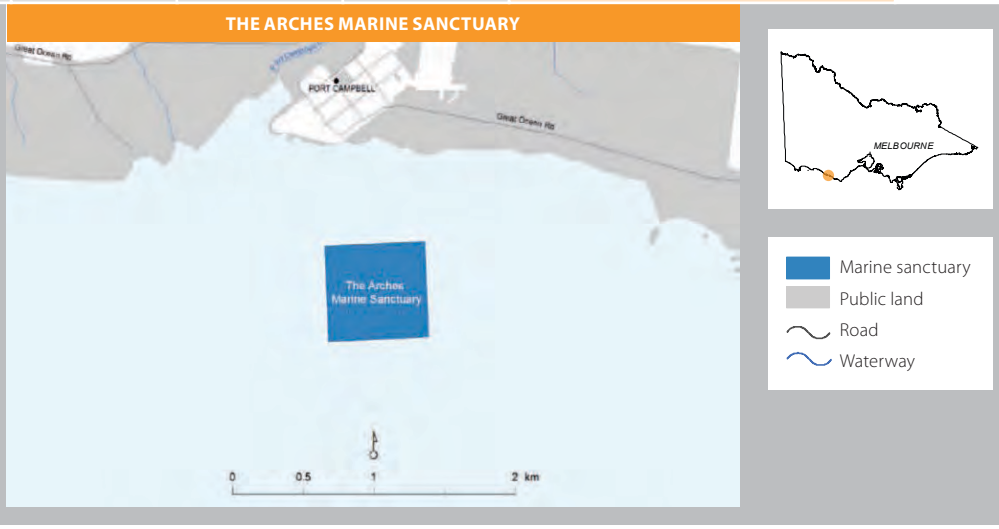
Enjoyment and appreciation

- As part of Warrnambool's coastal environs, the marine sanctuary provides accessible opportunities for visitors and the local community to view marine animals such as penguins, seals and birds.[49] Activities enjoyed in the marine sanctuary include beach recreation at Stingray Bay, rock pool exploration at Pickering Point, snorkelling, SCUBA diving, and viewing from walking tracks and lookouts.[49]
- Community-based monitoring takes place in the sanctuary including subtidal reef monitoring undertaken by Deakin University Underwater Club as part of the Sea Search program.[50] Groups such as MAD (making a difference) for the Merri and the Warrnambool Coastcare Landcare Group undertake works to improve the condition of the Merri River environment.
- Local schools, Deakin University and South West TAFE often use the intertidal area at Pickering Point for education.[49]

Further information on Merri Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 25 hectares
- Merri Marine Sanctuary is located at the mouth of the Merri River in Warrnambool (population 28,413), extending from Thunder Point to the Warrnambool Breakwater, and encompassing (but not including) Merri and Middle Islands.
- The Merri River estuary discharges into the marine sanctuary. The catchment falls within the Lower Hopkins Basin in the Glenelg Hopkins Catchment Management Authority region, and is predominantly agricultural with urbanisation in the lower reaches.



The Arches Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of The Arches Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- ecological, scenic and tourism values
- some of Victoria's most spectacular limestone formations with rocky arches and canyons in 19 to 25 metres of water
- the tops of arches are covered in kelp and red seaweeds and the undersides are covered with invertebrates typical of deeper Bass Strait waters
- giant kelp forest habitats.

Location and extent

- 45 hectares
- The marine sanctuary lies 600 metres offshore of Port Campbell (population 618).

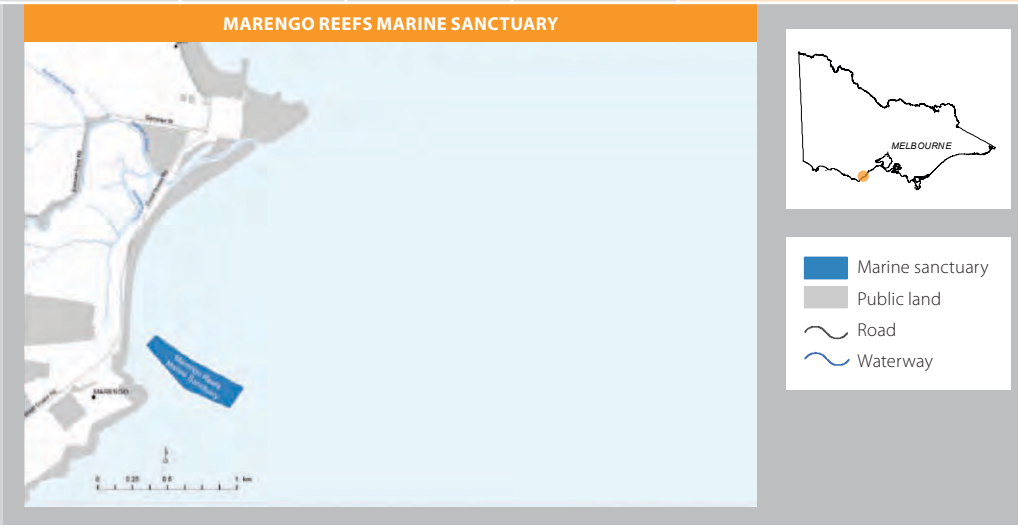
Natural values

- The marine sanctuary is predominantly deep limestone reef[47] at 19 to 25 metres depth which forms canyons, arches, tunnels, caverns, ledges and vertical sink holes.[51] The tops of reefs are covered mainly by brown kelp, and encrusting sessile invertebrates are found on or under ledges.[52]
- The waters of the marine sanctuary are likely to be habitat for the threatened southern bluefin tuna, grey nurse shark and great white shark.[47] The marine sanctuary is also considered to provide feeding habitat for five conservation-listed bird species and four marine mammal species.[47]

Enjoyment and appreciation

- Relatively few people visit the marine sanctuary because of usually rough sea conditions and inaccessibility from the shore.[51] Access to The Arches Marine Sanctuary is by boat only; it is a short trip from Port Campbell.[51]
- The underwater scenery of the marine sanctuary have made it a locally well known SCUBA diving site.[51]

Further information on The Arches Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.



Marengo Reefs Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Marengo Reefs Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- public education and underwater recreation
- wide variety of microhabitats in a small area
- sheltered side of reef provides protected conditions unusual for the high energy coastline.

Natural values

- Intertidal and subtidal sandstone reefs provide a range of microhabitats that support high species diversity.
- There is a significant Australian fur seal haul-out on the outer reef.
- Thirteen bird species listed as being of conservation significance have been recorded in or near the Marengo Reefs Marine Sanctuary.[53]
- The flora and fauna of the subtidal reef habitat in the marine sanctuary is monitored by Parks Victoria.[54]

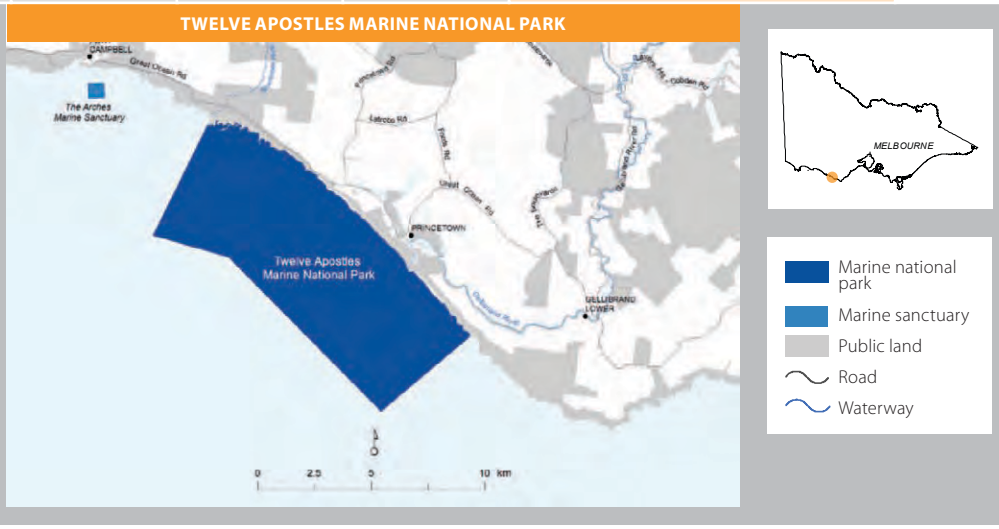
Enjoyment and appreciation

- Most visitors access the marine sanctuary by boat or kayak, with access also feasible by swimming or by walking from shore at very low tides.[55] Visitor access is only allowed on the inner reef as the outer reef is an Australian fur seal haul-out site.
- Snorkelling and scuba diving are popular activities in the marine sanctuary, with the inner reef providing more sheltered conditions for these activities.
- Shipwrecks visible in the sanctuary include the *Grange* and the *Wollomai*.

Further information on Marengo Reefs Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 12 hectares (Victoria's smallest marine protected area)
- The sanctuary includes the area of the inner and outer reefs, located about 100 to 200 metres offshore.
- Marengo (population 218) is the closest town to the marine sanctuary, with Apollo Bay (population 1,095) located nearby.
- The intermittently open Barham River estuary is the closest freshwater discharge to the sanctuary. The catchment lies within the Otway Coast Basin in the Corangamite Catchment Management Authority region.



Twelve Apostles Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Twelve Apostles Marine National Park, the Environment Conservation Council[1] noted the following values:

- spectacular underwater scenery including underwater canyons and arches—a continuation of the famous coastal limestone cliffs of the Port Campbell area
- rock types within the park, including limestone, calcarenite, mudstone and sandstone, create complex rocky habitats including platforms, small rounded boulders and reef with steeply sloping ridges
- part of an area with the highest diversity of intertidal and shallow subtidal invertebrates on limestone in Victoria
- shorelines, rock stacks and islands provide breeding habitat for seabirds.

Note that the boundary of the park established in legislation is not the same as the recommended boundary.

Natural values

- The coastline adjoining the marine national park is largely formed of tall, progressively eroding limestone cliffs which have shaped features such as arches and rock stacks.[56] Some of these limestone formations have been acknowledged as significant geological and geomorphological features, including the Twelve Apostles and Pebble Point (both nationally significant), Loch Ard Gorge (state significance) and Gibsons Steps (regionally significant).[28]
- The shorelines, rock stacks and islands provide breeding habitat for seabirds;[1] for example Mutton Bird Island hosts a breeding colony of short-tailed shearwaters.[51] The intertidal reefs fringing rocky outcrops are also used as haul out areas for fur seals.[47]
- Conservation-listed species found in or near Twelve Apostles Marine National Park include 11 bird species and four marine mammal species.[47] The waters of the marine national parks are also considered suitable habitat for southern bluefin tuna, grey nurse shark and great white shark; all of which are listed as threatened species.[47]
- The area west of the Twelve Apostles forms part of a significant breeding colony of little penguins.[47]
- The flora and fauna of reef habitats in the marine national park have been surveyed by video attached to a remotely operated vehicle.[52]

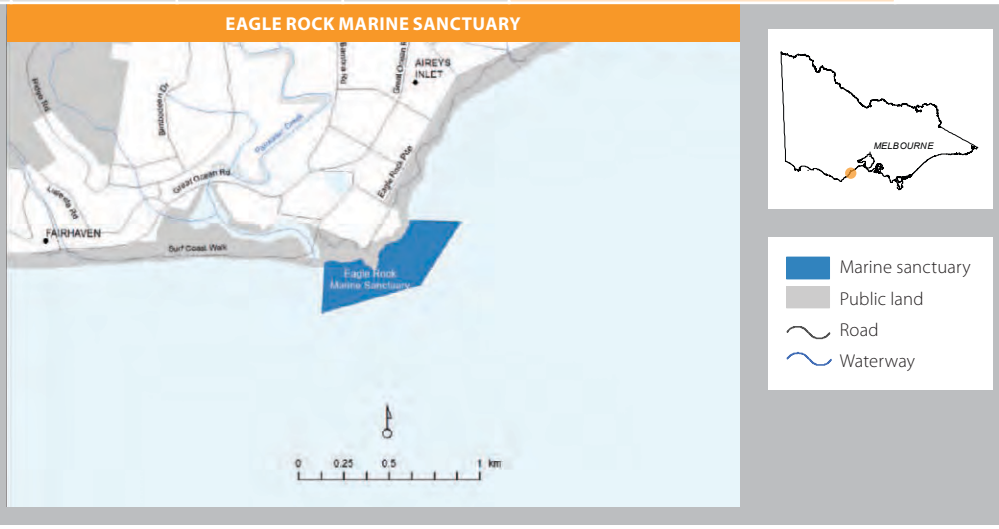
Enjoyment and appreciation

- The spectacular rock formations within and around the area of Twelves Apostles Marine National Park form part of a nationally significant landscape[57] which attracts visitors from all over the world.[51] Views of the park can be enjoyed from lookouts, scenic flights and boat tours.[51]
- While many experience the scenic qualities of the marine national park from land, relatively few physically visit due to usually rough sea conditions and inaccessibility of the coastline.[51] Visitors can access intertidal areas of the marine national park at Loch Ard Gorge, Bowkers Beach and beaches near Gibsons Steps and Rivernook.[51]
- The significance of the intertidal areas and rock stacks within the Twelve Apostles Marine National Park are recognised on the National Heritage List.
- The wreck of the *Loch Ard* can be seen in the park. The wreck of this iron ship is listed on both the Register of the National Estate and the Victorian Heritage Register.

Further information on Twelve Apostles Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 7,500 hectares
- The marine national park extends along 17 kilometres of coastline from Broken Head to Pebble Point and seaward to the limit of Victorian waters three nautical miles (approximately 5.5 kilometres) offshore. Two areas (Gibson Steps to Clifton Beach and Point Ronald to Rivernook) have been excluded from the park for 100 metres seaward of the high water mark.
- The small settlement of Princetown lies approximately one kilometre inland of the marine national park and Port Campbell (population 618) is approximately eight kilometres to the west.
- The Gellibrand River estuary discharges into the marine national park near Princetown and the Sherbrook River estuary discharges just outside the western boundary. The catchment falls within the Otway Coast Basin in the Corangamite Catchment Management Authority region, and contains a mixture of agricultural land and land managed for conservation.



Eagle Rock Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Eagle Rock Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- opportunities to observe marine life
- variable geology (sandstone and basalt) provides a range of habitats
- high diversity of invertebrates on rock platforms.

Location and extent

- 17 hectares
- From the high water mark to around 300 metres offshore, running from Sentinel Rock to Castle Rock at the base of Split Point.
- The marine sanctuary sits offshore of Aireys Inlet (population 713) and is close to Fairhaven and Moggs Creek (combined population 354).
- Painkalac Creek estuary lies just west of the marine sanctuary. The catchment falls within the Otway Coast Basin in the Corangamite Catchment Management Authority region.

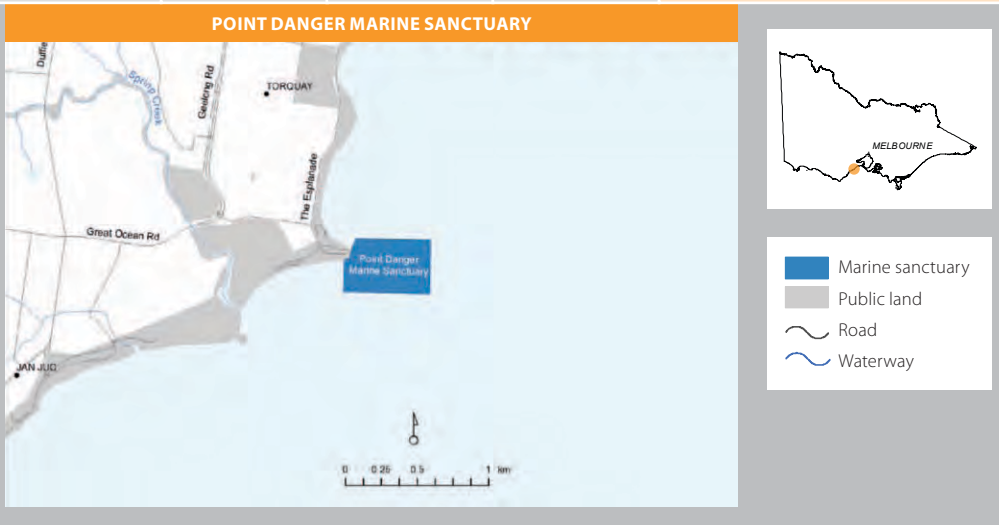
Natural values

- The marine sanctuary has diverse habitats with intertidal and subtidal basalt and sandstone reefs forming rock platforms, rock pools, crevices and boulder fields.[1]
- Seven bird species listed as being of conservation significance have been recorded in or near the marine sanctuary.[53]
- Eagle Rock is part of a site of state geological and geomorphological significance that includes the cliffs at Split Point.
- Australian fur seals use Table Rock and Eagle Rock as haul-out areas on occasion.[53]
- A program is in place in the Eagle Rock Marine Sanctuary to monitor the flora and fauna of the subtidal reef habitat.[54]

Enjoyment and appreciation

- Local children learn about the ecological values of Eagle Rock Marine Sanctuary through the 'i sea, i care' ambassador program. Community awareness and involvement in the marine sanctuary is also reflected in groups such as Friends of Eagle Rock Marine Sanctuary.
- Overlooking Eagle Rock Marine Sanctuary is Split Point Lighthouse which offers access to a visitor carpark and a view of the marine sanctuary.
- Recreational activities enjoyed in the marine sanctuary include exploring rock platforms and rockpools, snorkelling and diving.

Further information on Eagle Rock Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.



Point Danger Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Point Danger Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- ecological values of the intertidal area, particularly the diversity of opisthobranch molluscs (sea slugs), some of which are yet to be scientifically described
- visited by large numbers of people, Point Danger is popular for sightseeing and shore walks.

Natural values

- Point Danger Marine Sanctuary is known for its particularly diverse assemblage of sea slugs (opisthobranchs) found on intertidal and subtidal reefs.[53]
- Eighteen species of shorebirds listed as being of conservation significance have been recorded within or near Point Danger Marine Sanctuary.[53]
- An extensive, relatively flat, intertidal and subtidal limestone platform occupies the majority of the marine sanctuary area.
- Flora and fauna of intertidal reefs are monitored in the marine sanctuary.[10]

Enjoyment and appreciation

- Use of personal watercraft, including kite surfing and sailboarding, is popular at Point Danger Marine Sanctuary, which has a designated 10 hectare sail-powered only area.
- Visitors to the marine sanctuary also explore the intertidal rock platform, snorkel, and surf.[58]
- Heritage-listed remains from the wreck of the wooden *Joseph H Scammell* can be seen in the marine sanctuary.

Further information on Point Danger Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 25 hectares
- Extends from high water mark to approximately 400 to 600 metres offshore around a limestone rock platform.
- The marine sanctuary is located adjacent to Torquay (population 10,142) and near Jan Juc (population 3,521).
- Spring Creek discharges west of the marine sanctuary. The catchment falls within the Otway Coast Basin in the Corangamite Catchment Management Authority region.

Point Addis Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Point Addis Marine National Park, the Environment Conservation Council[1] noted the following values:

- marine habitats include sandy beaches, subtidal soft sediments and variable forms of intertidal and subtidal rocky reefs including Ingoldsby reef, known for diverse marine life and presence of the leafy sea-dragon
- Point Addis limestone of state significance
- Bells Beach is a world-famous surfing destination.

Natural values

- The high energy coastline of Point Addis Marine National Park is formed of sandy beaches interspersed with rock platforms below high sandstone cliffs.[53] Patchy seagrass can be found in areas of shallow sandy seafloors and rhodolith beds (red algae that resemble rocks) cover several square kilometres in deeper areas.[53]
- Outcrops of Point Addis limestone within the marine national park are geological features of state significance.
- The intertidal and subtidal Ingoldsby Reef, in the western section of the park approximately two kilometres offshore, contains at least 114 species of seaweed,[53] a wide range of sponges and Victoria's marine faunal emblem: the weedy seadragon.[59] The assemblage of echinoderms (species such as sea stars and sea urchins) found on reefs in the marine national park is relatively diverse.[54]
- Twenty-six shorebird species and four marine mammal species listed as being of conservation significance are found in or near the marine national park.[53]
- Prior to establishment of the marine national park, flora and fauna on intertidal reef habitats was surveyed[60] and regular sampling of this habitat,[53] as well as subtidal reef habitat,[12] continues in the park.

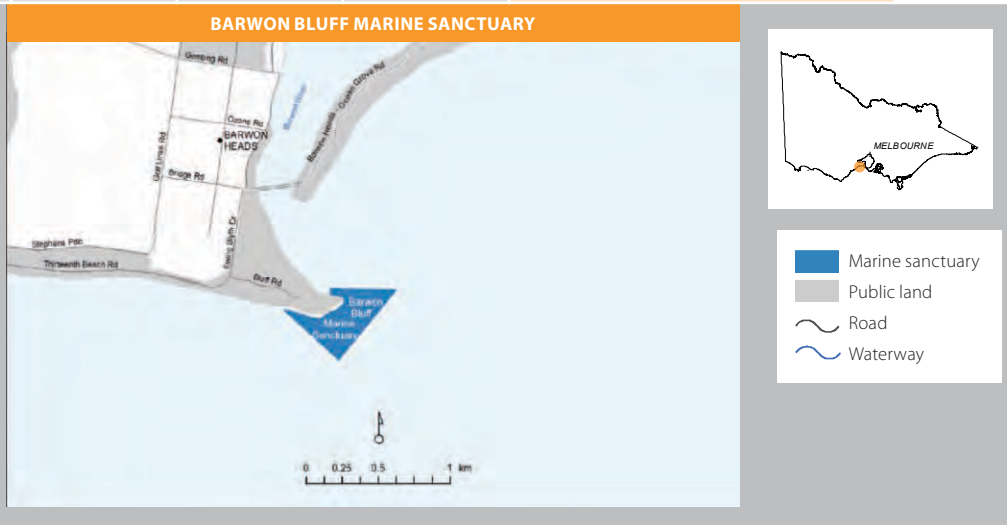
Enjoyment and appreciation

- Recreational activities enjoyed in the marine national park include surfing, walking along the beach (which forms a section of the Surf Coast Walk), exploring intertidal rock platforms, boating, SCUBA diving and snorkelling.
- Point Addis Marine National Park includes the iconic Bells Beach, which was identified as a significant part of the National Heritage listing of the Great Ocean Road in 2011. Bells Beach is famous for its surf break, annual Easter surfing competition (the longest continuously running surfing competition in the world) and the multi-million dollar surf industry it supports. Being close to the Great Ocean Road, and a destination in itself, Bells Beach is an increasingly popular tourist destination for both tour groups and independent travellers.[61]
- Heritage sites within the marine national park include Bells Beach and the wreck of the *Inverlochy* at Ingoldsby Reef.
- Community groups with an interest in the area include Friends of Point Addis Marine National Park and SANE (Surfers Appreciating the Natural Environment).
- Addiscot Beach is one of four legal 'clothing optional' beaches in Victoria. Part of the prescribed area falls within the boundaries of the marine national park.

Further information on Point Addis Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 4,600 hectares
- The marine national park extends from the high water mark to the limit of state territorial waters three nautical miles (approximately 5.5 kilometres) offshore, from Bells Beach to the eastern outskirts of Anglesea.
- Anglesea (population 2,454) lies to the west of the marine national park and Jan Juc (population 3,521) and Torquay (population 10,142) to the east.
- Falling within the Otway Coast Basin in the Corangamite Catchment Management Authority region, the predominantly agricultural catchment is experiencing increasing urbanisation. Eight short, irregularly flowing, creeks discharge to the park;[53] Anglesea sewage outfall lies beyond the western boundary of the marine national park.



Barwon Bluff Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Barwon Bluff Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- extensive use of the area for marine education activities
- sandstone and basalt reef
- the area is popular for swimming, snorkelling and exploring rock pools.

Natural values

- Barwon Bluff Marine Sanctuary is a complex, regionally significant, geological formation with a sandy bay sheltered between a basalt and sandstone reefs.[62]
- Sandy beaches provide habitat for shorebirds including the endangered hooded plover.[53] Twenty-seven species of shorebirds listed as being of conservation significance have been recorded within or near Barwon Bluff Marine Sanctuary.[53] Proximity to the Ramsar-listed Lake Connewarre and Reedy Lake is likely to contribute to the presence of listed bird species in the area.
- The flora and fauna of intertidal reef habitats in the marine sanctuary have been monitored by Parks Victoria since 2003.[10]
- Reef fish are counted by volunteers in the annual Great Victorian Fish Count coordinated by Reef Watch.[63]

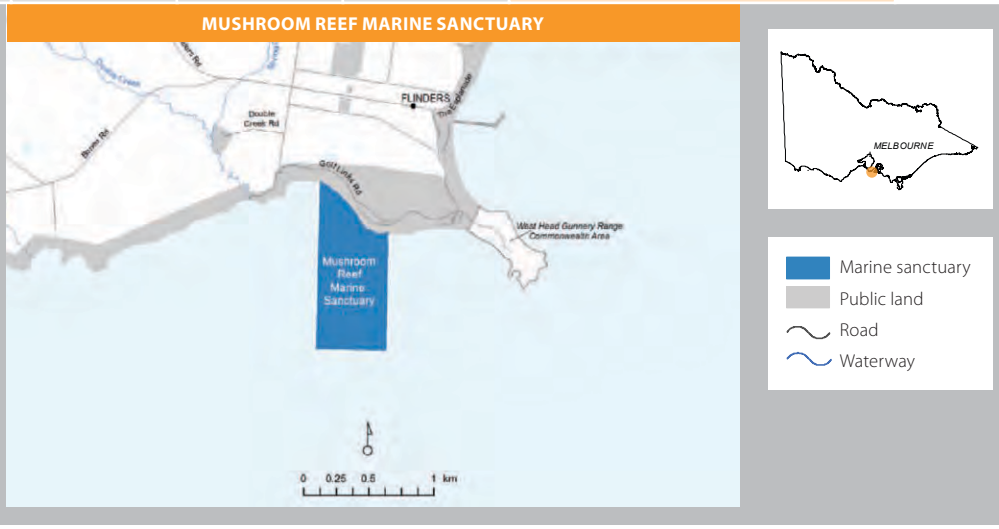
Enjoyment and appreciation

- The sanctuary has a history of use for marine education[62] with education providers including the Marine Discovery Centre, Parks Victoria and Friends of Barwon Bluff. Organised educational activities for students and other groups focus on the natural history and features of the area, as well as techniques for surveying intertidal reefs.
- The shore around Barwon Bluff has long been popular for recreation, with activities enjoyed in the marine sanctuary including walking on the beach at the base of the bluff, exploring rock pools and bird watching.[62]
- Barwon Bluff Marine Sanctuary is particularly suitable for snorkelling and diving, due to interesting underwater scenery and easy access from shore.[62]
- Artefacts from the historic shipwreck, the *Earl of Charlemont,* can be seen in the marine sanctuary.[64]
- The Friends of the Bluff, a local community group, plays an active role in monitoring and documenting natural values in the marine sanctuary. Working with Parks Victoria and other partners, the Friends of the Bluff have produced *Life on the Edge: A Guide to the Animals and Plants of the Barwon Bluff Marine Sanctuary.*[65]
- Volunteers monitor the intertidal reef through the Sea Search program[66] and tally subtidal reef fish in the annual Great Victorian Fish Count.[63]
- The Barwon River, which discharges into the marine sanctuary, is also monitored by the local community. Through the EstuaryWatch program supported by Corangamite Catchment Management Authority, the mouth of the river is monitored using photographs and measurement of physical and chemical properties.[67]

Location and extent

- 17 hectares
- The marine sanctuary extends from the high water mark to approximately 400 metres offshore around the headland of Point Flinders.
- Barwon Heads (population 3,536) lies to the north of the marine sanctuary and Ocean Grove (population 12,555) to the north-east.
- The marine sanctuary is located at the mouth of the Barwon River. The catchment, which falls within the Barwon Basin in the Corangamite Catchment Management Authority region, is predominantly agricultural with some urban areas, including suburbs of Geelong.

Further information on Barwon Bluff Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au and at www.barwonbluff.com.au.



Mushroom Reef Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Mushroom Reef Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- ecological values, including complex intertidal basalt reef supporting (along with Honeysuckle Reef) the most diverse intertidal rocky reef communities in Victoria
- underwater recreation values and potential for marine education.

Location and extent

- 80 hectares
- Extends from the high water mark to one kilometre offshore.
- Flinders (population 860) is located just north of the marine sanctuary.
- Double Creek discharges west of the marine sanctuary. The area falls within the Westernport Catchment of Melbourne Water and the Port Phillip and Westernport Catchment Management Authority region.

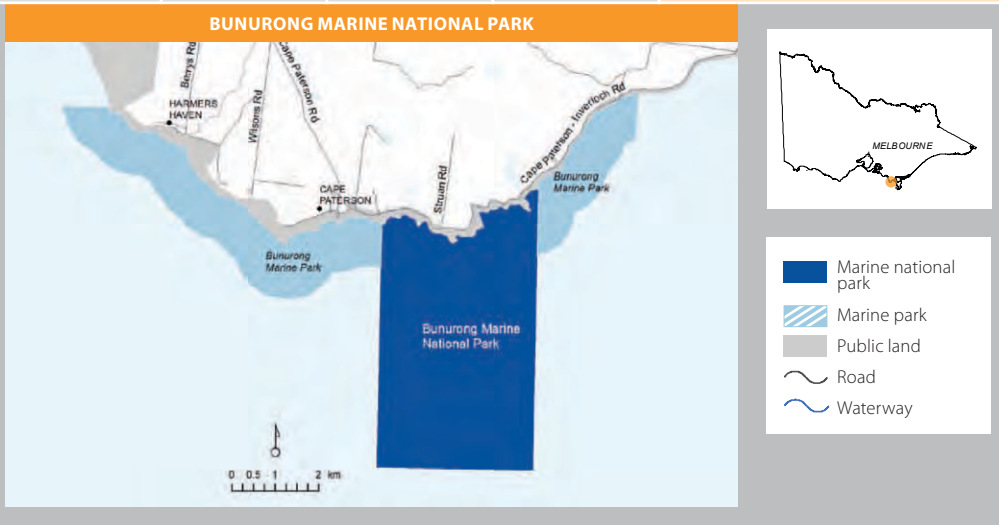
Natural values

- Mushroom Reef Marine Sanctuary has complex basalt reefs which support diverse microhabitats and species and is believed to be amongst the most diverse intertidal reef communities in Victoria.[1]
- The marine sanctuary was named after the tombolo form of the largest intertidal reef in the sanctuary. Waves refracting around a mushroom shaped head have shaped a stalk-like isthmus.[68]
- Fifteen sea or shore bird species listed as being of conservation interest can be found in or near the marine sanctuary, including the grey-tailed tattler listed as critically endangered in Victoria. One species of sea cucumber found in the marine sanctuary is listed under the *Flora and Fauna Guarantee Act 1988* as threatened.[53]
- The flora and fauna inhabiting the sanctuary's intertidal reef habitat are surveyed through Parks Victoria's intertidal reef monitoring program.[10]

Enjoyment and appreciation

- Recreational activities enjoyed in the marine sanctuary include walking, exploring rockpools, beach recreation, and shore-based snorkelling and diving.[68]
- Researchers and students visit the marine sanctuary to study the intertidal and subtidal environments.[68]

Further information on Mushroom Reef Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.



Bunurong Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Bunurong Marine National Park, the Environment Conservation Council[1] noted the following values:

- the pre-existing marine sanctuary zone is well known, accessible and popular with visitors enjoying beaches, rock formations, rockpools and intertidal platforms
- high species richness and diversity of marine flora
- high diversity of intertidal and shallow subtidal invertebrate fauna recorded in Victoria on sandstone; including a high proportion of the common invertebrates occurring along the Victorian coast
- Eagles Nest rock formation contains dinosaur fossils and provides breeding habitat for peregrine falcons and hooded plovers.

Natural values

- The Bunurong marine environment is unusual compared to most of Victoria's coast in that it is sheltered from the full force of the Southern Ocean by King Island and has an extensive and relatively shallow intertidal and subtidal rock platform.[1, 70]
- The Eagles Nest rock formation is a site of national geological and geomorphological significance.
- The algal communities of reefs in the Bunurong region are more species-rich than other inshore reefs in Victoria, which are often dominated by large kelp species.[70]
- Listed species of conservation significance known to occur in or near the park include one species of sea cucumber, 31 species of shorebirds or sea birds and four species of marine mammals. Included in this count are the endangered hooded plover and southern right whale.[53]
- Flora and fauna of intertidal and subtidal reef habitats of the Bunurong coast have been monitored since 1999.[10, 53, 69]

Location and extent

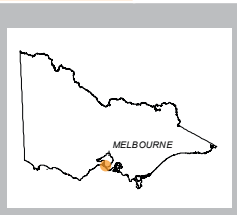
- 2,100 hectares
- The marine national park extends from the high water mark seaward to the limit of Victorian waters three nautical miles (approximately 5.5 kilometres) offshore, along about six kilometres of coastline adjoining the Bunurong Coastal Reserve between Cape Paterson and Inverloch. The marine national park is bordered to the east and west by Bunurong Marine Park which extends one kilometre offshore.
- Cape Paterson (population 718) lies to the west and Inverloch (population 4,960) to the east.
- The catchment is predominantly farmland within the Bunurong Coast catchment in the West Gippsland Catchment Management Authority region. Discharges from the Powlett River and Anderson Inlet are the main freshwater inputs to the park.[69]

Enjoyment and appreciation

- Access to the marine national park is possible via The Oaks, Twin Reefs, Shack Bay and Eagles Nest.[53] Carparks and beach access tracks provide easy access to the shore.
- Recreational activities enjoyed in the marine national park include boat-based activities, snorkelling and short walks. Sightseers travelling the scenic Bunurong Coastal Drive between Inverloch and Cape Paterson often stop to look at Eagles Nest.[23]

Further information on Bunurong Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

PORT PHILLIP HEADS MARINE NATIONAL PARK



Marine national park
Public land
Road
Waterway
Railway

Port Phillip Heads Marine National Park

Environment Conservation Council recommendation

Prior to the Marine, Coastal and Estuarine Investigation Point Lonsdale, Point Nepean, Swan Bay, The Annulus (Popes Eye) and Mud Islands were protected in the Harold Holt Marine Reserves established in 1979. Following the recommendations of the Environment Conservation Council[1] most of the areas of the reserves were incorporated, along with Portsea Hole, into Port Phillip Heads Marine National Park.

In recommending the establishment of Port Phillip Heads Marine National Park, the Environment Conservation Council noted the following values:

- some of Victoria's most treasured marine and coastal environments, within easy access of Melbourne and Geelong
- outstanding environmental, cultural and recreational values, including:
  - > spectacular and popular dive sites (e.g. Lonsdale Wall, Popes Eye)
  - > important areas for migratory birds (Swan Bay and Mud Islands)
  - > seagrass meadows (Swan Bay)
  - > a distinctive bird-dominated island ecosystem at Mud Islands.

Note that the boundary of the park established in legislation is not the same as the recommended boundary.

Natural values

- Port Phillip Heads Marine National Park contains diverse habitats including intertidal and subtidal calcarenite reefs; seagrass meadows and soft sediment; sponge gardens; artificial basalt reef (Popes Eye) and the deep waters of Port Phillip Heads.[71, 72]
- While the marine national park sits mostly within the IMCRA Victorian embayments bioregion, areas of the Point Lonsdale and Point Nepean sections outside Port Phillip Heads are exposed to greater wave energy and sit within the central Victoria bioregion.
- Intertidal and shallow subtidal areas of Port Phillip Heads Marine National Park contain significant shorebird habitat. Swan Bay and Mud Islands form part of the Port Phillip Bay (western shoreline) and Bellarine Peninsula Ramsar site.
- Fifty-eight bird species listed as being of conservation significance have been recorded in or near Port Phillip Heads Marine National Park including the critically endangered orange-bellied parrot and grey-tailed tattler and 43 species listed under international migratory bird agreements.[72]
- There are nine sites of geological and geomorphological significance in the marine national park including the Point Nepean Platforms and Mud Islands of state significance and three regionally significant sites in Swan Bay.[72]
- Marine species and communities listed as being of conservation significance in the marine national park include:
  - > communities: part of the threatened Port Phillip Bay entrance deep canyon marine community falls within the Point Lonsdale section of the park
  - > invertebrates: a ghost shrimp and a species of chiton, both endemic to the park and listed as threatened
  - > syngnathids: including five species of pipefish, two species of seahorse and the weedy seadragon, protected under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (the EPBC Act)

  - mammals: threatened southern right and humpback whales, and the EPBC Act-protected southern elephant and Australian fur seals
  - reptiles: loggerhead turtle (EPBC Act–protected).[72]

- The **Point Lonsdale** section of the marine national park contains intertidal and subtidal soft sediment, the steeply sloping Lonsdale Wall and part of the Port Phillip Bay entrance deep canyon marine community.
- The **Point Nepean** section of the marine national park contains intertidal and subtidal reef, with some soft sediment outside Port Phillip Heads.[72] Inside the heads soft sediment and seagrass habitats dominate. The bay side of the marine national park includes part of Ticonderoga Bay sanctuary zone – a refuge for a population of bottlenose dolphins.
- The **Swan Bay** section of the marine national park is a shallow lagoon which forms part of the Port Phillip Bay (western shoreline) and Bellarine Peninsula Ramsar site. Swan Bay contains a number of species of seagrass, which covers most of the sediment in the bay.[72]
- The **Mud Islands** are low sand islands which circle a central lagoon, and are of geological and geomorphological significance as an uncommon island formation in Victoria.[28] As an island formation, Mud Island's habitat experiences greater protection from human influences.[71] Habitat in this section of the marine national park includes bare sediment, seagrass and saltmarsh.[72] The Mud Islands form part of the Port Phillip Bay (western shoreline) and Bellarine Peninsula Ramsar site.
- The **Popes Eye** section of the marine national park contains a sand shoal with a semi-circular basalt structure on top (the Annulus) forming an artificial reef.[72] The Popes Eye annulus is one of a few artificial structures in Victoria with a breeding population of Australian gannets.[72]
- The **Portsea Hole** section contains a remnant of the Yarra River, an unusual geomorphological feature that is characterised by deep reef encrusted with sessile invertebrates.[71]

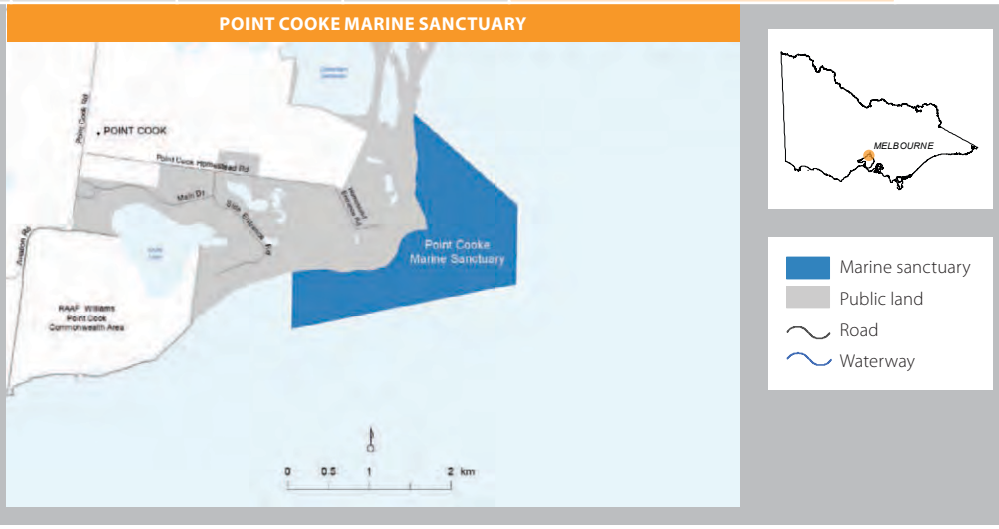
Enjoyment and appreciation

- Shore-based access is possible for the Point Lonsdale, Swan Bay and Point Nepean sections of the marine national park. The Popes Eye, Mud Islands and Portsea Hole sections of the park can be accessed via boat.
- Recreational activities enjoyed in the marine national park include swimming, surfing, snorkelling, nature observation, shore walking and boating.[71] Diving is popular in the Point Lonsdale, Point Nepean, Popes Eye and Portsea Hole sections of the marine national park.[71]
- The rough waters at the entrance to Port Phillip Bay have resulted in a number of shipwrecks in this area, including the areas within the Point Lonsdale and Point Nepean sections of the marine national park. It is thought that 31 of a total of 120 known shipwrecks near Port Phillip Heads are located within these sections of the park.[71]
- Other heritage values in the marine national park include the bluestone annulus at Popes Eye. In the Point Nepean section of the park there are also remnants of a jetty at Observatory Point, and an underwater memorial plaque at Cheviot Beach marks the location where Prime Minister Harold Holt disappeared in 1967.[71]
- A number of tours operate in the marine national park, including dolphin swims and diving tours.
- Community interest in the Port Phillip Heads Marine National Park is reflected by groups such as Friends of Mud Islands, the Swan Bay Environment Association and the recently formed Port Phillip Heads Marine National Park Marine Care group.
- Dolphin research is undertaken in the park by the Dolphin Research Institute, and the Victorian Wader Study Group also monitors birds in the Swan Bay and Mud Islands sections of the park.

Further information on Port Phillip Heads Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- Total area of 3,580 hectares in six sections: Point Lonsdale, Point Nepean, Popes Eye, Portsea Hole, Mud Islands and Swan Bay.
- Port Phillip Heads Marine National Park is located at the southern end of Port Phillip Bay.
- On the Bellarine Peninsula, Queenscliff and Point Lonsdale (combined population of approximately 4,000) are adjacent to the marine national park. On the Mornington Peninsula, Portsea (population 446) is the closest town to the marine national park. Port Phillip Heads Marine National Park is within easy reach of the populations of the Bellarine and Mornington peninsulas as well as Victoria's major cities, Melbourne and Geelong.
- The sections of the park on the eastern side of the bay are adjacent to the Swan Bay catchment in the Corangamite Catchment Management Authority region. The sections of the park on the eastern side of the bay fall within the Port Phillip and Westernport Catchment Management Authority region.



Point Cooke Marine Sanctuary

Environment Conservation Council recommendation

Prior to the Marine, Coastal and Estuarine Investigation a smaller area at Point Cooke was reserved in 1982 as Point Cook Marine Reserve, and included a small no-take zone. Following the recommendations of the Environment Conservation Council[1] the pre-existing reserve was incorporated into Point Cooke Marine Sanctuary^.

In recommending the establishment of Point Cooke Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- a typical example of the very shallow western Port Phillip Bay shoreline with narrow beaches of mud and sand
- relatively intact habitats that are readily accessible to Melbourne's population
- the area includes basalt reef habitats and also forms part of a Ramsar site
- the area is popular for bird-watching, sightseeing, diving and snorkelling.

Natural values

- Habitats in the marine sanctuary include intertidal and shallow subtidal basalt reef and soft sediment, narrow beaches and small patches of seagrass[72]. Beds of cunjevoi (sea squirts) on soft sediment provide habitat and also form a surface for seaweed to attach to.[72]
- The intertidal reef and mud flats, sandy beaches and offshore banks and waters provide important habitat for resident and migratory shorebirds[72], complementing the shorebird habitat provided in the adjacent Cheetham Wetlands. Forty-four conservation listed bird species have been documented in or near the marine sanctuary.[72] Part of the marine sanctuary is included in the Port Phillip Bay (western shoreline) and Bellarine Peninsula Ramsar site.
- Pipefish, a protected syngnathid species under the EPBC Act, inhabit seagrass beds in the marine sanctuary.[72]
- Two sites of regional geological and geomorphological significance are included in Point Cooke Marine Sanctuary: sand ridge formations and relict basalt spits.[28]
- Flora and fauna of intertidal and subtidal reef habitats in the marine sanctuary are monitored by Parks Victoria.[73, 74]

^ 'Cooke' is the original spelling - the 'e' was lost in the 1850s. The point was named after John M Cooke, the mate of HMS 'Rattlesnake' commanded by Captain William Hobson that charted Port Phillip Bay in 1836.

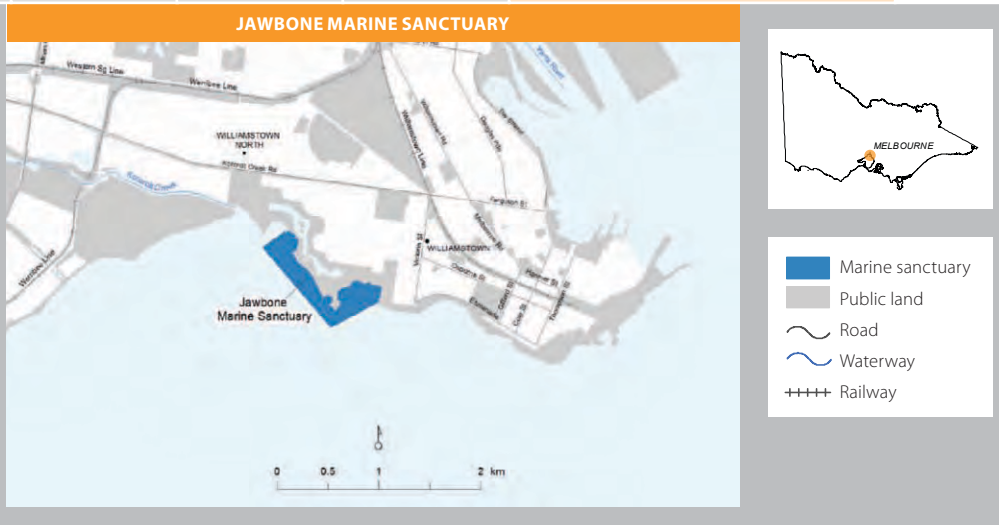
Enjoyment and appreciation

- Recreational activities enjoyed in the marine sanctuary include beach recreation, nature observation including bird watching, snorkelling and SCUBA diving, and boating.[75] Recreational use of the marine sanctuary is expected to increase with increasing population in the surrounding area.
- The marine sanctuary can be accessed from shore via the Point Cook Coastal Park or by boat (the nearest ramps are Altona, Newport and Werribee South).[75]
- Two heritage listed shipwrecks can be found within the marine sanctuary: the *Diana* and the *Henrietta*.[75] The remnants of a pier are also found in the marine sanctuary.
- Marine Care Point Cooke is a community group which undertakes conservation and educational activities, including informative signage and a website. The group also participates in surveys associated with Reef Watch Victoria, Sea Search and the Great Victorian Fish Count.[76]

Further information on Point Cooke Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 290 hectares (Victoria's largest marine sanctuary)
- The marine sanctuary extends for approximately 3.5 kilometres around the headland of Point Cook, from the high water mark to between 750 and 1,100 metres offshore.
- Point Cook (population 32,413) is the closest suburb of Melbourne to the marine sanctuary and is separated from the sanctuary by Point Cook Coastal Park. Point Cook and nearby suburbs are part of a growth area experiencing rapid and extensive housing development.
- A portion of Cheetham Wetlands drains into the marine sanctuary, and Skeleton and Laverton creeks discharge north of the sanctuary. The catchment, which is very urbanised in its lower reaches, falls within Melbourne Water's Werribee catchment and is in the Port Phillip and Westernport Catchment Management Authority region.



Jawbone Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Jawbone Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- a representative example of a Port Phillip Bay environment which is significant as a scientific reference area
- habitats include rocky basalt reef, seagrass beds, intertidal flats and the largest occurrence of mangroves in Port Phillip Bay
- the reef has diverse biota that, for Port Phillip Bay, is unusually unmodified
- subtidal soft sediments support high species richness
- migratory waders roost on intertidal basalt reef.

Natural values

- Jawbone Marine Sanctuary is shallow and contains intertidal and subtidal basalt reef and soft sediment habitats, as well as patches of mangroves, saltmarsh and seagrass.
- A remnant stand of white mangroves, one of only a few in Port Phillip Bay, grows on sediment trapped in crevices on the basalt reef.[72, 77] The mangroves are backed by wet saltmarsh,[72, 77] which extends into the adjacent coastal reserve.
- The marine sanctuary has an extensive intertidal basalt reef and boulder field which is up to 30 metres wide and contains habitat forming crevices.[72] The basalt shore platform and boulder terrace is considered regionally significant from a geological and geomorphological perspective.[72]
- Thirty-six bird species listed as being of conservation significance have been recorded in or near the marine sanctuary; including 24 migratory species.[72] Jawbone Marine Sanctuary provides feeding and roosting habitats which complement wetland habitat found in the surrounding area.
- The protected brushtail pipefish and the critically endangered grey nurse shark have been sighted in or near the marine sanctuary.[72]
- Flora and fauna of intertidal and subtidal reef habitats in the marine sanctuary are monitored by Parks Victoria.[73, 74] Initial studies of the area of the marine sanctuary were undertaken following the decommissioning of the Merrett Rifle Range in 1986.[77]

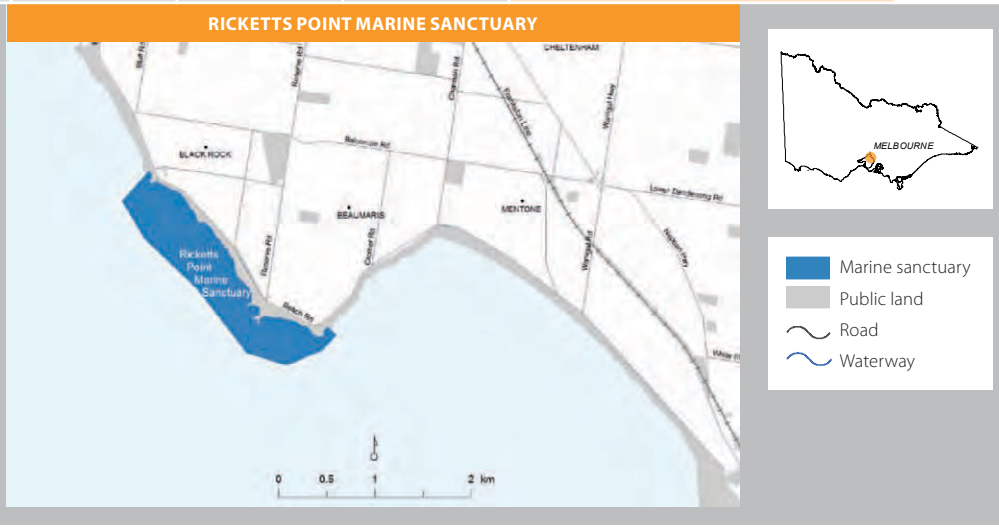
Enjoyment and appreciation

- In the 1850s the intertidal area of the marine sanctuary was used to unload livestock for an adjacent slaughterhouse.[77] From 1877 to the late 1980s the area was used as a rifle range, effectively protecting the intertidal area from human disturbance for this period. A small section of stone seawall in Jawbone Bay is a relict of the rifle range, and objects associated with the use of the area as a rifle range can be seen in the marine sanctuary.[77]
- The area of the marine sanctuary was once used as a ship scuttling ground and contains five heritage-listed shipwrecks.[77]
- Recreational activities enjoyed in the marine sanctuary include beach recreation activities such as swimming and walking at the small beach in Jawbone Bay, as well as nature enjoyment and appreciation activities such as bird watching, snorkelling, SCUBA diving, kayaking and canoeing.[77] The seascape of the marine sanctuary can be observed from adjacent coastal reserves.
- The marine sanctuary is used for coastal and marine educational activities by local schools.[77] The nearby campus of Williamstown High School has constructed wetlands to improve the quality of stormwater draining into the marine sanctuary, and to provide complementary habitat.
- Jawbone Marine Sanctuary Care group undertake conservation and educational activities in the marine sanctuary including snorkelling programs, an informative website and signage, as well as community-based monitoring such as Sea Search and Great Victorian Fish Count events.[78]

Further information on Jawbone Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 30 hectares
- The marine sanctuary extends from Wader Beach (south of the mouth of Kororoit Creek) to the eastern edge of Jawbone Bay, from high water mark to up to 300 metres offshore. It lies offshore from the Jawbone Flora and Fauna reserve.
- Williamstown and Williamstown North (population 14,747) are the closest suburbs of Melbourne to the marine sanctuary.
- The marine sanctuary receives discharges from Kororoit Creek just west of the sanctuary, a stormwater drain in the east of the sanctuary and occasional overflow from the adjacent Range Estate lake system. The adjacent area, which is very urbanised in its lower reaches, falls within Melbourne Water's Werribee Catchment and is in the Port Phillip and Westernport Catchment Management Authority region.



Ricketts Point Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Ricketts Point Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- representative of eastern shoreline environments of Port Phillip Bay
- potential for public education and enjoyment of marine environments as the area is accessible to large numbers of people
- habitats include intertidal and subtidal sandstone reef and soft sediment
- high diversity of flora and fauna on offshore reefs.

Natural values

- Ricketts Point Marine Sanctuary has extensive intertidal and shallow subtidal sandstone reefs, which occupy about three quarters of the marine sanctuary and provide a range of microhabitats.[72, 79] Other habitats in the marine sanctuary include intertidal and subtidal soft sediment interspersed between headlands and reefs, as well as patchy seagrass beds.[72]
- The shore platforms extending from Middle Reef to Table Rock Point are geologically and geomorphologically significant as the widest platforms on Port Phillip Bay's eastern shoreline which show the structure of the sandstone formation.[80]
- Ricketts Point Marine Sanctuary provides regionally important shorebird habitat and 75 bird species have been recorded in or near the sanctuary.[79] Eleven species of birds listed as being of conservation significance have been recorded, including seven listed under international migratory bird agreements.[72]
- The southern hooded shrimp, listed under the *Flora and Fauna Guarantee Act 1988,* is found in the marine sanctuary and is presumed to be endemic to the area.[72] Marine mammals that have been observed in or near the marine sanctuary include common and bottle-nosed dolphins, as well as Australian and New Zealand fur seals and elephant seals.[72]
- Flora and fauna of intertidal and subtidal reef habitats in the marine sanctuary are monitored by Parks Victoria.[73, 74]

Enjoyment and appreciation

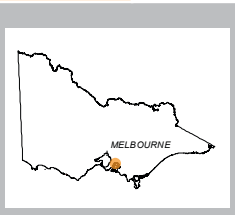
- Scenic and easily accessible to the eastern suburbs of Melbourne, the Ricketts Point area has long been popular for recreation. Activities enjoyed in the marine sanctuary include swimming, walking, nature observation, snorkelling and diving.[79] Recreational boating, including sailing and use of personal watercraft such as kayaks, is also enjoyed in the sanctuary, with Beaumaris Yacht Club adjoining the marine sanctuary.
- The marine sanctuary, in particular the intertidal reef areas, are a marine education destination for school groups and other environmental education programs.[79]
- Marine Care Ricketts Point is an active group that undertakes community-based monitoring and research in the marine sanctuary, and plays an active role in educating and informing the community. Volunteers have mapped and studied habitats and species in the sanctuary. The group has also established a marine education centre and hosts an informative website.

Further information on Ricketts Point Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au and on the Marine Care Ricketts Point website at www.marinecare.org.au.

Location and extent

- 115 hectares
- The marine sanctuary extends from north of Quiet Corner to the inlet east of Table Rock Point and offshore for about 500 metres.
- Beaumaris and Black Rock (combined population 18,773) are the suburbs of Melbourne neighbouring the marine sanctuary.
- Five drains carrying stormwater runoff from adjacent residential areas discharge into the marine sanctuary.[79] The adjacent land, which is very urbanised in its lower reaches, falls within Melbourne Water's Dandenong Catchment and is in the Port Phillip and Westernport Catchment Management Authority region.

YARINGA MARINE NATIONAL PARK



Marine national park
Public land
Road
Waterway

Yaringa Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Yaringa Marine National Park, the Environment Conservation Council[1] noted the following values:

- relatively undisturbed saltmarsh and mangrove habitats, which are of geomorphological significance
- sheltered intertidal mudflats and mangroves provide habitat for waterbirds to forage and roost; the site forms part of the Western Port Ramsar site
- the area adjoins coastline with significant ecological values protected in a nature conservation reserve.

Natural values

- Yaringa Marine National Park contains a mosaic of habitats, including the most extensive area of mangroves in Western Port[81] and several types of saltmarsh,[82] which cover around a third of the park.[83] Other habitats in the park include intertidal and shallow subtidal sand and mud flats, some of which are vegetated by seagrass.[81]
- Habitat in the park is in relatively good condition as the inaccessibility of the area has prevented disturbance.[81] Parts of the park were previously protected in the North Western Port Nature Conservation Reserve.
- More than 80 percent of Yaringa Marine National Park is intertidal, with the subtidal portion consisting mainly of channels.[81]
- Forming part of Western Port Ramsar site, the marine national park provides habitat for 39 bird species listed as being of conservation significance, including:
  - > twenty-seven species listed under international migratory bird agreements
  - > three species critically endangered in Victoria: orange-bellied parrot, grey-tailed tattler and intermediate egret.[81]
- Watson Inlet and Quail Island form a site of state geological and geomorphological significance as a relatively undisturbed mangrove and saltmarsh area.[28] The sand spit at Bungower Point, on the western side of the marine national park, is also significant from a geological and geomorphological perspective.[28]
- The threatened fish—the pale mangrove goby—has been recorded in the marine national park, which is also likely to provide habitat for protected syngnathid (e.g. pipefish and seahorse) species.[81]

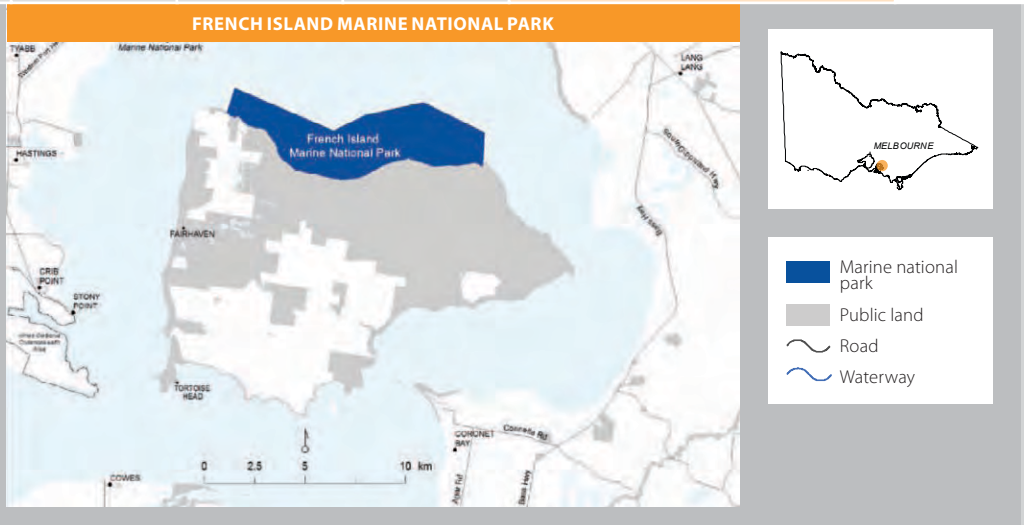
Enjoyment and appreciation

- Yaringa Marine National Park can only be accessed via boat as thick saltmarsh and mangrove prevent shore-based access.[84]
- Poor access and the nature of the park make it unsuitable for a range of typical marine recreation activities; for example shallow turbid waters are unsuitable for snorkelling and diving.
- Birdwatching is enjoyed in the park. Bird study groups such as the Bird Observers Club of Australia (now Birdlife Australia) and Victorian Wader Study Group have studied shorebirds in Western Port for several decades.[85]

Further information on Yaringa Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 980 hectares
- The marine national park is located in Watson Inlet in northern Western Port and extends from north of the Yaringa marina to the eastern coastline of Quail Island.
- The area adjacent to the marine national park is largely rural. The nearest settlements are Pearcedale (population 3,871), Warneet (population 446) and Cannons Creek (population 557).
- Watsons, Langwarrin and Cannons creeks discharge into or near the marine national park. The adjacent land falls within Melbourne Water's Westernport Catchment and is in the Port Phillip and Westernport Catchment Management Authority region.



French Island Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of French Island Marine National Park, the Environment Conservation Council[1] noted the following values:

- habitats include seagrass beds, intertidal mudflats, areas of deeper channels, mangroves and saltmarsh
- the north shore of French Island is one of the major areas of saltmarsh and mangrove in Victoria, and is of state geomorphological significance
- the intertidal flats are significant habitat for shorebirds and the area forms part of the Western Port Ramsar site
- Barrallier Island is one of the bay's 13 high tide roost sites and is particularly sensitive to disturbance.

Natural values

- Habitats in French Island Marine National Park include seagrass, mangroves, sandy beaches and intertidal and subtidal soft sediment. A network of tidal channels provide deeper subtidal habitat.[81]
- More than 73 percent of French Island Marine National Park is intertidal.[81] Most of the subtidal portion of the park is shallow mudflats, with the remaining subtidal area consisting of channels up to 12 metres deep.[81]
- Forming part of the Western Port Ramsar site, the marine national park provides habitat for 40 bird species listed as being of conservation significance, including:
  - > twenty-seven species listed under international migratory bird agreements
  - > three critically endangered species: orange-bellied parrot, grey-tailed tattler and intermediate egret.[81]
- Barrallier Island is an important roosting area for shorebirds, and has also been used for breeding by little penguins.[85]
- A threatened brittle star has been recorded in the marine national park.[81] Protected syngnathid species and the threatened pale mangrove goby are thought to occur in the park.[81]
- The north shore of French Island is a site of geological and geomorphological significance as it demonstrates the sedimentary processes of one of Victoria's main mangrove and saltmarsh systems.[86] The sand ridges at Palmers Point are also significant as they demonstrate relict geomorphological processes.[86]

Enjoyment and appreciation

- There is no access to the marine national park from the shore due to the thick saltmarsh and mangrove vegetation. Public access including all vessels is mostly prohibited in the intertidal area 300 metres seaward from high water mark.
- Poor access, potentially dangerous conditions and the nature of the park make it unsuitable for typical marine recreational activities.
- Birdwatching is enjoyed in the park. Bird study groups such as the Bird Observers Club of Australia (now Birdlife Australia) and Victorian Wader Study Group have studied shorebirds in Western Port for several decades.[85]

Further information on French Island Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 2,800 hectares
- Extends for around 15 kilometres along the north shore of French Island, from Barrallier Island to Palmer Point, extending about one to three kilometres from high water mark.
- The park adjoins French Island National Park; the rest of French Island is largely rural (population 116).
- The marine national park is affected mainly by tidal dynamics but receives inputs from parts of the greater Western Port catchment. The catchment falls within the Port Phillip and Westernport Catchment Management Authority region.

Churchill Island Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Churchill Island Marine National Park, the Environment Conservation Council[1] noted the following values:

- a variety of sheltered habitats including intertidal mudflats, seagrass beds, tidal channels, mangroves, sandy beaches and rocky intertidal habitats
- part of the Western Port Ramsar wetlands, the area provides significant feeding and roosting habitat for migratory waders
- the raised beach between Chambers Point and Long Point is of state geological and geomorphological significance.

Natural values

- Habitats in Churchill Island Marine National Park include basalt cobble and shingle beaches, intertidal mudflats, shallow subtidal soft sediments and tidal channels, seagrass and patches of saltmarsh and mangrove.[1, 81, 82]
- Around two thirds of the marine national park is comprised of shallow subtidal flats and channels.[81] Intertidal habitat comprising around a third of the park provides feeding habitat for shorebirds.[81]
- The marine national park includes three sites of geological and geomorphological significance; these sites contain relict features from times of higher sea level.[86]
- Forming part of the Western Port Ramsar site, the marine national park provides habitat for 41 bird species listed as being of conservation significance, including:
  - > twenty-nine species listed under international migratory bird agreements
  - > two critically endangered species: orange-bellied parrot and grey -tailed tattler.[81]

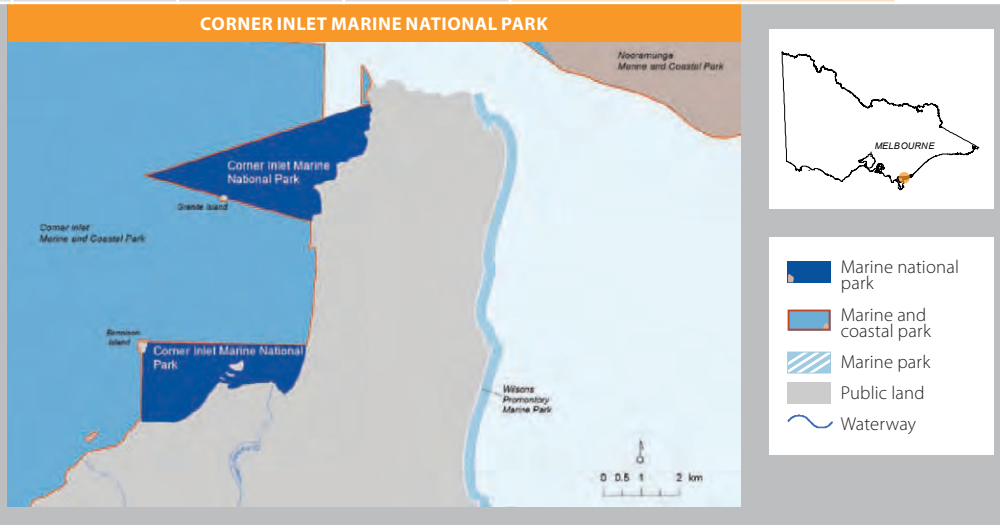
Enjoyment and appreciation

- Churchill Island Marine National Park is the only marine protected area in Western Port that can be accessed from the shore as well as by boat.[84] Non-motorised watercraft can be launched from cobble and shingle beaches.[84]
- Birdwatching is enjoyed in the park. Bird study groups such as the Bird Observers Club of Australia (now Birdlife Australia) and Victorian Wader Study Group have studied shorebirds in Western Port for several decades.[85]
- Other activities enjoyed in the area include diving, snorkelling and boating.[84]

Further information on Churchill Island Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 670 hectares
- The marine national park extends from Long Point on the eastern coast of Phillip Island to North Point on Churchill Island, encompassing Swan Bay and Renison Bight.
- Newhaven (population 386), Rhyll (population 674) and Cape Woolamai (population 1,549) are the closest of Phillip Island's settlements to the park; San Remo (population 1,083) is located on the mainland nearby.
- The marine national park is affected mainly by tidal dynamics but receives inputs from parts of the greater Western Port catchment. The catchment falls within the Port Phillip and Westernport Catchment Management Authority region.



Corner Inlet Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Corner Inlet Marine National Park, the Environment Conservation Council[1] noted the following values:

- sheltered, open bay, habitats such as intertidal mudflats, channels and seagrass beds
- the area contains samples of extensive seagrass communities including the broad-leafed seagrass, which is the most faunally diverse habitat studied in the Corner Inlet-Nooramunga area
- very high diversity of invertebrates in soft sediment
- part of the internationally recognised Corner Inlet Ramsar area, significant for over-wintering migratory wading birds.

Note that the boundary of the park established in legislation is not the same as the recommended boundary.

Natural values

- Corner Inlet Marine National Park forms part of the Corner Inlet Ramsar site, recognised as internationally significant habitat for migratory wading birds.
- Corner Inlet Marine National Park is the only no-take marine protected area in Victoria's third largest bay.[1] A shallow embayment, Corner Inlet is also the warmest of Victoria's large bays.[87]
- A range of habitats occurs in Corner Inlet Marine National Park, including deep channels, shallow seagrass beds, sand and mud flats, mangroves, saltmarsh, rocky reefs and sandy beaches.[87,88] The extent of seagrass, saltmarsh and mangroves in Corner Inlet has been mapped through various projects.
- The marine national park contains four of five seagrass species found in Victoria including part of the only extensive broad-leaf seagrass meadows in Victoria.[87]
- The northern and southern sections of the park are distinctly different.[88] The sandy northern section contains broad-leaf seagrass (Posidonia) beds, and includes part of the Bennison Channel. The southern section is largely intertidal[87] and contains mangrove, saltmarsh and a mosaic of eelgrass (Zostera) seagrass species.[88]
- Three sites of regional geological and geomorphological significance are found in the southern section of the marine national park: Chinaman Creek Delta, Barry's Hill to Bennison Point and Bennison Island.[28]

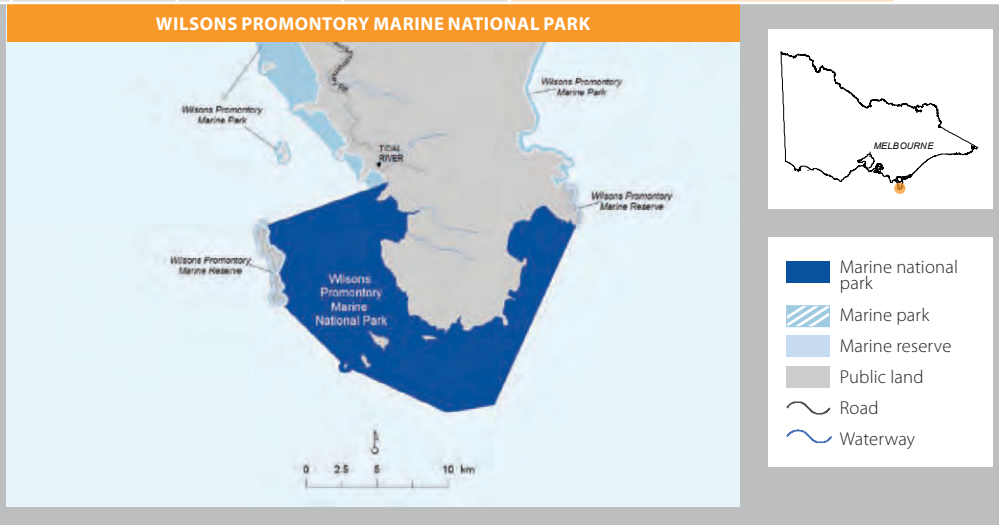
Enjoyment and appreciation

- The marine national park has low levels of visitation.[87] Visitors can access the park by boat or by foot from Wilsons Promontory National Park as part of an overnight walk.[87]
- Recreational activities available to visitors include diving and snorkelling, boating and sea kayaking, wilderness walking in intertidal areas and nature appreciation.[87]
- Community-based monitoring of seagrass in Corner Inlet Marine National Park occurs through the Sea Search program.
- At times, larger commercial and recreational boats anchor in the sheltered northern section of the marine national park to avoid easterly weather.[87]

Further information on Corner Inlet Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 1,550 hectares
- Corner Inlet Marine National Park is made up of two sections. The northern section forms a triangle from around Tin Mine Cove to Freshwater Cove along the northern Wilsons Promontory coastline out to a point towards the middle of the embayment, between Bennison and Middle channels. The southern section extends south and east of Bennison Island to the shores of Wilsons Promontory National Park.
- The marine national park adjoins the northern boundary of Wilsons Promontory National Park, and is surrounded by Corner Inlet Marine and Coastal Park. The closest settlement is Yanakie (population of Yanakie and surrounding region 382).
- Creeks flowing into the marine national park from Wilsons Promontory National Park include Chinaman and Tin Mine creeks. Many other waterways flow into the Corner Inlet embayment. The area is adjacent to the Corner Inlet Catchment in the West Gippsland Catchment Management Authority region.



Wilsons Promontory Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Wilsons Promontory Marine National Park, the Environment Conservation Council[1] noted the following values:

- granite habitats unusual in Victorian marine waters, which include heavy reefs with smooth surfaces, boulders, low profile reef and steep underwater cliffs
- deep heavy reefs have a dense cover of epifauna and are abundant in fish
- Wilsons Promontory marks the distributional limits for a number of species
- marine species, including seals and oceanic birds, breed on islands (note that, while islands are outside the marine national park, these species travel between the islands and marine habitats in the marine national park)
- some of Victoria's most spectacular underwater scenery, due mainly to the near vertical granite drop offs and good water clarity.

Note that the boundary of the park established in legislation is not the same as the recommended boundary.

Natural values

- Wilsons Promontory Marine National Park is Victoria's largest and most southerly marine protected area, and is also the only no-take area in the Flinders marine bioregion.
- Habitats within the marine national park include shallow and deep subtidal reefs, intertidal reefs, intertidal and subtidal soft sediment, seagrass and open water expanses. The park contains granite reefs, which are unusual in Victoria. Deep granitic reefs are encrusted with sessile invertebrates including sponge gardens, gorgonian corals and the seawhip.[89]
- Wilsons Promontory marks a boundary between warmer waters to the east and cooler waters to the west; accordingly, a number or marine flora and fauna species are believed to reach their eastern or western limits of distribution within the park.[89]
- The marine national park surrounds, but does not include, several islands, which form part of Wilsons Promontory National Park. These islands provide important habitat for species that utilise both marine and coastal environments. There are two little penguin breeding colonies on Anser and Wattle islands and Kanowna Island is an important breeding area for a colony of over 9,000 Australian fur seals.[89]
- A range of species listed as being of conservation significance have been observed in the park including fish such as the great white shark and eastern blue groper; 25 species of shore or sea birds; marine mammals such as southern right whales and New Zealand fur seals; and marine reptiles such as leatherback turtles.[89] A number of fish that inhabit rivers and streams in Wilsons Promontory National Park have marine larval stages including the critically endangered Australian mudfish.[89]
- The flora and fauna of subtidal reefs around Wilsons Promontory have been monitored since 1999 with up to 28 sites inspected over 10 survey events.[90]

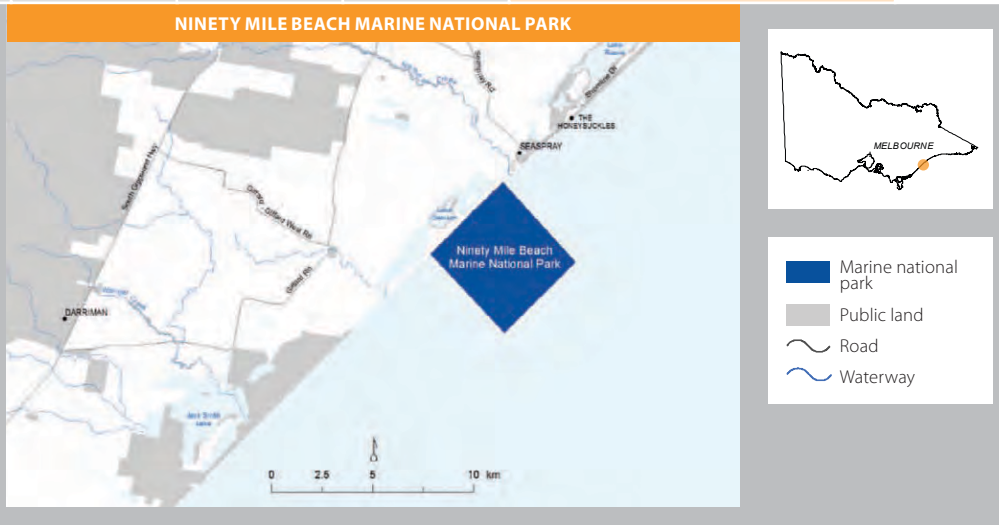
Enjoyment and appreciation

- The marine national park contains historic shipwrecks which provide evidence of past shipping activities, including exploration and surveys and commercial activities such as fishing, sealing, whaling and mining.[24]
- Wilsons Promontory Marine National Park adjoins one of Victoria's most well known terrestrial national parks, and provides complementary nature-based recreation activities such as boating, sea kayaking, swimming, snorkelling and surfing.[24]
- Boat-based SCUBA divers enjoy superb underwater scenery on the caves and walls of the granite reefs, and the park is a spectacular and diverse destination for diving and underwater photography.[24]

Further information on Wilsons Promontory Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 15,550 hectares (Victoria's largest no-take marine protected area)
- The marine national park surrounds most of the southern coast of Wilsons Promontory, extending from the southern end of Norman Bay to the northern end of Waterloo Bay and seaward generally to the limit of Victorian territorial waters, excluding the waters for 300 metres around the Glennie group of islands west of Wilsons Promontory.
- The area adjoining the marine national park is Wilsons Promontory National Park which has a main camping and service area at Tidal River. North of the national park there is a small settlement at Yanakie (population of Yanakie and surrounding region 382).
- A number of creeks flow into the marine national park from the adjacent Wilsons Promontory National Park. The national park falls within the West Gippsland Catchment Management Authority region.



Ninety Mile Beach Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Ninety Mile Beach Marine National Park, the Environment Conservation Council[1] noted the following values:

- habitats typical of Ninety Mile Beach including sandy beaches, subtidal rocky reefs and subtidal soft sediment
- scientifically significant low profile offshore reefs which are covered and uncovered periodically by sand; these reefs may be remnants of dune systems formed when sea levels were lower
- the area contains an unusual soft coral only found in Victoria between McGuarans and Delray beaches
- evidence of aggregations of young white sharks suggests that the area is used as feeding grounds.

Natural values

- Covering around four percent of the total length of Ninety Mile Beach, the marine national park contains habitats typical of this coastline.[89]
- The majority of the park is comprised of intertidal and subtidal soft sediment habitats, with offshore subtidal reef that is intermittently uncovered from beneath sand.[1]
- Twenty-eight bird species listed as being of conservation significance have been recorded in or near the marine national park, including 20 species listed under international migratory bird agreements.[89]
- Marine mammals recorded in the park include the Australian and New Zealand fur seals and the endangered southern right whale.[89]

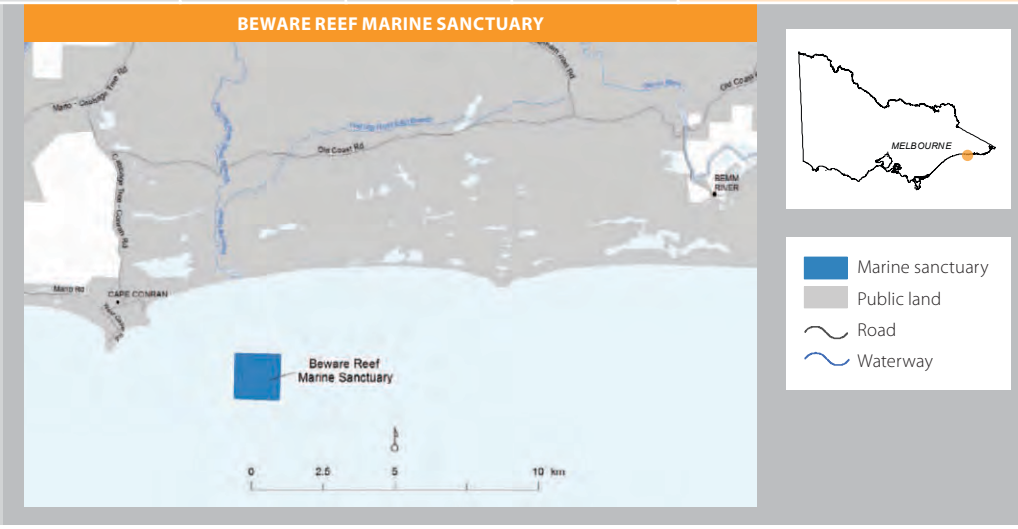
Enjoyment and appreciation

- Recreational activities enjoyed by visitors to the park include beach walking, boating and horse riding.[91]
- As the marine national park is difficult to access from land, visitors generally access the park by boat.[91]

Further information on Ninety Mile Beach Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 2,750 hectares
- The marine national park extends along approximately five kilometres of Ninety Mile Beach, from the high water mark seaward to the limit of state territorial waters at three nautical miles (approximately 5.5 kilometres) offshore.
- The adjacent area is largely rural, with Seaspray (population 316) and the small settlement of the Honeysuckles located just east of the marine national park.
- The predominantly agricultural Ninety Mile Beach catchment is in the West Gippsland Catchment Management Authority region. Mason Creek discharges into the marine national park, and Merriman Creek discharges just beyond the eastern boundary of the park. Occasionally, Lake Dennison overflows, discharging south of the park.



Beware Reef Marine Sanctuary

Environment Conservation Council recommendation

In recommending the establishment of Beware Reef Marine Sanctuary, the Environment Conservation Council[1] noted the following values:

- representative of reef environments in the eastern biophysical region, the granite reef has bull kelp forests and shipwreck remains
- diversity of invertebrate and fish species
- underwater recreation.

Natural values

- Habitats in the marine sanctuary include intertidal and subtidal granite reef and subtidal soft sediment. The intertidal reef consists of a rounded granite platform.[92]
- The marine sanctuary is influenced by both the tail end of the East Australian Current and cold water upwellings due to the nearby continental shelf.[93] The flora and fauna of the area are typical of both eastern and southern temperate waters.[93]
- A range of sessile and mobile invertebrate species are found on the reef, including blacklip abalone, feather stars and sea urchins.[93]
- Seventeen species of sea birds listed as being of conservation significance have been observed in or near the marine sanctuary, including the endangered wandering albatross and 11 species listed under international migratory bird agreements.[89]
- Marine mammals observed in the marine sanctuary include southern right and humpback whales, southern elephant seal and killer whale (Orca).[89]
- Intertidal reef in the marine sanctuary is used as a haul-out area by Australian and New Zealand fur seals.[92] Little penguins and other seabirds are known to rest and/or feed on the intertidal reef.[92]
- Flora and fauna of the subtidal reef habitat in the marine sanctuary are monitored by Parks Victoria and surveyed regularly by the Friends of Beware Reef (also see below).

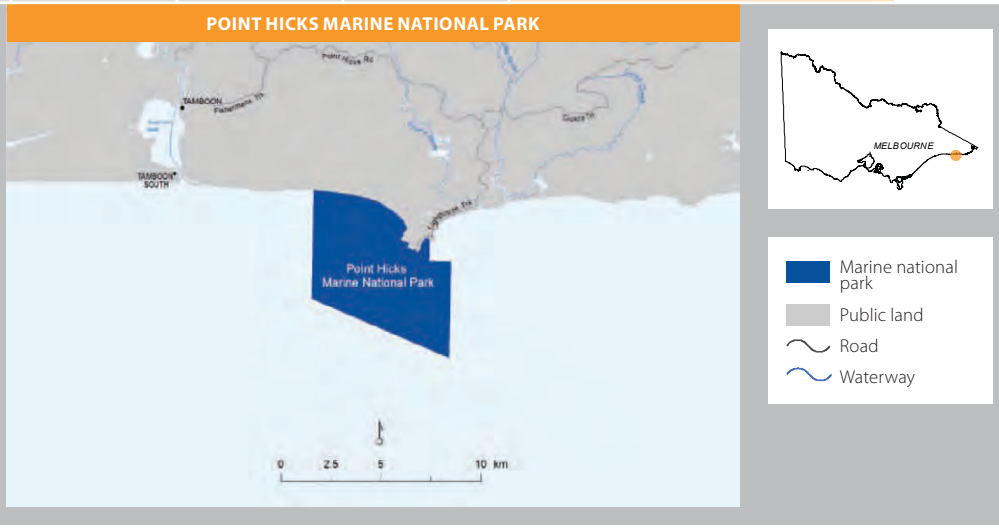
Enjoyment and appreciation

- The heritage-listed wrecks of three steamships can be found in the marine sanctuary: the *Auckland, Ridge Park* and *Albert San*.[92]
- SCUBA diving and snorkelling are the main recreational activity enjoyed in the marine sanctuary.[92] Overall, the number of visitors to the sanctuary is low.[92]
- Friends of Beware Reef is a community group which surveys the reef regularly, documenting and reporting reef life, pests and illegal fishing activities. The group has been successful in obtaining a number of grants to carry out projects in the marine sanctuary.

Further information on Beware Reef Marine Sanctuary including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 220 hectares
- The marine sanctuary is a 1.5 kilometre square area around Beware Reef, located south east of Cape Conran.
- The marine sanctuary is located offshore, about 18 kilometres east of Marlo township (population 678).
- The marine sanctuary is located approximately three kilometres offshore and does not receive any discharges from waterways.



Point Hicks Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Point Hicks Marine National Park, the Environment Conservation Council[1] noted the following values:

- rich marine life includes colourful algae and diverse reef fish
- very high species richness of fauna, including intertidal and subtidal invertebrates
- excellent opportunities for diving and snorkelling.

Natural values

- Habitats in the marine national park include intertidal and subtidal reef, sandy beaches and subtidal soft sediment.
- The park is influenced by both the East Australian Current and cold water upwellings due to the nearby continental shelf.[93] Both eastern and southern temperate species are found in the area.[93]
- The western shore of the marine national park is a sandy beach backed by an extensive dune system.[88] In the east of the park, Point Hicks is a granite promontory with a wide rocky shore.[56]
- Subtidal soft sediment accounts for the majority of the seafloor area in the park; some of the sediment contains sessile invertebrates, in other areas sessile invertebrates grow alongside seaweed.[88]
- Twenty-six species of birds listed as being of conservation significance have been observed in or near the marine national park, including the endangered little egret and fairy tern and 12 species listed under international migratory bird agreements.[89]
- Marine mammals observed in the marine sanctuary include southern right and humpback whales and killer whale (Orca), and seals including leopard seals as well as Australian and New Zealand fur seals.[89]
- Whale shark and eastern blue groper are two fish species of conservation interest recorded in the park.[89] A number of fish that inhabit rivers and streams close to Point Hicks Marine National Park have marine larval stages including the threatened Australian grayling.[89]
- Flora and fauna of shallow subtidal reefs around Point Hicks are monitored by Parks Victoria.[94]

Enjoyment and appreciation

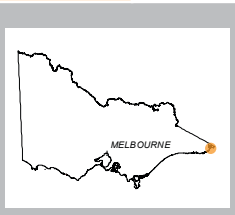
- Sightseeing, walking, and occasionally boating, are the main recreational activities enjoyed in the marine park.[95] Overall visitation to the park is relatively low[95] although the clear waters of the park offer spectacular diving and snorkelling opportunities from shore or boat.
- The marine national park can be accessed from the shore via a short walk from Point Hicks road; the nearest launching points to access to the park by boat are at Lakes Entrance, Cape Conran or Mallacoota.[95]
- The heritage-listed wrecks of two steamships, Kerangie and Saros, lie within the marine national park.[95]

Further information on Point Hicks Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 4,000 hectares
- The marine national park extends along approximately 10 kilometres of coastline from east of Clinton Rocks to Stable Bay, and from the high water mark to the limit of state territorial waters three nautical miles (approximately 5.5 kilometres) offshore.
- The park adjoins Croajingolong National Park and Point Hicks Lighthouse Reserve. Cann River (population 169) is approximately 25 kilometres north of the park.
- The adjacent catchment is largely within terrestrial protected areas and falls within the Far East Basin in the East Gippsland Catchment Management Authority region. The nearest discharges to the park are the Thurra and Mueller rivers, located east of the marine national park.

CAPE HOWE MARINE NATIONAL PARK



Marine national park
Public land
Road
Waterway

Cape Howe Marine National Park

Environment Conservation Council recommendation

In recommending the establishment of Cape Howe Marine National Park, the Environment Conservation Council[1] noted the following values:

- a remote area which adjoins one of only two wilderness areas in Victoria, which also forms part of the largest coastal conservation reserve in south-eastern Australia
- high diversity of intertidal and shallow subtidal invertebrates
- complex rocky habitats include low profile and heavy boulder reefs
- reefs consist of granite and sandstone, adding to the substrate complexity of the area; sandstone reefs are covered with a diverse array of sessile invertebrates.

Note that the boundary of the park established in legislation is not the same as the recommended boundary.

Natural values

- The marine national park consists mostly of deep water habitats, with over 85 percent of the park deeper than 20 metres.[89] Habitats in the marine national park include intertidal and subtidal soft sediments and reef.
- The marine national park is close to the continental shelf and experiences cold water upwellings.[93] Its far easterly position means that the area is also influenced by the East Australian Current.[93] Both eastern and southern temperate species are found in the area.[93]
- Thirty-eight species of birds listed as being of conservation significance have been observed in or near the marine national park, including the critically endangered grey-tailed tattler, endangered Australasian bittern and wandering albatross, as well as 24 species listed under international migratory bird agreements.[89]
- Marine mammals observed in the marine national park include southern right, humpback and killer whale (Orca).[89] Leatherback, green and hawksbill turtles and Australian and New Zealand fur seals have also been recorded in the park.[89]
- The eastern blue groper, a fish species of conservation interest, has been recorded in the park.[89]
- Flora and fauna of the shallow subtidal reefs of the Cape Howe Marine National Park are monitored by Parks Victoria.[94]

Enjoyment and appreciation

- The marine national park experiences low levels of visitation as it is remote and difficult to access.[96] Access is on foot along the Wilderness Coast Walk or by boat, with the nearest boat launching facility at Mallacoota.[96]
- The main recreational activities enjoyed in the park are boating, hiking and sightseeing.[96]
- The heritage-listed wreck of the steamship *Gilbert San* can be found in the marine national park.[96]

Further information on Cape Howe Marine National Park including references to available research and monitoring data can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 4,050 hectares
- The marine national park extends from around one kilometre east of Telegraph Point and north-east of Gabo Island to the New South Wales border, from the high water mark seaward to the limit of state territorial waters at three nautical miles (approximately 5.5 kilometres) offshore. An area around Iron Prince Reef is excluded from the park.
- The marine national park adjoins the Cape Howe Wilderness Area in the Croajingolong National Park. The nearest settlement is Mallacoota (population 1,032), located about 15 kilometres west of the park.
- The adjacent catchment is in a protected wilderness area, and falls within the Far East Basin in the East Gippsland Catchment Management Authority region. The park receives occasional discharges from Lake Wau Wauka.

Bunurong Marine Park

Establishment

Bunurong Marine Park was established in 1991 along approximately 17 kilometres of coastline under a mosaic of Crown lands and fisheries legislation, and is included in Schedule Four of the *National Parks Act* 1975. About a quarter of the area of the marine park was previously reserved in 1984 for the purpose of protection of the coastline. The remaining three quarters of the area was reserved at the time of establishment for the purposes of:

- preservation of an area of ecological significance
- conservation of an area of natural interest or beauty or of scientific, historic or archaeological interest
- public recreation.

At the time the marine park was established, a central section along approximately 5 kilometres of coastline was established as a sanctuary zone where fishing was prohibited.

Like the Harold Holt Marine Reserves in the 1970s, the Bunurong Marine Park was the result of Government responding to a community proposal. The establishment of the marine park began when the then Government, responding to a proposal from South Gippsland environment groups, announced the commencement of a planning process in 1987. A lengthy and controversial planning and zoning process was then carried out resulting in the establishment of the marine park in 1991. The Land Conservation Council's *Melbourne District 2 Review Final Report* in 1994 did not make any further recommendations for Bunurong Marine Park because it was under review as part of the Marine, Coastal and Estuarine Investigation.[1] This report noted however that 'this section of coastline should be managed to protect the nature conservation values of the intertidal rock platforms and the sub-tidal reef environment (presently part of the Bunurong Marine Park), as well as to ensure that recreational access is controlled'.[97] When the Environment Conservation Council completed the Marine, Coastal and Estuarine Investigation in 2000, it recommended that the existing multiple-use park (Bunurong Marine Park) be retained, except where areas of the park were incorporated into the highly protected Bunurong Marine National Park, and managed for a variety of uses that do not impact on the values and objectives of the park. This recommendation was implemented in 2002.

Natural values

- The Bunurong marine environment is unusual compared to most of Victoria's coast as it is sheltered from the full force of the Southern Ocean by King Island and has a broad and relatively shallow intertidal and subtidal rock platform.[1, 70]
- The shallow subtidal reefs in the Bunurong region tend to be more species rich than many other inshore reefs in Victoria, which are often dominated by large kelp species.[70] The Bunurong reefs lack a kelp canopy, but have a rich assemblage of seaweed and sessile invertebrates.[98] The Bunurong coast is also known for its rich and abundant chiton fauna.[70]
- The marine park also includes extensive intertidal rock platforms, intertidal and subtidal soft sediment and *Amphibolis* seagrass beds.[98] *Amphibolis* seagrass supports abundant and diverse epiphyte species as this species has firm and relatively long-lived stems.[37]
- Species found in the vicinity of Bunurong Marine Park listed as being of conservation significance include a species of sea cucumber, southern right whale, hooded plover and sooty oystercatcher.

- Fossils have been found along the coastline between San Remo and Inverloch, including bones and teeth of dinosaurs, birds, mammals, turtles and fish as well as fossilised insects and plant material.[23]
- Flora and fauna of intertidal and subtidal reef habitats of the Bunurong coast have been monitored since 1999.[10, 53, 69]

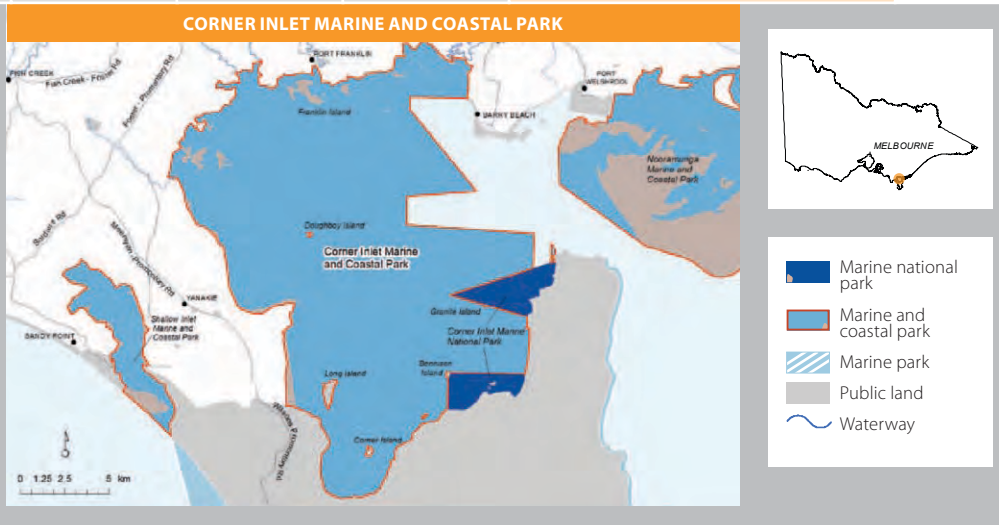
Enjoyment, appreciation and use

- Recreational activities enjoyed in the marine park include fishing, snorkelling, shore or boat-based diving, surfing at Cape Paterson and walks on beaches and intertidal rock platforms.[23] Sightseers travelling the scenic Bunurong Coastal Drive between Inverloch and Cape Paterson have opportunities to access and/or view the park.
- Boat-based activities, including fishing, are also enjoyed in the park; there is a boat ramp at Cape Paterson and an informal boat launching site suitable for small craft at Flat Rocks.[23]
- The fossil sites on intertidal reefs are used for paleontological study and education. Annual fossil digs are conducted in the eastern section of the marine park.[23]
- Commercial fishing is allowed within Bunurong Marine Park.

Further information on Bunurong Marine Park can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 1,260 hectares
- Adjoins the western boundary of the Bunurong Marine National Park to Coal Point west of Harmers Haven and the eastern boundary to Wreck Creek on the western outskirts of Inverloch extending from high water mark to one kilometre offshore.
- Harmers Haven (population 82) and Cape Paterson (population 718) are adjacent to the western boundary of the park and Inverloch (population 4,960) lies just beyond the eastern boundary.
- The adjacent catchment is predominantly agricultural and falls within the Screw Creek, Pound Creek and Anderson Inlet sub-catchment in the West Gippsland Catchment Management Authority region. Coal Creek, Wreck Creek and intermittent streams discharge directly into the park.[23] The nearby Powlett River and Anderson Inlet, outside the boundaries of the park, are also inputs to the marine park.



Corner Inlet Marine and Coastal Park

Establishment

In the 1982 *South Gippsland District 2 Final Report*,[4] the Land Conservation Council recognised the ecological values of the Corner Inlet area, particularly as an important area for migratory birds. The Council recommended that the area be used primarily to conserve and protect marine ecosystems, particularly the habitat of international migratory waders, and to provide opportunities for recreation and education associated with the enjoyment and understanding of natural features.

In response to these recommendations, and following a lengthy additional consultation and planning process (see section 2.1.1), the Corner Inlet Marine and Coastal Park was reserved in 1986 and included in Schedule Four of the *National Parks Act 1975*. The documented reservation purpose of the marine and coastal park was 'conservation of areas of natural interest or beauty or scientific history or archaeological interest and areas for public recreation'. As the park was quickly reserved, pre-existing reserved parcels of Crown land were not included in the 1986 reservation or Schedule Four of the *National Parks Act 1975*. Survey work from more than a decade ago needs to be recommenced and completed in order for these areas to be re-reserved in accordance with the intentions reflected in Government announcements, maps and publications, and the indicative plan lodged in the Central Plan Office at the time of gazettal.

Natural values

- Corner Inlet embayment, most of which is in the marine and coastal park, is a shallow submerged plain that was formed by a tectonic depression.[56] Its shallow nature makes Corner Inlet the warmest of Victoria's large bays.[87]
- The park has a range of habitats, including extensive seagrass beds, mangroves, saltmarsh, sand and mud flats and tidal channels. Relatively small amounts of terrestrial habitats are included around the edge of the marine and coastal park. Vegetation found in these areas includes small amounts of woodland, wetland and forest.
- The marine and coastal park is part of the internationally significant Corner Inlet Ramsar site. The Ramsar site, including the marine and coastal park, provides habitat for significant numbers of shorebirds and waterfowl, including species listed under international migratory bird agreements.
- The park includes a range of seagrass habitats, including parts of the only extensive meadows of broad-leaf seagrass in Victoria.[99] Broad-leaf seagrass meadows are an important ecological component of Corner Inlet.[87, 100]
- The white mangrove, Victoria's only mangrove species, forms large intact stands and reaches its southern limit of distribution in Corner Inlet.
- A number of sites of geological and geomorphological significance are located in the park including Duck Point, Tea Tree Point and Tea Tree Island, Toora Channel intertidal flats and Mangrove Island.
- The extent of seagrass, saltmarsh and mangroves in Corner Inlet has been mapped through various projects.

Enjoyment, appreciation and use

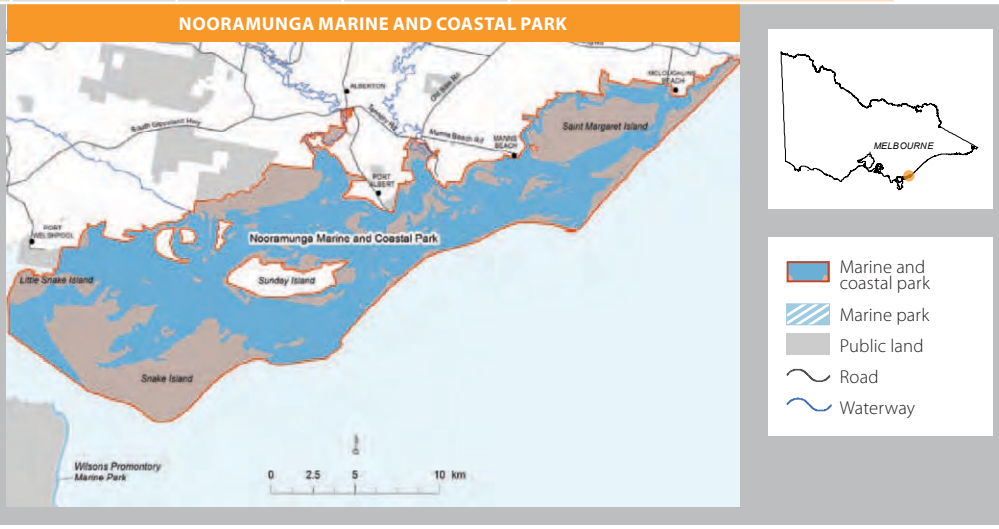
- Recreational activities enjoyed in the marine and coastal park include boating, sea kayaking, fishing and bird watching.[99]
- Government agencies, landowners and the community are working together through the Corner Inlet Connections program to improve the health of the largely agricultural catchment, highlighting the connection between catchment health and the health of Corner Inlet's marine environment.
- The Corner Inlet Community Seagrass Monitoring Project, part of the Parks Victoria Sea Search program, engages community volunteers to help monitor the health of broad-leaf seagrass within Corner Inlet.
- The Corner Inlet commercial fishery includes the waters of both the Corner Inlet and Nooramunga marine and coastal parks. Commercial species caught in this fishery area include flathead, King George whiting, Southern Sea garfish and calamari.[101]
- Port Franklin, located adjacent to the northern boundary of the marine and coastal park, mainly services the commercial fishing industry and local community.[99]

Further information on Corner Inlet Marine and Coastal Park is available from a range of agency websites, including:

- www.parkweb.vic.gov.au (Parks Victoria)
- www.dse.vic.gov.au (the Department of Sustainability and Environment)
- www.wgcma.vic.gov.au (West Gippsland Catchment Management Authority)
- www.environment.gov.au (the Australian government Department of Sustainability, Environment, Water, Populations and Communities).

Location and extent

- 28,585 hectares (including around 685 hectares of terrestrial environment)
- Corner Inlet Marine and Coastal Park occupies most of the Corner Inlet embayment (the western portion of Corner Inlet bordered by Wilsons Promontory), excluding the areas of Corner Inlet Marine National Park. The marine and coastal park also includes a fringe of coastline of varying widths, except along the southern boundary where it abuts Wilsons Promontory National Park.
- The land adjoining Corner Inlet Marine and Coastal Park is largely rural. Approximately 3,000 people live in the area, which includes the settlements of Yanakie, Foster, Port Franklin, Toora and Port Welshpool.
- The waters of the park are within the Port of Corner Inlet and Port Albert, a local port under the *Marine Act 1988*, and the largest of the five local ports managed by Gippsland Ports as the designated waterway manager.
- Waterways flowing into Corner Inlet Marine and Coastal Park from the predominantly agricultural catchment in the north include the Franklin and Agnes rivers and Golden, Silver, Dead Horse, Poor Fellow Me, Stockyard and Bennison creeks. Creeks flowing from Wilsons Promontory National Park in the south include Cow and Barry creeks. The Corner Inlet catchment is in the West Gippsland Catchment Management Authority region.



Nooramunga Marine and Coastal Park

Establishment

In the 1982 *South Gippsland District 2 Final Report*,[4] the Land Conservation Council recognised the Nooramunga area as one of Victoria's most important coastal habitats for waterbirds. The Council recommended that the area be used primarily to conserve and protect natural ecosystems, particularly the habitat of international migratory waders, and to provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments.

In response to these recommendations, and following a lengthy additional consultation and planning process (see section 2.1.1), Nooramunga Marine and Coastal Park was reserved in 1986 and included in Schedule Four of the *National Parks Act 1975*. Most of the marine and coastal park was reserved for 'conservation of areas of natural interest or beauty or scientific history or archaeological interest and areas for public recreation'. As the park was quickly reserved, pre-existing reserved parcels of Crown land were not included in the 1986 reservation or Schedule Four of the *National Parks Act 1975*. Survey work from more than a decade ago needs to be recommenced and completed in order for these areas to be re-reserved in accordance with the intentions reflected in Government announcements, maps and publications, and the indicative plan lodged in the Central Plan Office at the time of gazettal.

Natural values

- Nooramunga Marine and Coastal Park is an area of high ecological and geomorphological significance. The park is characterised by a sand barrier island complex with diverse habitats, including sand islands, shallow channels and intertidal mud and sand flats.
- The marine and coastal park is part of the internationally significant Corner Inlet Ramsar site. The Ramsar site contains habitat for significant numbers of shorebirds and waterfowl, including species listed under international migratory bird agreements.
- Island beaches provide valuable habitat for shore-nesting birds including hooded plovers, terns and oystercatchers,[99] with fox-free islands having higher densities of shorebirds.[102]
- About 30 islands occur in the park, the largest of which are Snake Island and St Margaret Island.[99] Both of these islands support a range of ecological communities including woodlands, freshwater swamps, wet-heath, paperbark shrubland, saltmarsh and mangroves.[99] Smaller islands are largely scrubland with saltmarsh and mangroves while outer islands are mainly bare sandbars with small areas of scrub.[99]
- In addition to an array of migratory and resident bird species, a range of other animals inhabit Nooramunga Marine and Coastal Park. For example, Snake Island is home to eastern grey kangaroos, swamp wallabies and the threatened ground parrot and swamp antechinus.[103] Koala and hog deer have been introduced to the island.[103]
- The park also contains remnant native coastal vegetation on the mainland, Gellions Run has a range of plant communities including open forest, woodland, coastal scrub, heathland and wetlands.[99]

- The marine habitats found in the park include saltmarsh, mangrove and seagrass habitats. Mangroves and seagrass habitats can be important nursery and feeding areas for fish and other marine life.[99]
- At low tide, the park's extensive mud, seagrass and sand flats are important feeding areas for a number of migratory and resident bird species; at high tide these areas provide food for various marine organisms[102] including a range of fish species.[99]
- The barrier island system included in the park is of national geomorphological significance.[99] Its geomorphological processes are of scientific interest and provide opportunities for interpretation and education.[99] A number of additional sites of state and regional geological and geomorphological significance also occur in the park.

Enjoyment, appreciation and use

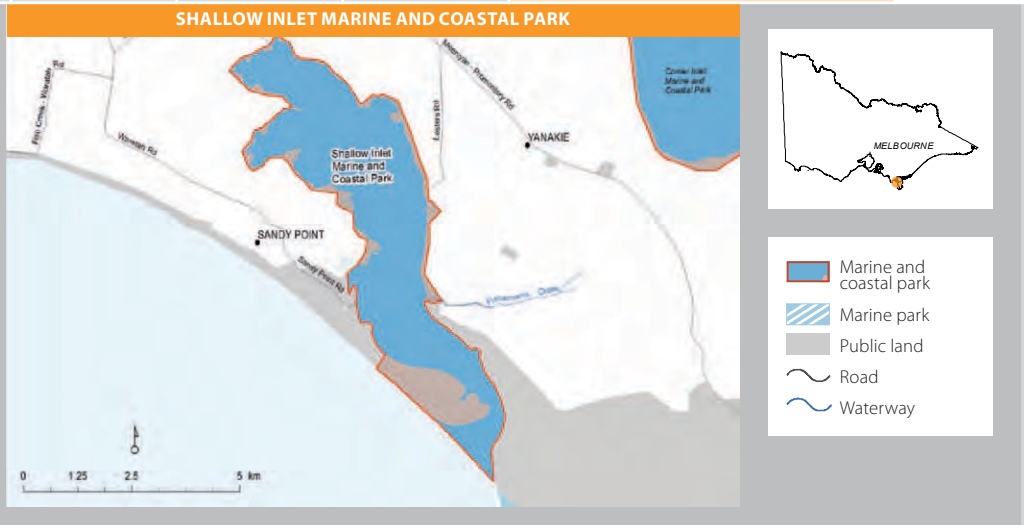
- Recreational activities enjoyed in the marine and coastal park include fishing, boating, sea kayaking, walking, nature study, horse riding and camping.[99]
- The Victorian Wader Study Group surveys migratory waders and other shorebirds in the park.
- The Corner Inlet commercial fishery includes the waters of both the Corner Inlet and Nooramunga marine and coastal parks. Commercial species caught in this fishery area include flathead, King George whiting, Southern Sea garfish and calamari.[101]
- Seasonal hunting for hog deer and game duck is allowed in some sections of the marine and coastal park.[104]
- Cattle are mustered on and off Snake Island (where they graze), making the journey to and from the mainland at low tide across a narrow channel.[103] The cattle muster attracts recreational horse riders.

Location and extent

- 30,090 hectares (Victoria's largest marine protected area; includes around 11,780 hectares of terrestrial environment)
- Nooramunga Marine and Coastal Park extends from Little Snake and Snake islands off Port Welshpool to McLoughlins Beach at the easternmost end of Ninety Mile Beach. It includes the barrier islands and most islands between the barrier coast and the mainland, and the adjoining mainland coastal land, including Gellions Run.
- The land adjoining Nooramunga Marine and Coastal Park is largely rural. Adjacent settlements include Port Albert (population 247), Alberton (population 260), Langsborough, Tarraville, Robertsons Beach and Manns Beach (combined population 360). Port Welshpool (population 179) lies just west of the marine and coastal park.
- The waters of the park are within the Port of Corner Inlet and Port Albert, a local port under the *Marine Act 1988*, and the largest of the five local ports managed by Gippsland Ports as the designated waterway manager.
- Discharges into Nooramunga Marine and Coastal Park include Nine Mile Creek, Albert River, Tarra River, Neils Creek and Bruthen Creek. The predominantly agricultural catchment is within the Corner Inlet Basin in the West Gippsland Catchment Management Authority region.

Further information on Nooramunga Marine and Coastal Park is available from a range of agency websites, often within consolidated reports on the broader Corner Inlet environment. Websites with information on Corner Inlet include:

- www.parkweb.vic.gov.au (Parks Victoria)
- www.dse.vic.gov.au (the Department of Sustainability and Environment)
- www.wgcma.vic.gov.au (West Gippsland Catchment Management Authority)
- www.environment.gov.au (the Australian government Department of Sustainability, Environment, Water, Populations and Communities).



Shallow Inlet Marine and Coastal Park

Establishment

In the 1982 *South Gippsland District 2 Final Report*,[4] the Land Conservation Council recognised Shallow Inlet as particularly important for migratory birds. The Council recommended that the area be used primarily to conserve and protect marine ecosystems, particularly the habitat of international migratory waders, and to provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments.

In response to these recommendations, and following an additional consultation and planning process, the Shallow Inlet Marine and Coastal Park was reserved in 1986 and included in Schedule Four of the *National Parks Act 1975*. The reservation purpose was documented as 'conservation of areas of natural interest or beauty or scientific history or archaeological interest and areas for public recreation'. As the park was quickly reserved, pre-existing reserved parcels of Crown land were not included in the 1986 reservation. These areas still need to be re-reserved in accordance with the intentions reflected in Government announcements, maps and publications, and the indicative plan lodged in the Central Plan Office at the time of gazettal.

Natural values

- Shallow Inlet is a tidally dominated bay with a dynamic sandy barrier and mouth that migrates cyclically over long periods of time.[27] As a tidally dominated embayment with an interesting barrier formation, it is considered unusual and significant from a geological and geomorphological perspective.[27]
- Shallow Inlet has extensive intertidal and subtidal mud and sand flats. Much this area is vegetated with seagrass. Large beds of bivalve molluscs are found on the intertidal flats, which are also home to large groups of soldier crabs.[105]
- The intertidal flats provide excellent shorebird habitat.[106] Shallow Inlet Marine and Coastal Park is an East Asian-Australasian Flyway Site recognised as internationally significant for migratory shorebird species, particularly the double-banded plover, red-necked stint, sanderling, curlew sandpiper and eastern curlew.[106]
- A few low islands with saltmarsh vegetation occur in the park. The fringing coastline of Shallow Inlet contains saltmarsh areas backed by swamp paperbark scrub and coastal banksia woodland in some areas.

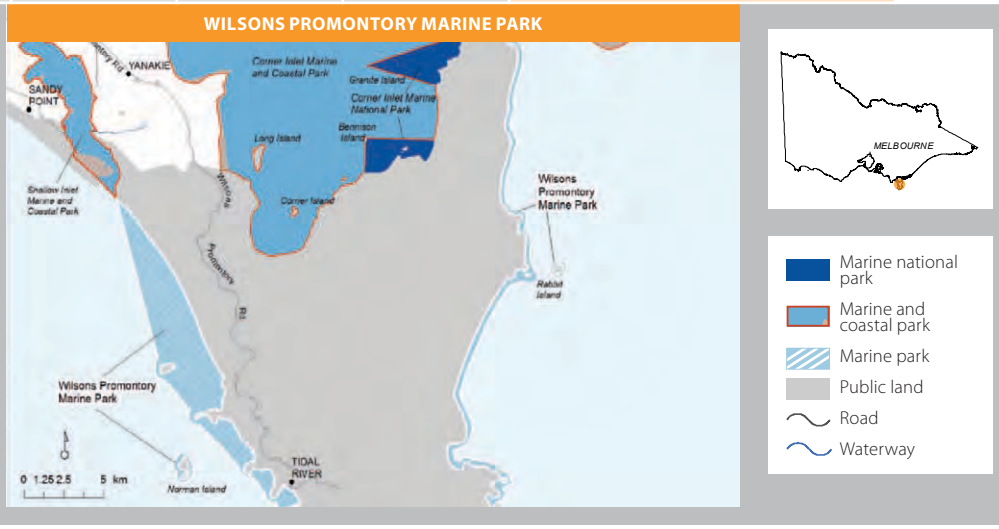
Enjoyment, appreciation and use

- Recreational activities enjoyed in the park include fishing, swimming, boating and sail boarding.[105] The protected and shallow waters of the inlet make it popular as a family summer holiday destination[105]. Recreational users mainly access Shallow Inlet via a road from Sandy Point, launching boats on the beach.[105] There is another boat ramp on the eastern shores of the inlet.
- Commercial fishing has ceased in Shallow Inlet, following a voluntary buy-back of bay and inlet commercial fishing licences in 2000.
- Recreational fishing is popular in Shallow Inlet. Species sought after by anglers including King George whiting, flathead, trevally and Australian salmon.
- The marine and coastal park has a camping ground on its eastern shores.

Further information on Shallow Inlet Marine and Coastal Park can be found Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 1,975 hectares (including around 360 hectares of terrestrial environment)
- The marine and coastal park is located on the eastern side of Waratah Bay northwest of Wilsons Promontory, and encompasses Shallow Inlet, including small muddy islands in the inlet, as well as a relatively small amount of coastline adjacent to the inlet.
- The surrounding area is largely rural; Sandy Point (population 197), is located about one kilometre from the park.
- Shallow Inlet is a tidally dominated bay receiving a relatively small amount of freshwater input from small creeks in an agricultural catchment. The catchment falls within the West Gippsland Catchment Management Authority region.



Wilsons Promontory Marine Park

Establishment

In the 1986 *South Gippsland District 2 Final Report*, the Land Conservation Council recognised the marine environment around Wilsons Promontory as of great biological, ecological and aesthetic importance to Victoria and recommended the establishment of a marine reserve to protect these significant marine ecosystems.[4] The marine reserve proposed by the Land Conservation Council extended along the eastern and western edges of Wilsons Promontory National Park, and around nearby islands.[4] In response to these recommendations, and following an additional consultation and planning process, the southern area was reserved in 1986 as Wilsons Promontory Marine Reserve and the northern waters as the Wilsons Promontory Marine Park and added to Schedule Four of the *National Parks Act 1975*. The reservation purpose for the marine park was documented as 'conservation of areas of natural interest or beauty or scientific, historic or archaeological interest and areas for public recreation'. The marine park was zoned on establishment mostly as General Use Zone A where commercial fishing and recreational fishing (with some restrictions) were permitted or as Protection Zone where line fishing only was allowed.

Natural values

- Habitats in the marine park include subtidal reef and soft sediment, as well as seagrass in shallow sections of Leonard Bay in the western section of the marine park.[24] Intertidal habitats fall within the boundaries of Wilsons Promontory National Park rather than the marine park.
- Subtidal reef flora and fauna in some areas of the marine park have been surveyed as part of a monitoring program.[90] A similar suite of species are found in the marine park as are found in the adjoining marine national park.[107]
- Norman, Shellback and Rabbit islands support colonies of little penguins and provide habitat for other seabird species. While these islands form part of Wilsons Promontory National Park, the marine park provides complementary feeding habitat for species which utilise both marine and terrestrial environments.
- Species listed as being of conservation significance that have been observed in or near the marine park include southern right and humpback whales, hooded plover and sooty oystercatchers.
- A monitoring program for the flora and fauna of Wilsons Promontory's subtidal reef habitat has been in place since 1999 with up to 28 sites inspected over 10 survey events.[90] The current monitoring program includes three sites in the western area of the marine park, one in the Norman Island area and two in the eastern part of the marine park.[90]

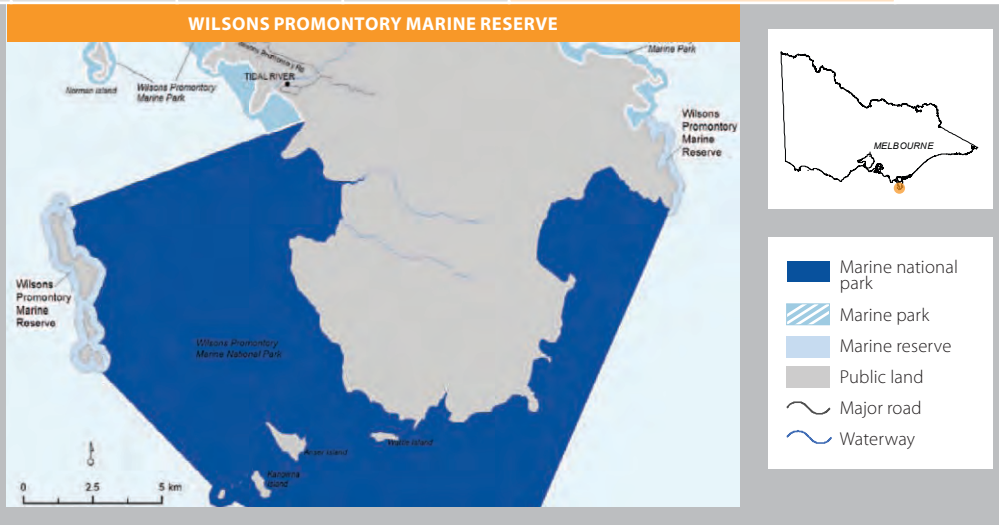
Enjoyment, appreciation and use

- The marine park adjoins Wilsons Promontory National Park and Wilsons Promontory Marine National Park, and provides for complementary nature-based recreational activities such as boating, snorkelling and diving.[24] Swimming and surfing are also popular at suitable and accessible locations.
- Twelve of the offshore islands in the national park, including Shellback, Norman and Rabbit islands and Rabbit Rock, are managed as the remote and natural 'Wilsons Promontory Islands Area' under the *National Parks Act 1975*.
- Both recreational and commercial fishing are allowed in the marine park. Commercial fishers target abalone and southern rock lobster as well as fin fish and bottom dwelling species.[24]

Further information on Wilsons Promontory Marine Park can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 5,565 hectares
- The marine park covers the western and eastern coastline north of the no-take Wilsons Promontory Marine National Park: from Norman Bay on the western side to Shallow Inlet entrance including the waters around Norman and Shellback islands, and from Refuge Cove on the eastern side to Entrance Point and the waters around Rabbit Island.
- The boundary of the marine park where it abuts Wilsons Promontory National Park is at low water mark, so the intertidal areas are in the national park not the marine park.
- The marine park adjoins Wilsons Promontory National Park which has a main camping and service area at Tidal River. Outside the national park, there is a small settlement at Yanakie (population of Yanakie and surrounding region 382).
- A number of creeks flow into the marine park from the adjacent Wilsons Promontory National Park. Darby River and Tidal River discharge into the western section of the marine park and Sealers Creek discharges on the east coast. Wilsons Promontory National Park falls within the West Gippsland Catchment Management Authority region.



Wilsons Promontory Marine Reserve

Establishment

In the 1986 *South Gippsland District 2 Final Report*, the Land Conservation Council recognised the marine environment around Wilsons Promontory as of great biological, ecological and aesthetic importance to Victoria and recommended the establishment of a marine reserve to protect these significant marine ecosystems.[4] The marine reserve proposed by the Land Conservation Council extended along the eastern and western edges of Wilsons Promontory National Park, and around nearby islands.[4] In response to these recommendations, and following an additional consultation and planning process, the southern area was reserved in 1986 as Wilsons Promontory Marine Reserve and the northern waters as the Wilsons Promontory Marine Park and added to Schedule Four of the *National Parks Act 1975*. The reservation purpose of the marine reserve was documented as 'conservation of areas of natural interest or beauty or scientific, historical or archaeological interest'. Most of the marine reserve was incorporated into Wilsons Promontory Marine National Park in 2002.

Natural values

- Habitats found in the marine reserve include subtidal soft sediment and reef, along with seagrass habitat at Great Glennie Island.[24] Intertidal habitats fall within the boundaries of Wilsons Promontory National Park, which extends to the low water mark.
- Subtidal reef flora and fauna in the marine reserve have been surveyed as part of a monitoring program.[90] A similar suite of species are found in the marine reserve as are found in the adjoining marine national park.[107]
- There are four breeding colonies of little penguins found within the Glennie Group of islands, which the marine reserve surrounds. These islands also provide significant habitat for shorebird species. There are a number of seal haulout sites within the Glennie Group of islands. The marine reserve around the islands contains complementary feeding habitat for these species.
- A monitoring program for the flora and fauna of Wilsons Promontory's subtidal reefs has been in place since 1999 with up to 28 sites inspected over 10 survey events.[90] The current monitoring program includes one site in the Glennie Group section and three in the eastern section of the marine reserve.[90]

Enjoyment, appreciation and use

- The marine reserve adjoins Wilsons Promontory National Park and Wilsons Promontory Marine National Park, and provides for complementary nature-based recreation activities such as diving and boating.[24] Twelve of the offshore islands in the national park, including the islands of the Glennie group, are managed as the remote and natural 'Wilsons Promontory Islands Area' under the *National Parks Act 1975*.
- Both recreational and commercial fishing are allowed in the marine reserve. Commercial fishers target abalone and southern rock lobster as well as fin fish and bottom-dwelling species.[24] Recreational fishers target a range of bottom-dwelling and pelagic species including whiting and flathead, sharks and kingfish, while recreational divers also target abalone and southern rock lobster.

Further information on Wilsons Promontory Marine Reserve can be found on Parks Victoria's website at www.parkweb.vic.gov.au.

Location and extent

- 630 hectares (Victoria's smallest multiple-use marine protected area)
- The current Wilson Promontory Marine Reserve consists of areas that were not included in the Wilsons Promontory Marine National Park in 2002. One section surrounds the Glennie Group of islands in the Wilsons Promontory National Park from the low water mark to 300 metres offshore. Another section is on the eastern side of Wilsons Promontory between Cape Wellington and the southern end of Refuge Cove, from low water mark to 300 metres offshore, and bordered by Wilsons Promontory Marine National Park to the south and Wilsons Promontory Marine Park to the north.
- A very small area of marine reserve also remains in the southern end of Norman Bay, and technically the marine reserve also remains below 200 metres beneath the seabed of the marine national park.
- The boundary of the marine reserve where it abuts Wilsons Promontory National Park is at low water mark, so the intertidal areas are in the national park not the marine reserve.
- The Glennies section of the marine reserve sits several kilometres offshore of Wilsons Promontory. The eastern section of the marine reserve adjoins a relatively remote part of the terrestrial national park, which has a main camping and service area at Tidal River. Outside the national park, there is a small settlement at Yanakie (population of Yanakie and surrounding region 382).
- Some small creeks flow into the eastern section of the marine reserve from the adjacent Wilsons Promontory National Park. Freshwater input to the Glennie Group area of the marine reserve is minimal. The national park falls within the South Gippsland Basin in the West Gippsland Catchment Management Authority region.

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Appendix 1: Submissions received

Individual
Russ Allardice
Lou Baxter
Sharon Blum[§]
William Boyle
Melanie Costanzo
Tracey Costanzo
Patrick Coutin
Peter Crowcroft[§]
Chris Daniel
Regina Gleeson
Cecilia Hartigan
Rebecca Hosking
Rebecca Hosking, Mark Simson and Sophie Small
Shannon Hurley
Jim Kerin
Hugh Kirkman
John McDougall
Raymond Millman
Maurice Schinkel
Ben Scullin
Brian Shields
Daniel Stanilovic
Jonathon Stevenson
Geoff Wilson

50 submissions were also received from students under 18 who are not named here for privacy reasons (see section 1.7.1)

Organisation
Abalone Industry Committee
Australian Fishing Trade Association
Australian Marine Ecology
Barwon Coast Committee of Management Inc
BirdLife Victoria Conservation Committee
Department of Primary Industries
East Gippsland Shire Council
Eastern Zone Abalone Industry Association Inc.
Environment Defenders Office (Victoria) Ltd
Fishermen Direct Pty Ltd
Friends of Beware Reef
Friends of Eagle Rock Marine Sanctuary (FERMS)
Friends of the Bluff Inc
Gippsland Ports
Glenelg Shire Council
Jan Juc Coast Action Group
Jawbone Marine Sanctuary Care Group
Lorne-Aireys Inlet P-12 College - Grade 3/4
Marine Care Point Cooke
Marine Care Ricketts Point Inc
Mordialloc Beaumaris Conservation League Inc.
Port of Melbourne Corporation
RMIT Underwater Club
Seafood Industry Victoria
Surfers Appreciating Natural Environment
Tasmanian Seafoods Pty Ltd
Victorian Abalone Council
Victorian National Parks Association
VRFish
Western Coastal Board

[§] Eco-logic Education & Environment Services

Appendix 2: Purposes of establishment for Victoria's marine protected areas

VEAC is examining and assessing the performance and management of existing marine protected areas in meeting the purposes for which they were established, particularly the protection of the natural environment, indigenous flora and fauna and other natural and historic values (see term of reference a – section 1.3). The purposes of establishment for marine protected areas can be drawn from a range of sources; key sources are documented below.

No-take marine protected areas (marine national parks and marine sanctuaries)

Source	Description of purpose
National Parks Act 1975	**Section 4: Objects of the Act** (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; **Section 17D: marine national parks and marine sanctuaries** The Secretary must— (a) ensure that each marine national park and each 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.
Marine, coastal and estuarine investigation: final report, Environment Conservation Council (2000)	**Recommended marine national parks (recommendation A)** The recommended areas … be used to: (i) conserve and protect biodiversity and natural processes (ii) maintain natural ecosystems as a reference against which other areas may be compared (iii) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments, where consistent with (i) and (ii) above **Recommended marine sanctuaries (recommendation B)** The recommended areas … be used to: (i) conserve and protect biodiversity and natural processes (ii) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments, where consistent with (i) **Section 3.7: the proposed system** Marine national parks are highly protected areas … in which no fishing, extractive or damaging activities are allowed. There are no restrictions on access, and activities such as recreation, tourism, education and research are encouraged. Marine sanctuaries are smaller highly protected areas designated for protection of their special natural values, in which no fishing, extractive or damaging activities are allowed. These areas also complement the larger marine national parks.

No-take marine protected areas (marine national parks and marine sanctuaries) *continued*

Source	Description of purpose
Government implementation of Environment Conservation Council recommendations	**2nd reading speech, Legislative Assembly 16 May 2002 (key points paraphrased)** • protect representative samples of Victoria's beautiful, distinctive and diverse underwater environments • enjoy, appreciate and learn about this magnificent marine heritage • contribute to the nationally agreed objective of establishing a comprehensive system of protected areas representative of Australia's biological diversity
From *Guidelines for Establishing the National Representative System of Marine Protected Areas ANZECC++ Task Force on Marine Protected Areas (1998)* and *Progress in implementing the National Representative System of Marine Protected Areas* (Marine Protected Areas Working Group 2007)	**National Representative System of Marine Protected Areas (NRSMPA)** • primary goal of NRSMPA is to establish and manage a comprehensive, adequate and representative system of marine protected areas to contribute to the long-term ecological viability of marine and estuarine systems, to maintain ecological processes and systems, and to protect Australia's biological diversity at all levels • secondary goals are (compatible with the primary goal) to: - promote the development of marine protected areas within the framework of integrated ecosystem management; to provide a formal management framework for a broad spectrum of human activities, including recreation, tourism, shipping and the use or extraction of resources, the impacts of which are compatible with the primary goal - provide scientific reference sites; to provide for the special needs of rare, threatened or depleted species and threatened ecological communities; to provide for the conservation of special groups of organisms, e.g. species with complex habitat requirements or mobile or migratory species, or species vulnerable to disturbance which may depend on reservation for their conservation - to protect areas of high conservation value including those containing high species diversity, natural refugia for flora and fauna and centres of endemism; to provide for the recreational, aesthetic and cultural needs of indigenous and non-indigenous people
International Union for Conservation of Nature (IUCN) categories	IUCN categories are a classification and reporting tool used by jurisdictions nationally and internationally, and reflect rather than direct management. The marine national parks and marine sanctuaries can be categorised as IUCN Category II or III protected areas. Category II protected areas are managed mainly for ecosystem protection and recreation and Category III areas managed mainly for conservation of natural features.

++Australian and New Zealand Environment and Conservation Council

Multiple-use marine protected areas (marine parks, marine and coastal parks and marine reserve)

Source	Description of purpose
National Parks Act 1975	**Schedule Four** Multiple-use marine protected areas are included in Schedule Four of the *National Parks Act 1975*. Parts one to five (inclusive) and seven in Schedule Four are the six multiple-use marine protected areas. Section 19B provides for any land temporarily or permanently reserved under section 4 of the *Crown Land (Reserves)* Act 1978 to be placed under the control and management of the Secretary and for the Secretary to control manage and use the land for the purposes for which it is reserved. Section 19F provides that such land may be included in Schedule Four and for those provisions of the Act which are specified in Schedule Four to apply to the land as though it were a park.
Reservation of areas under the *Crown Land (Reserves) Act 1978* (reservation purposes) and supporting plans lodged in the Central Plan Office; appointment of the Director of National Parks to manage the areas; and inclusion of the areas under the *National Parks Act 1975*.	**Wilsons Promontory Marine Park and Corner Inlet, Nooramunga and Shallow Inlet marine and coastal parks** The three marine and coastal parks and one marine park were reserved in 1986 for the purpose of conservation of areas of natural interest or beauty or scientific historical or archaeological interest and areas for public recreation. Following the recommendations of the Land Conservation Council in its *Final Recommendations for South Gippsland Area District 2* (1982 see below), and a subsequent consultation and planning process, these marine and coastal parks were established in 1986. The intended extent of the marine and coastal parks, which included terrestrial areas, is reflected on the plan accompanying the reservation and lodged in the Central Plan Office, and in other maps and publications at the time the Government announced their establishment. **Wilsons Promontory Marine Reserve** This area was reserved in 1986 for the purpose of conservation of areas of natural interest or beauty or scientific historical or archaeological interest. **Bunurong Marine Park** The majority of the area was reserved in 1991 at the time of establishment of the marine park. The reservation purpose of this area was preservation of an area of ecological significance, conservation of an area of natural interest or beauty or of scientific, historic or archaeological interest and for public recreation. About a quarter of the area of the marine park was previously reserved in 1984 for the purpose of protection of the coastline. At the time of establishment of the marine park, a central section was set aside as the Bunurong Sanctuary Zone Marine Reserve under the *Fisheries Act 1968* for conservational, scientific, educational and recreational purposes, and rules were proclaimed that prohibited fishing. The central sanctuary zone was subsumed into Bunurong Marine National Park in 2002.
Proposal for the establishment of the Bunurong Marine Reserve	The 1987 consultation document *Proposal for the establishment of the Bunurong Marine Reserve in waters near Inverloch, Victoria* recognised the "high conservation, recreational, educational and scientific value placed on this environment" and put forward a proposal for establishment of a reserve extending one kilometre offshore. Different levels of protection were proposed as the multiple-use marine reserve was to include a no-take sanctuary zone.
Land Conservation Council *Final Recommendations South Gippsland Area District 2* (1982)*	**Recommendation A6: Wilsons Promontory Marine Reserve^^** That the area of 9,700 hectares shown on the map be used: a) primarily to conserve and protect significant marine ecosystems b) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments **Recommendations A7 and A9: Corner Inlet and Shallow Inlet marine and coastal parks** That the areas (including land along the shoreline) be used: a) primarily to conserve and protect marine ecosystems, particularly the habitat of international migratory waders b to provide opportunities for recreation and education associated with the enjoyment and understanding of natural features **Recommendation A8: Nooramunga Marine and Coastal Park** That the area of 22,390 hectares, including public land along the coast, be used: a) primarily to conserve and protect natural ecosystems, particularly the habitat of international migratory waders b) to provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments

*Note that following release of this report, the Corner Inlet and Nooramunga areas was designated as a wetland of international significance under the Ramsar Convention.

^^This recommendation was implemented as the Wilsons Promontory Marine Park and Wilsons Promontory Marine Reserve. Most of the marine reserve was incorporated into the Wilsons Promontory Marine National Park in 2002.

Multiple-use marine protected areas (marine parks, marine and coastal parks and marine reserve) *continued*

Source	Description of purpose
Land Conservation Council *Final Recommendations South Gippsland Area District 2* (1982)* *continued*	**Bunurong Marine Park** Bunurong Marine Park is unusual in that it is the only Victorian marine protected area with no specific Land Conservation Council (LCC) recommendation relating to its establishment. The LCC's *Melbourne Area District 2 review final recommendations* (1994) noted the area straddled the border between Councils' Melbourne Study Area and South Gippsland Area, District 2 along the coastline at Cape Paterson. Council did not make a recommendation about the Bunurong Marine Park in its Melbourne Area District 2 review, noting that any review would be covered as part of its concurrent Marine and Coastal Special Investigation.
Government proposal for establishment of marine protected areas in Victoria (1982)**	In 1982, with the aim of developing a system of marine parks and reserves similar to that existing on land, the government proposed: • extension of the Harold Holt Marine Reserves in Port Phillip Bay (which were first declared in 1979), • creation of a series of marine and coastal parks in the Wilsons Promontory and Corner Inlet area, and • declaration of a marine reserve in the Eagles Nest/Andersons Inlet area near Inverloch (Bunurong). The Victorian Government's marine parks and reserves program aimed to protect representative samples of natural marine ecological systems, habitat of special value for marine natural flora and fauna and significant areas for Victoria's natural heritage. The intent was to provide not only for the conservation of marine plants and animals, but also for the protection of geological, scenic, historical, cultural and archaeological features of significance, as well as for opportunities for recreation, education and appreciation of the natural environment.
IUCN classification	IUCN categories are a classification and reporting tool used by jurisdictions nationally and internationally, and reflect rather than direct management. Multiple-use marine protected areas could be classified as IUCN Category VI marine protected areas, which are managed to protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.

*Note that following release of this report, the Corner Inlet and Nooramunga areas was designated as a wetland of international significance under the Ramsar Convention.

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